



Swansea University
Prifysgol Abertawe

**Assessing the Quality, Utility, and Value of Case Formulation in
the Offender Personality Disorder Pathway**

Victoria Wheable

BSc (Hons), MSc

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Doctor of Philosophy

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Declarations and Statements

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed .. [REDACTED] (candidate)

Date ... 18/03/21

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated. Sources are acknowledged by giving explicit references. A full reference list is appended.

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STATEMENT 2

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Summary (Abstract)

The Offender Personality Disorder Pathway (OPDP) was co-commissioned in 2011 by the National Offender Management Service (NOMS) and the National Health Service (NHS) to better manage high-risk offenders with personality disorder. To meet this aim, the OPDP provides offenders with a pathway of psychologically centred services, informed in part by an individualised forensic case formulation. Forensic case formulation is a process by which hypotheses are developed to explain the psychological origins of an offender's presenting problems and difficulties, why and how these problems have been maintained over time, and how these problems may be effectively reduced in future. However, despite the centrality of forensic case formulation to the OPDP, its quality, utility, and value within this service is not well understood. To begin to remedy this, the four studies presented within this thesis were conducted to a) empirically investigate the necessary components of a 'high-quality' forensic case formulation, b) identify the potential benefits of completing forensic case formulation within the OPDP, and c) understand how forensic case formulation within the OPDP can be usefully improved to enhance any such benefits. Despite the disruption of COVID-19 on research proceedings, the conclusions of this research indicate that performing forensic case formulation within the OPDP *does* have a number of small-scale benefits, and that it is possible for these benefits to be further enhanced. These findings are expected to have important implications for practice within the OPDP and for the use of forensic case formulation in general. It is however strongly recommended that the research presented within this thesis be developed further to examine whether the small-scale benefits identified can indeed be enhanced to create larger positive outcomes, such as reductions in recidivism. A comprehensive plan for this further research is included.

Dissemination of Research

Publications

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Abbreviations

AP	Approved Premises
Audit Tool	Case and Risk Formulation Self-Auditing Tool
CFQC	Case Formulation Quality Checklist
CFQC-R	Case Formulation Quality Checklist - Revised
DRI-R	Dual Role Relationships Inventory – Revised
HCR-20	Historical Clinical Risk Management-20
HMPPS	Her Majesty’s Prison and Probation Service
nDelius	National Delius (NPS Case Management System)
MMAT	Mixed Methods Appraisal Tool
NHS	National Health Service
NOMS	National Offender Management Service
NPS	National Probation Service
OASys	Offender Assessment System
OM	Offender Manager
OPDP	Offender Personality Disorder Pathway
PBRS	Perceived Benefits Rating Scale
PD-KASQ	Personality Disorder - Knowledge, Attitudes and Skills Questionnaire

Chapter 1: Introduction and Overview of Thesis

1.1 Case Formulation within the OPDP

The Offender Personality Disorder Pathway (OPDP) was co-commissioned in 2011 by the National Offender Management Service (NOMS) and the National Health Service (NHS) to manage and treat high-risk offenders with personality disorder (Joseph & Benefield, 2012). The main aims of the OPDP are to reduce reoffending rates, to improve the psychological health of offenders, and to develop the confidence, competence, and skills of staff working with these offenders (NOMS & NHS, 2015a). To achieve these aims, offenders¹ screened into the OPDP (and their offender managers) are provided with tailored support. As part of this, many offenders screened into the OPDP receive a bespoke package of management and treatment interventions, typically selected in part on the basis of an individualised case formulation. Case formulation can be described as a “hypothesis about the causes, precipitants and maintaining influences of a person’s psychological, interpersonal, and behavioural issues” (Eells, 2007, p. 4). Within the OPDP, case formulation is therefore used to gain a better psychological understanding of each offender’s criminal behaviour, clinical problems, and criminogenic needs (Joseph & Benefield, 2012).

Within the OPDP, the process of formulating a case typically begins with a case consultation meeting, usually requested by the offender manager (OM) of that case. These meetings are generally attended by both the OM and a psychologist. Through case discussion and collaboration, the main aim of these meetings is to improve the OM’s understanding of the case and/or to identify appropriate methods for the OM to best manage and facilitate progress within the case (Knauer et al., 2017). After the consultation has taken place, the psychologist produces a written case formulation using the information discussed within the

¹ The choice to use the term ‘offender’ is explained on p. 7.

meeting, which the OM can then read and refer back to as needed. Each written case formulation generally consists of: an overview of the case discussed; a hypothesised psychological explanation of the causes, development, and maintaining influences of offender's presenting problems; and a set of recommendations to be utilised by the OM with the aim of facilitating further progress within the case and/or reducing the offender's risk of harm. Due to this approach, case consultation meetings have been described as the *process* of formulating, whereas written case formulation has been described as the *product* of this process (NOMS & NHS, 2015b).

Uniquely, three different 'levels' of written case formulation are produced within the OPDP, which represent different levels of complexity. These formulation levels were introduced into the OPDP as a way of "providing formulations flexibly in response to widely divergent contexts and practitioner needs" (NOMS & NHS, 2015b, p. 40). Level 1 formulations are the simplest, often consisting of a brief (<1 page) written understanding of an offender's main presenting problem/s. Level 2 formulations are often more detailed (1-2 pages), making more psychological connections between pieces of information to explain *how* and *why* the offender's presenting problems may have developed. Level 3 formulations are the most complex (typically >2 pages), as they often incorporate information gained from formal assessments to develop a fully comprehensive understanding of the offender as a whole (including their presenting problems) by applying the use of an empirically supported psychological theory (Logan, 2017; NOMS & NHS, 2015b). For all three levels, the psychological explanation developed within the formulation is used to generate a set of tailored recommendations for the ongoing management and treatment of the offender. Due to its central focus on case formulation, the OPDP has been described as a "formulation-based approach" (NOMS & NHS, 2015a, p. 3).

1.2 Thesis Rationale and Aim

Case formulation has only recently been incorporated into forensic services such as the OPDP, yet it has been a core competency within clinical practice for many years (Division of Clinical Psychology, 2011). Despite its long history within clinical practice, evidence supporting the use of case formulation has been described as “sparse, incomplete and contradictory” (Sturme y & McMurr an, 2011, p. 283). Due to this lack of understanding, some have argued that “case formulation has found a place in practice well ahead of any evidence base for its purported advantages” (Kuyken, 2006, p. 26).

This lack of empirical research on case formulation suggests that the benefits of performing individual case formulation within services such as the OPDP are currently unknown. Moreover, it has been suggested that the consequences of producing *inaccurate* formulations within forensic services could be “very great indeed” (Hart et al., 2011, p. 122), including the possibility of “additional adverse outcomes such as repeat serious offending, significant injuries and trauma to others, and large costs of incarceration and long-term treatment” (Sturme y & McMurr an, 2011, p. 288). This is concerning, particularly in the context of managing and treating high-risk offenders within the OPDP, and thus highlights an urgent need for research to examine the impact that case formulation may be having on this population. Due to these reasons, the main aim of the present thesis is to explore the quality, utility, and value of individual case formulation within the OPDP.

1.3 Thesis Structure and Content

The core content of this thesis has been divided into six chapters (Chapter 2 to Chapter 7). Chapter 2 contains an integrative review which was conducted by the researcher to identify, evaluate, and synthesise the findings of all research published on the topic of case formulation within forensic services (known as ‘forensic case formulation’) since a key paper

by Hart et al. (2011) drew attention to the lack of research within this field. The purpose of conducting this integrative review was to understand what further knowledge has been gained within the forensic case formulation field since 2011, and to identify whether imperative questions surrounding the quality, utility, and value of case formulation within forensic services have now been successfully answered. The findings of this integrative review were used to direct the content and focus of the studies conducted within this thesis.

Chapter 3 details Study 1a and Study 1b, which were conducted to address one of the main findings identified within the integrative review; that research to date has not yet objectively determined what the necessary components of a ‘high-quality’ forensic case formulation are. Study 1a was therefore based upon the notion that by examining statistical relationships between forensic case formulation components and offender outcomes, it may be possible to develop a more objective understanding of ‘what works’ (i.e., which formulation components have the most positive impact). Study 1b was then conducted to supplement the statistical findings of Study 1a. Within Study 1b, a range of OPDP staff were asked to use their expertise and experience in the field to rate a range of forensic case formulation features according to how strongly they believed each of them to be associated with offender outcomes. Based on the combined findings of Study 1a and Study 1b, two items contained within the Case and Risk Formulation Self-Auditing Tool (Audit Tool, NOMS & NHS, 2015b) were identified as having a potentially important influence on offender outcomes.

Chapter 4 describes Study 2, which was conducted to further verify and explore the combined findings of Study 1a and Study 1b. The main aim of Study 2 was to explore the *mechanism* by which these two Audit Tool items may be capable of influencing offender outcomes. To do this, a quasi-experimental study was designed and launched, in which formulations written by OPDP psychologists were to be allocated into one of four conditions

according to their scores on these two Audit Tool items. A range of offender manager (OM) and offender outcomes were then to be collected and statistically compared across the four formulation conditions. Unfortunately, the outbreak of COVID-19 at the beginning of 2020 forced the early termination of Study 2. However, the small amount of data collected before its termination was used to form a pilot study, which could be used to inform and refine a future relaunch. One of the main findings of this pilot study was that there is a need for investigation into the utility and impact of the recommendations made within OPDP formulations.

Chapter 5 reports Study 3, which aimed to address one of the main findings of the earlier pilot study by investigating the relevance, feasibility, utility, and impact of the recommendations made within OPDP formulations. Due to the ongoing COVID-19 pandemic, this study was required to use secondary research methods. Therefore, a detailed multiple case study was performed on the recommendations made within 10 OPDP cases; five with 'positive' outcomes, and five with 'negative' outcomes. When these two sets of cases were compared, a clear pattern of differences were identified in the relevance, feasibility, utility, and impact of the formulation recommendations made. On the basis of these results, a provisional logic model was developed to operationalise the process by which formulation recommendations were seen to contribute to positive outcomes, and where and why this process was commonly found to be interrupted in cases with negative outcomes.

Chapter 6 presents Study 4, in which a range of OPDP staff were invited to complete an online survey about their experiences of writing case formulations and of receiving case formulation training. It was expected that the results of this survey would reveal how satisfied staff currently are with their formulation training, and how formulation training could best be improved in future to maximise its value and impact for staff. An additional aim of this study was to identify participants who had also authored one or more of the OPDP formulations

analysed within Study 1a. The purpose of this was to link these two datasets together to investigate whether the quantity and quality of formulation training received (as reported within the online survey) could impact the quality of formulations written.

Finally, Chapter 7 contains an overarching discussion of the research findings reported within this thesis, and ends with a conclusion on the current quality, utility, and value of case formulation within the OPDP. This body of research is likely to have implications for the use of case formulation within the OPDP. Recommendations for further research in this area are also described.

1.3.1 Notes on Research Procedures

To conduct research within HMPPS, researchers must first apply for approval from HMPPS National Research Committee (NRC). To gain this approval, researchers must provide evidence that the proposed research will deliver sufficient value for HMPPS, and will be robust in terms of its aims, design, and procedure. In addition, researchers must demonstrate that they have considered (and minimised) any impact of the research on HMPPS operations (i.e., in terms of resource requirements and demands on staff time). Researchers must also provide evidence that suitable data protection and security procedures will be followed (HMPPS, n.d). The first stage of conducting each study within the present thesis was therefore to gain research approval from the NRC. Although in some instances the NRC requested further information about a study before making their decision, approval was granted in each instance within three months of applying. Once NRC approval was granted in each instance, the researcher then sought ethical approval from the ‘College of Human and Health Science Research Ethics Committee’ at Swansea University². For each study, the committee granted approval within two months of applying.

² This is a requirement for all research conducted in association with Swansea University.

The data analysis methods used within each of these studies are distinct from one another (i.e., regression analysis, thematic analysis, multiple-case study, online survey). The decision to use a wide variety of methods was made in part due to finding within Chapter 2 (integrative review) that the methods used within existing literature on forensic case formulation are relatively limited. In place of an overarching ‘methods’ chapter therefore, full details of each of the methods used will be provided within individual chapters.

All studies within the present thesis which involve the analysis of OPDP case information (Study 1a, Study 2, Study 3) were conducted with the use of data from male offenders only. This is primarily due the demographics of the population of interest, as between 2018-2020, 95% of the prison population was male (Clarke, 2021). Reflecting this, the vast majority of offenders screened into the OPDP are male. The tool used to screen offenders into the OPDP (Offender Assessment System Personality Disorder Screen) was also developed with the use of data from male offenders (although this screening tool is also used to assess female offenders).

1.3.2 Notes on Common Terms Used Throughout the Thesis

The term ‘offender’ is used throughout this thesis to refer to individuals who have offended. This term was selected for several reasons: due to its clarity; due the name of the service focused upon (i.e., the *Offender* Personality Disorder Pathway); and because the researcher was made aware during the infancy of this research that the term ‘service user’ is used differently in some OPDP teams than others. In some teams, the term ‘service user’ refers to the offender themselves, whereas in others, the term ‘service user’ refers to the offender manager (OM) of each case (due to the OM being the ‘main recipient’ of the consultation and formulation process). The term ‘offender’ is therefore used throughout the thesis as an abbreviated form of ‘an individual who has committed a criminal offence’.

The term ‘approved premises’ (AP) is also commonly used throughout the thesis. AP can be defined as “controlled accommodation for offenders under the supervision of the probation service” (also known as ‘probation hostels’; Ministry of Justice & South West Midlands Probation Trust, 2012, p. 1). AP represent the ‘half-way point’ between prison and the community. They provide a structured re-entry into society for high-risk offenders, facilitating greater levels of supervision than would be possible if these offenders were released directly into the community (as AP are staffed 24 hours a day). Residents must typically abide by certain curfews, pass regular alcohol and drug tests, adhere to AP ‘house rules’, and comply with their licence conditions³ as standard. If an offender is found to have broken any of these conditions, or it is suspected that their risk of harm has increased, they are typically re-called to custody (HM Inspectorate of Probation, 2017; Ministry of Justice & South West Midlands Probation Trust, 2012).

³ Licence conditions are agreed restrictions that the offender must abide by when released into the community after a custodial sentence (Ministry of Justice & South West Midlands Probation Trust, 2012).

Chapter 2: Integrative Review of Research on Forensic Case Formulation

2.1 Introduction

To begin to develop an understanding of the quality, utility, and overall value of forensic case formulation within the OPDP, it was considered important to firstly explore the findings of existing research conducted within the forensic case formulation field. Early on in this search, a key paper was identified (“Forensic Case Formulation” by Hart et al., 2011), which drew attention to the lack of existing research within the forensic case formulation field and constructed an agenda of recommended research to investigate the value and impact of case formulation within forensic contexts.

On the basis of this, the researcher conducted an integrative review to identify, evaluate, and synthesise the findings of all forensic case formulation research conducted since Hart et al. (2011) published their agenda. Specifically, this review aimed to: examine what knowledge has been gained within the forensic case formulation field since 2011; understand whether imperative questions surrounding the value and impact of forensic case formulation have now been successfully answered; and identify any remaining gaps in the literature that may usefully direct the focus of subsequent research.

2.2 Method

2.2.1 Inclusion Criteria and Search Strategy

An exhaustive search of the forensic case formulation literature was conducted to identify papers fitting the inclusion criteria outlined in Table 1. This search involved the use of electronic databases, hand-searching references within included papers, and contacting known experts within the forensic case formulation field.

Electronic database searches of PsycINFO, PsycARTICLES, MEDLINE, CINAHL

and Web of Science were conducted between June-August 2018. Search terms were designed to capture all relevant literature and were entered as follows: “case formatio* OR case conceptuali* OR case consultatio* AND forensic OR offend* OR personality disorder OR crim* OR carcera* OR priso* OR probation OR parole OR correctio*”.

2.2.2 Search Results

A total of 1,387 records were retrieved with the use of these search methods. After removing duplicates, each record was screened for relevance on the basis of its abstract and title. If a record was deemed relevant on this basis or if its relevance could not be determined, the full text of the article was accessed (n=98). The details of all records screened and the reasons for article inclusion or exclusion were systematically logged in an excel spreadsheet (Appendix A). After excluding all articles which did not meet the specified criteria, 14 studies remained for inclusion within the review. Although this search was designed to identify research conducted on the topic of forensic case formulation in general, 11 of these 14 studies were found to focus on forensic case formulation within the OPDP specifically, suggesting that case formulation may be rarely completed within other forensic services.

To provide a measure of reliability, a second reviewer next assessed the relevance of a number of the included and excluded articles. There were no discrepancies between the decisions made by the two reviewers, indicating a fair and accurate screening process. A full summary of the selection and screening process can be viewed in Figure 1.

Table 1*Inclusion Criteria for Integrative Review*

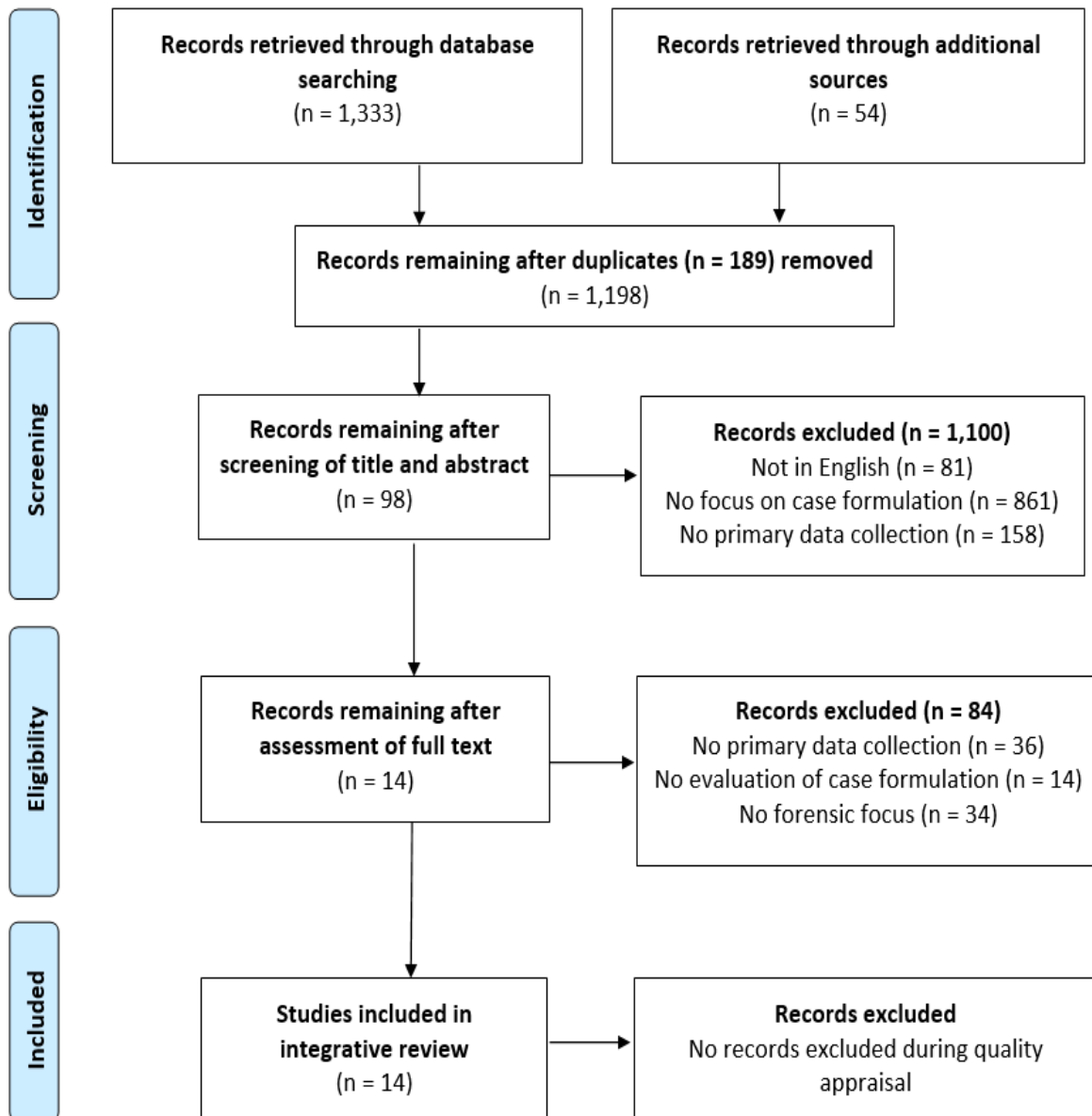
Inclusion Criteria	Rationale
1. English Language.	The primary researcher must be able to read each paper to assess its suitability.
2. Primary collection of data and analysis of outcomes using a recognised method.	Much of the case formulation literature consists of review, opinion, and theoretical papers. The focus of the current review is specifically on recent case formulation <i>research</i> .
3. Specifically focused on case formulation, defined as “a hypothesis about the causes, precipitants and maintaining influences of a persons’ psychological, interpersonal and behavioural problems” (Eells, 2007, p. 4).	By defining what is meant by “case formulation”, it can be ensured that only papers relevant to the current review will be included. Additionally, any paper which uses an alternative name for case formulation is eligible for inclusion if it fits this description.
4. Published since 2011.	The current review is concerned with research published since the paper by Hart et al. (2011) highlighted the lack of research within the forensic case formulation field.
5. Subject matter specifically pertaining to the validity, quality, reliability, value, utility, impact, effectiveness, or outcomes of case formulation.	Many research papers include case formulation as a small element within a larger treatment condition or framework, but do not focus on it exclusively. The current review is concerned with studies that have a clear focus on case formulation.

Table 1 Continued

Inclusion Criteria	Rationale
6. Clear forensic focus	The aim of the current review is to assess recent research within the <i>forensic</i> case formulation field specifically. The reason for this is to inform best practice within the OPDP service, and to evaluate the research that has been conducted in this field since the paper by Hart et al. (2011) was published.

Figure 1

Article Selection and Screening Process



2.2.3 Quality Appraisal

The Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018) was used to assess the quality of the remaining 14 studies. The MMAT was chosen as it is suitable to appraise studies of all designs, has good content validity (Pluye et al., 2009), good inter-rater reliability (Pace et al., 2012; Souto et al., 2014), and is efficient to use (Souto et al., 2014).

Using the MMAT, each study was assessed against a set of five quality criteria tailored to the design used within it. For each of the five criteria, a score of 20% was allocated if a study completely met this criterion, 10% if it partially met this criterion, and 0% if it did not meet this criterion at all. These percentages were then totalled to produce an overall quality score between 0-100%. Studies scoring $\leq 50\%$ were rated as 'low quality', those scoring 60%-80% were rated as 'moderate quality' and those scoring $\geq 80\%$ were rated as 'high quality'. A demonstration of this quality appraisal process is provided in Appendix B. The final quality rating allocated to each paper can be viewed in the right-hand column of Table 2. After this quality appraisal had been completed, a second reviewer then assessed a selection of the 14 studies using the same method to provide a measure of reliability. There were no discrepancies between the decisions of two reviewers in terms of the quality ratings allocated (low, moderate, or high).

Although one study was rated as being of low quality, it was not excluded from the present review. This decision was made primarily to facilitate critical analysis of the recent forensic case formulation literature as a *whole*. This was expected to result in the development of a more thorough and accurate research agenda for the future. To retain full clarity and transparency, the paper rated as low quality will be explicitly identified throughout the review. Please see Table 2 for a brief overview of each of the 14 included studies.

Table 2*Overview of Included Studies (Ordered by Topic)*

Study	Aim	Design/ Method	Participants	Outcome Measure	Main Findings	MMAT Quality Rating
Knauer, Walker and Roberts (2017). Offender personality disorder pathway: the impact of case consultation and formulation with probation staff	To assess if NPS staff knowledge and understanding of personality disordered offenders improved after attending a case consultation and receiving a case formulation letter	Quantitative Non-randomised	72 offender managers ^a and 36 approved premises staff	Bespoke Consultation Questionnaire	Positive increases were observed in all areas after attending a case consultation, but no further increases were observed after receiving a formulation letter	70% - Moderate Quality
McMullan, Ramsden and Lowton (2014). Offender Personality Disorder Pathway: Evaluation of Team Consultation	To understand the impact of team case consultation on criminal justice staff	Qualitative	12 criminal justice staff	Focus groups & Interviews. Content Analysis	Many staff indicated that team case consultation impacted them positively in several different ways. Some staff however reported negative feelings towards consultation	100% - High quality

Table 2 Continued

Study	Aim	Design/ Method	Participants	Outcome Measure	Main Findings	MMAT Quality Rating
Ramsden, Lowton and Joyes (2014). The impact of case formulation focussed consultation on criminal justice staff and their attitudes to work with personality disorder	Assessing the impact of case formulation-focused consultation on offender manager ^a attitudes towards personality disorder	Quantitative Non-randomised	46 offender managers	PD-KASQ & Bespoke Supervision Questionnaire	Offender managers had a better understanding of personality disorder and felt more confident in working with personality disordered offenders after case formulation-focused consultation	50% - Low quality
Whitton, Small, Lyon, Barker and Akiboh (2016). The impact of case formulation meetings for teams	To understand the impact of case formulation meetings on staff working within a secure forensic service	Mixed Methods: Qualitative & Quantitative Descriptive	89 secure forensic service staff	Bespoke Questionnaire	Staff reported improvements in psychological understanding, team consistency, empathy, and insight after attending a case formulation meeting	70% - Moderate Quality

Table 2 Continued

Study	Aim	Design/ Method	Participants	Outcome Measure	Main Findings	MMAT Quality Rating
Brown and Völlm (2013). Case formulation in personality disordered offenders: Views from the front line	To understand the views of offender managers in relation to completing case formulations for personality disordered offenders	Qualitative	19 probation staff with experience of working with personality disordered offenders	Focus groups. Thematic Analysis	Offender managers have a number of concerns about completing case formulations	100% - High quality
Brown and Völlm (2016). The implementation of case formulation by probation officers: service user and carer views	To understand the views of personality disordered offenders and their carers in relation to offender managers completing case formulations	Qualitative	Five personality disordered offenders and five carers of personality disordered offenders	Focus groups. Thematic Analysis	Participants were concerned about offender managers completing case formulations	100% - High quality

Table 2 Continued

Study	Aim	Design/ Method	Participants	Outcome Measure	Main Findings	MMAT Quality Rating
Völlm (2014). Case formulation in personality disordered offenders – A Delphi survey of professionals	To gain consensus on how case formulation for personality disordered offenders should be carried out	Mixed Methods: Qualitative & Quantitative Descriptive	55 personality disorder experts	Electronic Delphi survey.	Experts could not reach consensus in a number of important areas relating to case formulation for personality disordered offenders	70% - Moderate quality
Brown, Beeley, Patel and Völlm (2018). Training probation officers in case formulation for personality disordered offenders	Assessing the impact of training on the quality of case formulations constructed by offender managers and on their attitudes towards personality disorder	Mixed methods: Qualitative & Quantitative Non-randomised	20 offender managers	CFQC & PD-KASQ. Narrative responses.	Both the quality of case formulations completed by offender managers and their attitudes towards personality disorder showed significant improvements after training	70% - Moderate quality

Table 2 Continued

Study	Aim	Design/ Method	Participants	Outcome Measure	Main Findings	MMAT Quality Rating
Mapplebeck, Ramsden, Lowton, Short and Burn (2017). Embedding psychological thinking: an evaluation of a regional training model for probation staff	To observe any change in the case formulation skills of offender managers before versus after training	Qualitative	21 offender managers	Written responses. Thematic Analysis.	Case formulation skills improved somewhat after training	90% - High Quality
Minoudis et al. (2013). An evaluation of case formulation training and consultation with probation officers	To evaluate the psychometric properties of the CFQC and to assess the impact of training on the quality of case formulations completed by offender managers	Quantitative Non-randomised	64 offender managers	CFQC	The quality of case formulations completed by offender managers did not significantly improve after training	60% - Moderate quality

Table 2 Continued

Study	Aim	Design/Method	Participants	Outcome Measure	Main Findings	MMAT Quality Rating
Radcliffe, McMullan and Ramsden (2018). Developing offender manager competencies in completing case formulation: An evaluation of a training and supervision model	To compare the quality of case formulations completed by offender managers with and without OPDP training	Quantitative Non-randomised	18 offender managers with OPDP training and 18 without	Formulation Quality Tool	Offender managers with OPDP training produced significantly higher quality case formulations than those without OPDP training	60% - Moderate Quality
Hopton, Cree, Thompson, Jones and Jones (2018). An Evaluation of the Quality of HCR-20 Risk Formulations: A Comparison between HCR-20 Version 2 and HCR-20 Version 3	To assess the quality of risk formulations constructed within forensic inpatient services	Quantitative Non-randomised	121 formulations	CFQC-R	Risk formulations were assessed as being of poor to intermediate quality overall	80% - High Quality

Table 2 Continued

Study	Aim	Design/Method	Participants	Outcome Measure	Main Findings	MMAT Quality Rating
McMurrin and Bruford (2016). Case formulation quality checklist: a revision based upon clinicians' views	To gain feedback from clinicians on using the CFQC	Mixed Methods: Qualitative & Quantitative Descriptive	10 forensic/ clinical psychologists & psychiatrists	Interviews. Thematic Analysis.	Clinicians reported that the CFQC was useful but required some improvements	90% - High Quality
Shaw, Higgins and Quartey (2017). The impact of collaborative case formulation with high risk offenders with personality disorder	To compare the impact of collaborative vs non-collaborative case formulation on the relationship between offender managers and high-risk offenders with personality disorder	Quantitative Randomised Control Trial	39 offenders. 77 offender managers	DRI-R and a Perceived Benefits Rating Scale.	Those in the collaborative condition reported significantly higher relationship quality (OMs), a stronger working alliance (OMs), and higher levels of trust (offenders) than those in the non-collaborative condition	60% - Moderate Quality

Note. NPS = National Probation Service; PD-KASQ = Personality Disorder - Knowledge, Attitudes and Skills Questionnaire (Bolton et al., 2010); CFQC = Case Formulation Quality Checklist (McMurrin et al., 2012); Formulation Quality Tool (NOMS & NHS, 2015b); CFQC-R = Case Formulation Quality Checklist-Revised (McMurrin & Bruford, 2016); DRI-R = Dual Role Relationships Inventory – Revised (Skeem et al., 2007).

^aThe terms ‘probation officer’ and ‘offender manager’ are used interchangeably throughout the literature to describe the same role (Brown, et al., 2018). Probation staff within this role are responsible for monitoring offender compliance and assessing offender risk of harm (Ministry of Justice, 2014). The term ‘offender manager’ (OM) will be used in all instances throughout the present review to retain clarity.

2.2.4 Review Framework and Structure

The purpose of an integrative review is to examine, critique, and synthesise a body of research to develop a new perspective of a topic or to generate an agenda to guide future research within a particular field (Torraco, 2005). To achieve this, it is recommended that an explicit conceptual review structure should be adopted, whereby studies are organised and evaluated according to common themes or focuses rather than by author or chronology (American Psychological Association, 2009).

In line with this guidance, the primary focus of each of the 14 included studies was identified, and papers with similar focuses were grouped together. Five distinct groupings were identified through this process: ‘The Impact of Forensic Case Consultation Meetings on Staff’, ‘Opinions of Forensic Case Formulation’, ‘Forensic Case Formulation Training’, ‘Assessing Forensic Formulation Quality in Practice’, and ‘Collaborative Forensic Case Formulation’. The present review will therefore be organised according to this structure, with each of the five groups of studies being described, critiqued, and evaluated separately. At the end of this review, these groupings will then be collapsed to facilitate the summation of key findings, to identify gaps within the literature as a whole and to construct a logical agenda for future research. This review structure will enable the clearest understanding of the advances that have been made within the forensic case formulation field since 2011, whilst also recognising what further research must be conducted to answer outstanding questions regarding the quality, impact, and value of forensic case formulation.

2.3 Results

2.3.1 The Impact of Forensic Case Consultation Meetings on Staff

2.3.1.1 Consultation Studies: Overview

Within the OPDP, case consultation meetings are typically attended by both an offender manager (OM) and a psychologist. The aim of these meetings is for the OM to develop a greater understanding of an offender and/or to identify appropriate methods to better manage a case through discussion and collaboration with the psychologist (Knauer et al., 2017). After the meeting has taken place, the psychologist typically produces a written case formulation using the information discussed before passing it on to the OM. Case consultation meetings have therefore been described as the *process* of formulating, whereas written case formulation has been described as the *product* of this process (NOMS & NHS, 2015b).

Four of the studies included within the present review focus on the impact of forensic case consultation meetings on staff (Knauer et al., 2017; McMullan et al., 2014; Ramsden et al., 2014; Whitton et al., 2016). Two of these studies collected quantitative data (Knauer et al., 2017; Ramsden et al., 2014), one used mixed methods (Whitton et al., 2016), and the last focused only on qualitative outcomes (McMullan et al., 2014). Participants within the mixed methods study (Whitton et al., 2016) consisted of a range of staff members working within a forensic inpatient service. The other three studies recruited National Probation Service (NPS) staff.

2.3.1.2 Consultation Studies: Procedures

Three of these studies (Knauer et al., 2017; Ramsden et al., 2014; Whitton et al., 2016) incorporated the use of bespoke questionnaires developed by the authors to understand

the impact of case consultation meetings on staff. These questionnaires were designed to measure change in areas such as staff understanding of offenders (Knauer et al., 2017; Whitton et al., 2016), staff competence in working with offenders (Ramsden et al., 2014), and staff attitudes towards offenders (Whitton et al., 2016). Ramsden et al. additionally used the Personality Disorder - Knowledge, Attitudes and Skills Questionnaire (PD-KASQ; Bolton et al., 2010) to measure change within these domains. Staff within the Ramsden et al. study were assessed before and after a 3-month period of ongoing consultation meetings, whereas staff within the studies conducted by Knauer et al. and Whitton et al. were assessed before and after a single consultation meeting had taken place. Knauer et al. additionally assessed some staff for a third time, after they had received a written case formulation which summarised the content of the consultation meeting they had attended.

The study by McMullan et al. used qualitative methods to evaluate the impact of an ongoing case consultation process on staff. Staff who were still engaged with this consultation process were invited to attend focus groups in which they were encouraged to discuss their experiences and opinions of consultation. Alternatively, staff managers of teams who had withdrawn from the ongoing consultation process were invited to take part in a one-to-one interview with a researcher to discuss their reasons for withdrawal.

2.3.1.3 Consultation Studies: Outcomes

The results of all four of these studies indicated that forensic case consultation meetings had at least some positive impact on staff. Firstly, all four studies reported increases in staff understanding of offenders. In addition, there were significant increases in knowledge of offenders, confidence in working with offenders, motivation to work with offenders, and satisfaction with management plans (Knauer et al., 2017); significant increases in capability and positive emotions towards offenders (Ramsden et al., 2014); increases in psychological

understanding, team consistency, empathy, and insight (Whitton et al., 2016); and qualitative increases in awareness of personality disorder and how to work with personality disordered offenders (McMullan et al., 2014). However, some of the findings of these studies were not as positive. Firstly, within the study conducted by McMullan et al., a quarter of participants described the consultation process as “frustrating” (p. 189), which may have represented the views of staff who had withdrawn from the ongoing consultation process before the study began. Secondly, Knauer et al. found no additional improvement in scores in any area after assessing some staff for a third time after they had received a written case formulation summarising the content of the consultation meeting they had attended.

2.3.1.4 Consultation Studies: Evaluation of Strengths

The main strength of these four studies is that they have a very high level of ecological validity, as the case consultation meetings that took place within them were part of routine practice and the staff that attended these meetings were recruited through naturalistic methods. Specifically, the case consultation meetings that took place within the studies by Knauer et al. and Ramsden et al. had been requested by staff during routine supervision, and Whitton et al. recruited staff as they arrived for a routine consultation meeting. Staff within the McMullan et al. study were invited to give their opinions on consultations that had already taken place before the study began. This suggests that these consultation meetings were not influenced by the researchers in any way, increasing the validity of the findings. In addition, staff from a wide range of services participated in this research, such as those working within approved premises, probation, prison, and secure ward settings. Staff who had previously withdrawn from the consultation process were also included. This indicates that the findings of this small body of research are highly representative of staff working within forensic services. These factors would suggest that the findings obtained within these

studies do showcase the true impact of forensic consultation meetings on staff, which appears to be a mostly positive one.

2.3.1.5 Consultation Studies: Evaluation of Limitations

The main limitation of these studies is that many of the outcome measures used within them were constructed specifically for the purposes of the research and have therefore not been validated. Knauer et al. explain that the bespoke “consultation questionnaire” used within their study was developed on the basis of OPDP strategy objectives, but do acknowledge that it has not been validated. Ramsden et al. explain that their bespoke “supervision questionnaire” was developed “with academic partners at the Institute of Mental Health” (p. 126), but do not mention its validity. Whitton et al. do not mention either the validity of their unnamed bespoke questionnaire, nor how it was created. The findings of these studies must therefore be viewed with caution, as it has not been confirmed whether any of these bespoke questionnaires are able to accurately measure change in the areas that they were intending to. Therefore, until these measures have been validated, the impact of forensic case consultation meetings on staff cannot be confirmed.

In addition, there are also validity issues relating to the use of the Personality Disorder - Knowledge, Attitudes and Skills Questionnaire (PD-KASQ) within the study conducted by Ramsden et al. The version of the PD-KASQ used within this study contained 18-items and was developed by Bolton et al. (2010) to measure psychological understanding of personality disorder, capability in relation to working with personality disordered individuals, and emotions towards these individuals. However, it has previously been found that five of the items included on this questionnaire do not load onto any of these three factors, suggesting that the PD-KASQ has low construct validity (Shaw et al., 2011). The predictive validity of the PD-KASQ has also not been investigated, meaning that increased scores within the

domains of understanding, capability and emotion may not necessarily reflect genuine improvements within these areas. The findings obtained from the use of the PD-KASQ within the study conducted by Ramsden et al. should therefore be viewed tentatively, as it cannot be confirmed whether case consultation meetings within this study genuinely improved staff abilities within these areas.

Another limitation of both the bespoke questionnaires and the PD-KASQ is that they are all self-report measures, which may have detrimentally influenced the results found by these studies. For example, if staff felt uncomfortable with disclosing that their understanding, confidence, and attitudes towards working with personality disordered offenders had not improved, this may have influenced how they responded to the questionnaire.

A second major limitation of this research on forensic case consultation meetings concerns the attrition of participants. For instance, although all participants within the Knauer et al. study took part in both the pre- and post-consultation assessments, this was because they completed both of these assessments within the same session. However, when some of the participants were assessed for a third time after they had received a written formulation summarising the content of this consultation meeting, only 25% of the participants invited to do so provided data (15 of 60). This would suggest that although Knauer et al. concluded that the addition of a written case formulation provided no further benefit to staff, this finding may have been obtained due to the significantly depleted sample size. This possibility is supported by the study conducted by McMullan et al., in which staff indicated that it would be helpful for the content of the consultations they had attended to be “written up into a report” (p. 191). This represents a significant conflict in this small body of literature and suggests that more research should be conducted to assess the impact of written case formulation on staff before a firm conclusion can be made about its value in this regard.

The problem of attrition also substantially affected the study conducted by Ramsden et al., as 74% of participants withdrew from this study between the pre- and post-consultation assessments. This resulted in a post-consultation sample of 12 participants who completed the PD-KASQ, and six participants who completed the bespoke supervision questionnaire which was developed by the researchers part way through the study. These attrition issues resulted in changes to the standard analysis process, with independent t-tests being inappropriately performed in place of paired t-tests for the pre- and post-consultation PD-KASQ scores. Furthermore, statistical analyses could not be performed at all on the pre and post “supervision questionnaire” scores due to the significantly reduced sample size. This would suggest that the findings reported by Ramsden et al. should be viewed with caution. Consequently, the study by Ramsden et al. was found to be of low quality when rated using the MMAT during the quality appraisal stage of the present review. This indicates that although Ramsden et al. concluded that case consultation meetings positively impacted staff in terms of improving their understanding, confidence, and attitudes towards working with personality disordered offenders, this conclusion should again be regarded cautiously.

A third limitation of two of the case consultation studies reviewed here concerns the period between pre- and post-consultation assessment. As previously described, participants within the studies conducted by Knauer et al. and Whitton et al. were assessed before and *immediately* after a single consultation meeting had taken place. This would suggest that although these studies found positive increases in several areas such as staff understanding, knowledge, confidence, and empathy towards offenders, it is not possible to conclude whether these improvements would have continued into practice. For example, although a staff member may have reported feeling more confident about working with an offender when asked immediately after the meeting, this confidence may have dissipated over time or may not have been felt when actually working with that offender. This is a significant

methodological issue within these studies, as it cannot be concluded whether case consultation had any lasting positive impact on staff.

Finally, within the study conducted by Whitton et al., several participants indicated that they had never met the offender discussed within the case consultation meeting or had only known them for one day. It would therefore seem inevitable that scores on questionnaire items such as “I have a good psychological understanding of the patient’s problems” would increase significantly after the consultation. This may have positively skewed the results of this study, which should be considered before reaching a conclusion on the effectiveness of consultation meetings within forensic services of this nature.

2.3.1.6 Consultation Studies: Discussion

Although a number of limitations of this literature have been highlighted and discussed above, the consistently positive results identified suggest that (at least initially, and as self-reported by staff), forensic case consultation meetings do have a positive effect on staff in a number of different ways. This would indicate that despite the methodological flaws identified, the findings of this literature should not be overlooked. In terms of further research however, there are a few areas of this consultation literature that require further clarification and expansion.

As previously described, two of the consultation studies briefly also discussed the impact of written case formulation on staff. Knauer et al. found that written case formulation did not provide any additional benefit to staff, whereas participants within the study conducted by McMullan et al. indicated that they would find written case formulation helpful. This conflict within the literature is essential to explore further, as written case formulations are constructed for every offender within the OPDP. If it were therefore found that case consultation rather than written case formulation is what improves staff

understanding, competence, and attitudes in relation to working with personality disordered offenders, this would suggest that the additional time, cost and energy spent writing case formulations within the OPDP might be better spent elsewhere within the service.

In addition, the results of this research do tentatively indicate that case consultation is able to meet one of the core aims of the OPDP service, which is to develop the confidence, competence and skills of staff working with personality disordered offenders. However, this body of research is limited in that it has only investigated the impact of consultation on *staff* outcomes, and only by using unvalidated measures of change. Future research should therefore aim to investigate whether these self-reported improvements lead to positive changes in practice. This research would firstly provide a measure of validation both for the questionnaires used within these studies and for the results found with the use of these questionnaires. Secondly, significant positive changes in staff practice may improve the likelihood of positive offender outcomes such as reduced reoffending and improved well-being, which are the other two major aims of the OPDP. Future research in this domain is therefore essential to develop our understanding of the full impact and value of forensic case consultation meetings and forensic case formulation within the OPDP.

2.3.2 Opinions of Forensic Case Formulation

2.3.2.1 Opinion Studies: Overview

Historically, case formulation has most typically been carried out within clinical settings by psychologists and psychiatrists (Division of Clinical Psychology, 2011). However, as the OPDP is a forensic service and is jointly commissioned by both the NOMS and the NHS, offender managers (OMs) within this service are expected to play a prominent role in the construction of written case formulations alongside psychologists (NOMS & NHS, 2015a).

On the basis of this, three of the studies included within the present review broadly aimed to explore the views of OMs (Brown & Völlm, 2013), offenders and carers (Brown & Völlm, 2016), and formulation experts (Völlm, 2014) on the implementation of forensic case formulation into the OPDP and on the role of OMs in constructing these formulations. Two of the studies were qualitative in nature (Brown & Völlm, 2013; Brown & Völlm, 2016), whereas the last used a mixed methods design (Völlm, 2014).

2.3.2.2 Opinion Studies: Procedures

Both of the studies by Brown and Völlm (2013; 2016) involved carrying out a number of focus groups to gather opinions. Within the 2013 study, OMs working within the OPDP were asked about their understanding and knowledge of case formulation and how they felt about their new responsibility of writing case formulations. Within the 2016 study, personality disordered offenders and carers of personality disordered offenders were asked whether they found case formulation to be helpful and how they felt about the new role of OMs in writing case formulations within the OPDP.

Völlm (2014) instead aimed to gain expert consensus on a number of different characteristics of case formulation for personality disordered offenders. This included who it should be carried out by, what it should include, and how its quality should be measured. Experts within this study were identified as being those with a background in psychology/psychiatry who had recently worked with personality disordered offenders or had recently published literature on the topic of personality disorder or offending. The study used an electronic Delphi survey method with two rounds. In the first round, experts rated how much they agreed or disagreed with certain statements about how forensic case formulation should be carried out. In the second round, each expert was shown how the other experts had

responded to these statements and were then given the opportunity to revise or explain their own answers.

2.3.2.3 Opinion Studies: Outcomes

Participants within all three studies raised concerns about whether OMs would be able to successfully write forensic case formulations within the OPDP. Many participants did not believe that OMs had been provided with enough in-depth training to be able to construct formulations of the same quality as psychologists (Brown & Völlm, 2013; Brown & Völlm, 2016; Völlm, 2014). More positively however, some OMs and experts did believe that case formulation could be successfully carried out by OMs if they were provided with more training (Brown & Völlm, 2013; Völlm, 2014). However, offenders and carers of offenders were more sceptical of this solution, believing that any OM training would be necessarily short and therefore ineffective at developing the case formulation skills of OMs to an adequate level (Brown & Völlm, 2016).

Offenders were additionally sceptical of OMs writing case formulations due to what they perceived as a conflict of roles. They described perceiving OMs as usually overseeing “punishment” but now also overseeing “care” (p. 221). Offenders also explained that due to this conflict, they may not be easily able to build trust with OMs, which could potentially lead to less accurate formulations. More encouragingly however, offenders also reported that it may be a positive change for OMs to understand more about mental health and personality disorder. Carers felt the same way, stating that with increased understanding of these important issues, OMs may be able to identify personality disorder earlier and therefore get help for these offenders more quickly.

Finally, experts within the study conducted by Völlm (2014) *did* reach consensus on many characteristics of case formulation for personality disordered offenders. These included

that forensic case formulation should be offered to all personality disordered offenders regardless of case complexity, and that any evidenced-based theoretical model could be used to develop forensic case formulations. However, consensus was not achieved in several key areas. Most strikingly, only 40% of experts agreed that offenders who had received a case formulation would achieve a more positive case outcome. Experts who did not agree with this statement referenced the lack of evidence regarding whether forensic case formulation can improve offender outcomes or not. Finally, it was found that experts could not reach consensus on how to best assess the quality of forensic case formulation. A number of participants provided qualitative comments in response to this question to emphasise that a valid and reliable measure of case formulation quality is not yet available.

2.3.2.4 Opinion Studies: Evaluation of Strengths

All three studies investigating opinions of forensic case formulation were found to be of at least 'moderate quality' on the MMAT during the quality appraisal stage of the present review. This suggest that the methods used within these studies were adequate and that the findings of these studies can be considered equally.

A strength of this small body of research is that it includes some of the only studies within the present review that recruited a wider variety of participants other than staff working within forensic services. This has allowed for a greater understanding of how forensic case formulation is viewed by all those impacted by its implementation into the OPDP. For example, experts and OMs themselves were found to believe that case formulation could be carried out by OMs if they were thoroughly trained (Brown & Völlm, 2013; Völlm, 2014), whereas offenders and carers did not believe this to be the case (Brown & Völlm, 2016). If these studies had focused only on the opinions of staff, the results would have suggested that all concerns could be simply rectified with more training. Additionally,

by giving offenders a voice within this research, this may have enabled them to perceive case formulation as something that is done ‘with’ them, rather than done ‘about’ them. This may have allowed them to feel more informed about and involved with these planned changes, potentially leading to less opposition and resistance to these changes when they occurred in practice.

A final strength of these three studies is that their results have been influential in developing further knowledge about the effectiveness of formulations written by OMs working within the OPDP. As many participants believed that OMs *would* be able to successfully construct formulations if they were provided with further training (Brown & Völlm, 2013; Völlm, 2014), a training package was later developed and delivered to OMs in a study conducted by Brown et al. (2018). The findings of this training study by Brown et al. (2018) indicated that OM case formulation skills *could* be significantly improved through training. This resolves many of the concerns of participants within the opinion studies reviewed here and is also promising for the future of case formulation within the OPDP. The training study by Brown et al. (2018) is included within the present review and will be discussed in depth within a later section (p. 38).

2.3.2.5 Opinion Studies: Evaluation of Limitations

Although these three studies investigating opinions of forensic case formulation were representative in terms of the wide range of participants recruited, the sample sizes themselves were relatively small. Within the paper by Brown and Völlm (2016), only two offender focus groups were carried out; one attended by two offenders within a prison setting, and one attended by three offenders within a high-secure inpatient setting. Guidance on carrying out focus groups with the aim of performing thematic analysis on the resulting data however suggests that at least *three* focus groups are needed to detect leading themes (Guest,

et al., 2017). Understandably, high-risk offenders are a difficult population to recruit into research due to various ethical and access related reasons. This was clearly illustrated within the Brown and Völlm (2016) paper, when the third offender focus group which would have included offenders supervised within the community did not go ahead as planned. This was due to rejection of access to these offenders in response to a recent incident that had occurred within the service. This suggests that although the study aimed to be inclusive and representative, it fell short of this aim for reasons beyond the control of the researchers.

Additionally, the study by Völlm (2014) suffered from a small sample size due to 46% of the experts choosing not to take part in the second round of the Delphi survey. This suggests that consensus in each area may have been unintentionally altered, as the opinions of those who completed only one round may have significantly differed in some way to those who completed both. One possibility is that participants who did not agree with the opinions of the other experts did not finish the second round, meaning that they were not included within the analysis. This could therefore have consequences for the generalisability of these findings.

A final limitation to note is that all three of the studies were conducted by the same two authors (Brown & Völlm, 2013; Brown & Völlm, 2016; Völlm, 2014). This might suggest that the findings of this body of research are not as widely representative as they first appear to be, due to the limited pool of participants that the researchers may have had access to. It may therefore be helpful in future for researchers with access to a wider range of forensic services to contribute to this literature to ensure that its findings are generalisable.

2.3.2.6 Opinion Studies: Discussion

The findings of this small body of research are mixed overall. Some encouraging findings were observed, including that OMs were willing to accept case formulation

responsibilities once they had been trained (Brown & Völlm, 2013), that offenders and carers felt positive about OMs being able to develop a better understanding of mental health issues (Brown & Völlm, 2016), and that formulation experts were able to achieve consensus on many characteristics of forensic case formulation (Völlm, 2014). However, all three studies highlighted a number of worrying issues, including the fact that OMs, offenders, and experts all felt at least somewhat sceptical about the new role of OMs in writing forensic case formulations within the OPDP.

However, these studies were conducted when the implementation of case formulation into the OPDP was in its infancy. It is therefore a possibility that many of the opinions expressed within these studies were magnified by uncertainty or apprehension relating to this change. These OMs, offenders and experts may now feel very differently about these issues and so it would be of value for further research to gauge this change. If negative issues remain, this future research could then be used as a springboard for the resolution of these problems and for the enhancement of case formulation practices within the OPDP.

Finally, Völlm (2014) found that experts could not reach consensus on whether offenders who receive a forensic case formulation are likely to have better case outcomes. This is unfortunately expected, as no research has yet been conducted to investigate whether forensic case formulation can contribute to offender outcomes. Experts could also not agree on how to best assess the quality of forensic case formulations. This again is anticipated, as no fully validated measure of formulation quality currently exists. Until the possible impact of forensic case formulation on offender outcomes is investigated, it is likely to remain difficult to determine what a high-quality formulation objectively consists of, and therefore also difficult to construct a valid measure of formulation quality. Future research within these key areas is therefore vital.

2.3.3 Forensic Case Formulation Training

2.3.3.1 *Training Studies: Overview*

Four of the studies within the present review aimed to understand whether the case formulation skills of OMs working within the OPDP can be improved through training (Brown et al., 2018; Mapplebeck et al., 2017; Minoudis et al., 2013; Radcliffe et al., 2018). One of these studies used a qualitative design (Mapplebeck et al., 2017), whereas the other three studies were quantitative.

2.3.3.2 *Training Studies: Procedures*

Within three of these studies (Brown et al., 2018; Mapplebeck et al., 2017; Minoudis et al., 2013), the formulation skills of OMs were assessed both before and after they had completed a period of training. Radcliffe et al. (2018) instead compared the formulations of OMs who had received OPDP specific training with the formulations of those who had not.

The core content of the training provided to OMs within these four studies was similar, primarily focusing on constructing case formulations and understanding personality disorder. In addition, the training involved constructing pathway plans (Minoudis et al., 2013), understanding offending behaviour (Brown et al., 2018), and learning how to manage common issues that may arise when working with personality disordered offenders (Mapplebeck et al., 2017). However, the length of training provided to OMs within these studies greatly varied; OMs within the Minoudis et al. study were provided with only eight hours of training, whereas OMs in the other three studies were provided with five days (Brown et al., 2018) or six days (Mapplebeck et al., 2017; Radcliffe et al., 2018) of training. The length of time that OMs were able to develop these new skills before their formulations were assessed varied even more; OMs within the studies by Brown et al. and Mapplebeck et al. were assessed immediately after training had finished, whereas OMs within the study by

Minoudis et al. were assessed after a 6-month period during which they had been required to carry out several formulations in routine practice. Trained OMs within the study by Radcliffe et al. had the longest period of time to develop their skills before assessment, with training having been delivered as part of their OPDP induction which had occurred between six months and three years prior to the beginning of the study.

Within three of the studies (Brown et al., 2018; Minoudis et al., 2013; Radcliffe et al., 2018), OMs were assessed on written case formulations that they had been asked to produce using the content of two fictitious case vignettes. Within the studies by Brown et al. and Minoudis et al., formulations were assessed both before and after training using the Case Formulation Quality Checklist (CFQC; McMurrin et al., 2012). This is a ten-item checklist that designed to measure case formulation quality⁴. Brown et al. additionally asked OMs to complete the Personality Disorder - Knowledge, Attitudes and Skills Questionnaire (PD-KASQ; Bolton et al., 2010) before and after training. Formulations within the Radcliffe et al. study were instead assessed using the Formulation Quality Checklist (NOMS & NHS, 2015b; now known as the Case and Risk Formulation Self-Auditing Tool). This tool consists of six overarching quality standards and is intended to provide a measure of the quality of forensic case formulations.

OMs within the qualitative study by Mapplebeck et al. did not complete written case formulations, but were instead asked to answer two questions about the content of a fictitious case vignette before and after their training; these questions asked each OM to describe which aspects of the case they would like to know more about if it were a real situation, and what

⁴ The 10 items contained within the CFQC were based on a set of evaluative criteria devised by Hart, Sturmey, Logan and Hart (2011, i.e., the 'key paper' discussed at the beginning of this review) to judge the adequacy of formulations conducted within forensic mental health settings.

they would focus on if this offender was on their caseload. Their responses were then analysed using thematic analysis.

2.3.3.3 Training Studies: Outcomes

The findings of these four training studies were mixed. Brown et al., Radcliffe et al., and Mapplebeck et al. all concluded that training had at least some positive impact on OM formulation skills. Specifically, Radcliffe et al. found that the formulations of trained OMs were of significantly better quality than those of untrained OMs, as measured using the Formulation Quality Checklist; Mapplebeck et al. observed small positive differences in the qualitative responses of OMs after training; and Brown et al. found that the quality of OM formulations significantly improved after training as measured by the CFQC. Brown et al. additionally found that scores in the ‘understanding’ and ‘capability’ domains of the PD-KASQ significantly improved post-training, although scores in the ‘emotions’ domain remained unchanged.

Minoudis et al. however found very different results, concluding that OMs showed little improvement in their formulation skills even after they had completed eight hours of training and a 6-month period of completing formulations in routine practice.

2.3.3.4 Training Studies: Evaluation of Strengths

Again, all four of these training studies were found to be of at least moderate quality when rated using the MMAT. This suggests that the methods used within these studies were generally robust and therefore that the findings of these studies are likely to be valid.

A strength of all four of these studies concerns the quality of the training that was delivered to OMs. For example, the training featured in the studies by Radcliffe et al. and Mapplebeck et al. was routine training which was typically delivered to OMs as part of their OPDP induction. This indicates that these two studies are high in ecological validity, as the

results are likely to showcase the real impact of this training on OMs within this service. Instead, the training packages within the studies conducted by Brown et al. and Minoudis et al. were developed specifically for the purposes of the research. Brown et al. developed their training on the basis of their previous research findings (Brown & Völlm, 2013; Völlm, 2014) and also on the content of an educational programme co-commissioned by the Department of Health and the Ministry of Justice (Baldwin, 2011). The training within the study conducted by Minoudis et al. was developed by two chartered psychologists, who consulted a range of academic sources and used their experiences of working with personality disordered offenders to aid them in doing so. This suggests that these bespoke training packages were of high quality and therefore likely to be comparable to the OPDP induction training received by OMs within the studies conducted by Radcliffe et al. and Mapplebeck et al. Differences in the findings of the four studies are therefore unlikely to be attributable to issues involving the quality of the training delivered to OMs.

In terms of writing the formulations, OMs within all three of the quantitative studies (Brown et al., 2018; Minoudis et al., 2013; Radcliffe et al., 2018) were asked to base their formulations on the content of two fictitious case vignettes. The vignettes used within all three of these studies were identical, with Brown et al. and Radcliffe et al. utilising the same vignettes that had been developed and used in the study by Minoudis et al. The rationale provided by Radcliffe et al. for using the same vignettes was to control for any confounding factors that could have resulted from the use of different vignettes. This would suggest that any differences in the findings of these studies can be attributed to manipulations in the length of training or skill development period, rather than due to unintentional differences in vignette quality, quantity, or complexity. Using the same vignettes across studies can therefore be viewed as a strength in this regard.

Finally, Minoudis et al. assessed the psychometric properties of the CFQC before

analysing their data and found it to have moderate to good inter-rater reliability, excellent test-re-test reliability, and excellent internal validity. This suggests that the CFQC was an appropriate quality tool to assess outcomes in these respects.

2.3.3.5 Training Studies: Evaluation of Limitations

Although it could be viewed as a strength in one regard as discussed above, the use of the same two vignettes within three of the training studies could also be viewed as a limitation. The reason for this is that Minoudis et al. (who initially created the vignettes) describe them as “necessarily brief” (p. 260) and acknowledge that the quantity and quality of information within them may not be on a par with that typically available when formulating a genuine case within the OPDP. For example, OMs would generally have a wealth of information to draw upon in practice, such as police and prison records, probation files, psychiatric reports, interviews with the offender, and details from family members. The case vignettes included in these training studies however consisted of only 1,000 words of summarised information. Consequently, the formulations resulting from the use of these vignettes may not accurately represent the formulations that could be developed by OMs within practice, suggesting that the results of these studies may not be fully generalisable.

Although the qualitative study by Mapplebeck et al. incorporated the use of a different vignette, the authors also describe this as “brief” (p. 38). Furthermore, this study used the same vignette both before and after training, suggesting that the small improvements observed post-training could be the result of practice effects caused by OMs already being familiar with its content and having had time to think about their answers before being assessed for a second time. This again suggests that the findings of this study may not fully translate into practice, where there is often a large amount of complex information to contend with and make sense of quickly.

A second limitation of these studies concerns the measures that were used to assess the formulation skills of OMs. As previously discussed, two of the studies (Minoudis et al., 2013; Brown et al., 2018) used the CFQC to assess formulation quality, whilst one of the studies (Radcliffe et al., 2018) used the Formulation Quality Tool. Although Minoudis et al. evaluated some of the psychometric properties of the CFQC before using it, the predictive validity of both of these tools has not yet been confirmed. This means that it is currently unknown whether formulations which score highly on these tools *are* objectively of any higher quality or will be any more likely to contribute to positive offender outcomes than formulations which score poorly. This suggests that even though Brown et al. and Radcliffe et al. concluded that scores significantly increased on the CFQC and Formulation Quality Tool respectively after training, this does not necessarily signify that the post-training formulations were of objectively higher quality or would have been more likely to contribute to positive offender outcomes (if they had been developed for real cases).

Similarly, the PD-KASQ used within the study by Brown et al. is also problematic in this regard, as its predictive validity is also unconfirmed. This suggests that although OMs within this study felt they had a better understanding of personality disordered individuals and felt more capable of working with these individuals after training, this does not necessarily reflect objective changes in these domains. Finally, within the qualitative study conducted by Mapplebeck et al., the researchers found it difficult to objectively measure change in OM responses before and after training due to the qualitative method used. This would again suggest that even though the authors of this study concluded that small improvements could be observed in OM responses post training, this does not necessarily reflect a meaningful or significant change.

A third limitation of this case formulation training literature concerns the inconsistent findings and conclusions reported within it. Focusing on the three quantitative studies, Brown

et al. and Radcliffe et al. both found improvements in OM case formulation quality after training, whereas Minoudis et al. found no significant improvement. This may reflect the brevity of the formal training received by OMs within the Minoudis et al. study prior to the 6-month period of developing formulations in practice. Supporting this theory, Brown et al. suggest that the positive improvements observed within their own study may have been found partially because OMs were given *no* time to develop their formulation skills after training before being assessed; they speculate that within the 6-month development period given to OMs within the Minoudis et al. study after their initial training period, those OMs could have been influenced by other factors or found it difficult to retain the skills they had learned until the time of assessment. Radcliffe et al. however suggest the opposite, hypothesising that the positive differences observed within their own study were due to the fact that their OMs had an even longer amount of time to develop their formulation skills after training (≥ 6 months) before being assessed.

These explanations contradict each other, meaning that it is unclear whether a longer development period or a shorter development period after training may explain these differences in findings. An alternative explanation may instead be offered by looking at the pre-training quality scores of OM formulations within the different studies. For example, at baseline on the CFQC, OM formulations within the study conducted by Brown et al. scored an average of 24.8 out of a possible 40, whereas OM formulations within the Minoudis et al. study scored only 14.2 at baseline on the same quality measure. This suggests that OMs within the Minoudis et al. study had significantly poorer formulation skills at baseline than OMs within the Brown et al. study and may therefore not have had enough training and/or time in practice to significantly develop these skills.

Finally, although many of these training studies concluded that OM case formulation skills did improve after training, the extent of some of these improvements may be open to

interpretation. For example, Brown et al. found that OM case formulations showed significant improvements on seven items of the CFQC after training, including ‘narrative’, ‘internal coherence’, ‘factual foundation’ and ‘explanatory breadth’. This indicates that after training, OMs produced formulations which were more coherent, made fewer contradictory statements, included more relevant information, and included information of higher quality and quantity. However, no significant change was found for the CFQC items ‘external consistence’ or ‘action oriented’⁵. This suggests that post-training, OM formulations were still not consistent with psychological theory and lacked information about treatment selection and planning. This indicates that although the training was successful in terms of developing OM knowledge of the more descriptive aspects of formulation, it may not have been as successful in terms of equipping them with the knowledge needed to implement the more in-depth or psychological aspects of formulation. Similarly, although Mapplebeck et al. concluded that OMs focused more heavily on the psychological aspects of a case after formulation training, this change was not observed in relation to offending behaviour and risk. This suggests that although OMs did develop some psychological knowledge within training, this did not extend to an understanding of how psychological factors may be linked with offending behaviour. This is important to consider, as one of the main purposes of OPDP formulation is to create a psychological explanation of the causes, precipitants and maintaining influences of an individual’s offending behaviour. If OMs are therefore unable to develop these skills even after training, this would suggest that they may be unsuited to writing formulations within this service.

⁵ In addition, no significant change was found for the item ‘Simplicity’ (“The formulation is free from unnecessary details”). However, this was because scores were very high for this item both before and after training.

2.3.3.6 Training Studies: Discussion

As previously described, the majority of these studies (Brown et al., 2018; Mapplebeck et al., 2017; Radcliffe et al., 2018) found that training *was* able to improve the case formulation skills of OMs. These findings are valuable to the OPDP, as there have been concerns in the past about whether OMs would be able to successfully carry out case formulation without the benefit of an in-depth psychological education (Brown & Völlm, 2013; Brown & Völlm, 2016, Völlm, 2014). However, these findings should be regarded cautiously due to the methodological drawbacks discussed above.

In terms of future research, the tools used to measure these improvements in OM formulation skills need to be properly validated before firm conclusions can be made about the impact of OM training. Secondly, it may be valuable for future research to allow OMs to construct formulations with the use of genuine case information to understand if they are able to develop the specialised skills needed to formulate complex cases. Essential skills such as developing a psychological explanation of a case are needed for the successful construction of formulations within the OPDP, meaning it should be a priority to confirm whether OMs can develop these high-level skills before they are permitted to carry out formulations within this service as standard.

Finally, further research should be conducted to fully understand why the findings of the training research discussed here were contradictory. For instance, it may be useful for formulations written by OMs with differing levels of psychological knowledge or formulation skills at baseline to be compared after training to understand whether this is what caused the differences in outcomes. It may be the case that OPDP staff need to be provided with tailored training based on their existing level of skill or knowledge for this training to be maximally effective in improving the quality of their formulations.

2.3.4 Assessing Forensic Formulation Quality in Practice

2.3.4.1 Quality Studies: Overview

Two of the studies included within the present review were primarily focused on assessing and understanding the quality of formulations developed by psychologists in practice (McMurrin & Bruford, 2016; Hopton et al., 2018).

The study by McMurrin and Bruford (2016) used a mixed methods design to gather clinician feedback on the utility of the Case Formulation Quality Tool (CFQC; McMurrin et al., 2012). The 10 items included within the CFQC were based on a set of evaluative criteria devised by Hart et al. (2011) to judge the adequacy of formulations conducted within forensic mental health settings.

The study by Hopton et al. used a quantitative method to assess the quality of risk formulations constructed by psychologists within a number of forensic inpatient settings. Risk formulations are slightly narrower in focus than case formulations, concentrating specifically on understanding an offender's risk of harm based on a number of individual factors. Similar to case formulations however, risk formulations are used to create suitable plans of management and treatment for each offender with the aim of reducing their likelihood of reoffending. As this objective is very similar to that of forensic case formulation (and risk formulations are also completed within the OPDP), the study by Hopton et al. (2018) met the inclusion criteria for the present review.

2.3.4.2 Quality Studies: Procedures

Within the study by McMurrin and Bruford, eight forensic professionals and two clinical professionals (nine psychologists and one psychiatrist in total) who had used the CFQC in practice were interviewed either in person, by phone, or by e-mail. These professionals were asked about the positive and negative aspects of the CFQC, whether they

would change anything about it, and whether they thought it provided a good measure of case formulation quality. The findings gained from these interviews led the authors to construct a revised version of this checklist, named the Case Formulation Checklist Revised (CFQC-R).

This revised version of the checklist was then used within the study conducted by Hopton et al. to measure the quality of 121 risk formulations randomly selected from a number of forensic inpatient settings. Each formulation had been written by a psychologist with the use of either the second or third version of the Historical Clinical Risk Management-20 (HCR-20; Douglas et al., 2013; Webster et al., 1997). The latter version of this tool has a larger focus on case formulation, and so it was hypothesised that formulations constructed with this version may be significantly better in quality than those constructed with the earlier version. The word count of each formulation was also recorded to understand whether the length of these formulations was correlated with their quality scores.

2.3.4.3 Quality Studies: Outcomes

Professionals within the McMurrin and Bruford study reported that they found the CFQC to be a useful, comprehensive, and appropriate quality assessment tool. However, they also reported that the inter-rater reliability of the CFQC was questionable, that the language used within it was difficult to understand, and that the Likert scales used for scoring formulations were too restrictive. The CFQC was revised on the basis of these findings, creating the Case Formulation Quality Checklist Revised (CFQC-R). This updated version of the checklist includes the same 10 quality criteria but uses simpler language and expanded Likert scales (10-point scales instead of 4-point scales). These expanded scales now include three anchor points, with 0 meaning that a formulation “does not meet this criterion at all”, 5 meaning that a formulation “meets this criterion somewhat” and 10 meaning that a formulation “meets this criterion exceptionally well”.

With the use of the CFQC-R, Hopton et al. found that risk formulations completed by psychologists within forensic inpatient settings were of poor to intermediate quality. Formulations constructed using the third version of the HCR-20 were found to be of significantly higher quality than those constructed using the second version. Generally, however, risk formulations were found to be overly descriptive and to have little focus on constructing hypotheses, making predictions about future behaviour, or developing treatment plans. In terms of word count, the researchers found that formulations consisting of 400-800 words were of the highest quality, with formulations significantly longer or shorter than this scoring more poorly on the CFQC-R. Finally, Hopton et al., assessed the inter-rater reliability of the CFQC-R and found this to be good.

2.3.4.4 Quality Studies: Evaluation of Strengths

A major strength of these two studies is that the findings obtained within them, again, have a high level of ecological validity. For instance, the professionals interviewed by McMurrin and Bruford had used the CFQC before the study began. This suggests that these professionals were able to give informed opinions on the genuine utility of this tool, and that their opinions were not influenced by the research itself. Similarly, the risk formulations assessed within the study conducted by Hopton et al. had already been completed within routine practice before the study began. These risk formulations were also randomly selected to be included in the study and were obtained from 17 different forensic inpatient settings. This suggests that the construction of these risk formulations was not influenced by the researchers, and that a highly representative sample was obtained. This would indicate that the findings of this study generally represent the true quality of risk formulations within forensic inpatient settings.

A second strength of these two studies is that they both focused on the quality of

formulations completed by psychologists, whereas most other studies included within the present review have focused on the formulation skills of OMs and how these might be improved. Research on the formulation skills of psychologists is very valuable. This is because firstly, without comparison to psychologists, it may be impossible to gauge how good the formulation skills of OMs truly are or how good they should be expected to be. Secondly, it is important to understand how good the formulations skills of psychologists are in their own regard, as very little research in the past has focused on this or explored how well these skills are kept updated and relevant over time (Kendjelic & Eells, 2007). The findings of the study by Hopton et al. support the need for further research within this area, as formulations constructed by psychologists were found to be of generally poor to intermediate quality.

2.3.4.5 Quality Studies: Evaluation of Limitations

The main limitation of these two studies is that again, the measures that were used to assess formulation quality have not been fully validated. This means that although the professionals interviewed by McMurren and Bruford reported the CFQC to be a helpful and appropriate quality tool, this still does not confirm whether formulations scoring highly on this tool are of objectively higher quality or will be any more likely to positively impact outcomes than formulations scoring poorly. In addition, the CFQC-R (which was developed from the findings of this study) suffers from additional limitations, as neither its predictive validity *nor* general utility has been confirmed. This is because the professionals interviewed by McMurren and Bruford did not use or comment upon the revised version of the checklist after it was created.

These limitations relating to the validity and utility of the CFQC-R may have had a resultant impact on the findings of Hopton et al., as the CFQC-R was used to measure the

quality of the risk formulations selected. Therefore, although it was found by Hopton et al. that these risk formulations were of generally poor to intermediate quality as measured using the CFQC-R, it may not necessarily be the case that these formulations *were* of objectively low quality, or that they would have been any less likely to have a positive impact on outcomes as compared to formulations scoring highly on this quality tool. A further limitation regarding the use of the CFQC-R within the Hopton et al. study is that because this tool was developed for use specifically with *case* formulations, it is not known how well the criteria included within it may also apply to *risk* formulations. This issue was reflected within some of the outcomes of the study, as the risk formulations were found to score very poorly on the criteria of ‘action oriented’, indicating that the formulations did not include adequate information about planning or prioritising treatment. The authors however explain that this may be because treatment plans are often recorded in a separate section of the HCR-20, which was not analysed within their study. This suggests that the CFQC-R may not be the most suitable quality tool to use when assessing risk formulations, as this could create the impression that these formulations are of poorer quality than they actually are.

A final limitation to note here relates to the methods of data collection used by McMurrin and Bruford. They report that their interviews with professionals lasted 16.5 minutes on average, whereas their face-to-face interviews with professionals lasted 32 minutes on average. This suggests that the responses of professionals who were interviewed face-to-face could have potentially skewed the results overall, as these professionals would have had the opportunity to provide much more data than those interviewed by telephone or e-mail. It is also reported that instead of recording and transcribing the interviews verbatim, notes were taken and then written up later “as close to verbatim as possible” (p. 33). It is therefore possible that the interviewer inadvertently noted down more of the points which they found personally interesting or relevant, or may not have had a perfect recall of events

when later writing up each interview. This may therefore have altered the results of the subsequent data analysis.

2.3.4.6 Quality Studies: Discussion

It is difficult to come to any firm conclusions on the assessment of formulation quality on the basis of these two studies, as both the CFQC and CFQC-R suffer from significant validity issues. Future research should therefore aim to link scores on the CFQC and CFQC-R with formulation outcomes to better understand if these tools are effective at measuring formulation quality, and therefore if the results of these studies are valid. Each item included on these tools should also be assessed individually to understand which of them contribute to quality and which of them do not. This would create a fully validated measure which could be used confidently by staff within the OPDP to construct formulations of the highest possible quality.

However, despite its validity issues, Hopton et al.'s finding that risk formulations generally scored poorly on the CFQC-R should not be overlooked. This is because the CFQC-R was constructed on the basis of a number of criteria which have been theorised by professionals and academics to be most vital for inclusion within a forensic case formulation. This suggests that even though the validity of the CFQC-R has not yet been confirmed, psychologists should be constructing formulations in line with these criteria, as they reflect our current best knowledge of what a formulation should include. Although some of the criteria included within the CFQC-R did not fully apply to the risk formulations, these formulations also scored poorly in a number of areas which *were* relevant to them, such as 'external coherence' ("The formulation is consistent with an empirically supported theory"), and 'completeness' ("The formulation ties together as much of the relevant information as possible"). It is therefore still an important finding that these formulations were rated as being

of poor to intermediate quality with the use of the CFQC-R. Considering this, future research should focus more heavily on the formulation skills of psychologists, including how these skills are developed and updated over time, and how regularly these skills are assessed.

2.3.5 Collaborative Forensic Case Formulation

2.3.5.1 Collaborative Study: Overview

Case formulations within the OPDP are typically carried out non-collaboratively, meaning that they are carried out *about* offenders rather than *with* offenders (Shaw et al., 2017). However, it has often been theorised within the clinical case formulation literature that collaborative formulation is more beneficial than non-collaborative formulation (Division of Clinical Psychology, 2011; Kuyken, 2006; Kuyken et al., 2008; Persons, 1989). This is firstly because during a collaborative process, the client can provide further information about their problems which can better enable the clinician to construct an accurate formulation (Kuyken, 2006). Secondly, during a collaborative process, the client may be able to confirm whether certain aspects of their formulation are correct, providing a measure of formulation validity (Persons, 1989). Thirdly, by being involved throughout the case formulation process, clients may be more likely to comply with resulting treatment recommendations due to having had some input into their selection (Kuyken et al., 2008). Lastly, a collaborative formulation process may help staff to develop a stronger understanding of a client and how best to help them (Needleman, 1999).

It therefore seems counterintuitive that case formulations within the OPDP are not constructed collaboratively with offenders. However, there are several potential reasons for this. Firstly, it is likely difficult for staff to create collaborative relationships with high-risk offenders during the case formulation process. This is highlighted by research conducted by Brown and Völlm (2016), who found that offenders within the OPDP felt that they would be

unable to discuss personal issues with OMs. Secondly, it may not be feasible to carry out collaborative case formulation with each offender within the OPDP due to limited resources; when calculated in May 2017, over 6,000 cases met the inclusion criteria for OPDP services within the London area alone (Shaw et al., 2017). The benefits of collaborative case formulation within forensic services should therefore be clearly understood before a major amount of resources are spent implementing it into the OPDP.

On the basis of the need for research on this topic, Shaw et al. (2017) conducted a study to explore the impact of collaborative forensic case formulation on OMs and offenders within the OPDP service. A randomised control trial design was used, whereby one group of OMs carried out formulations collaboratively with offenders and one group of OMs carried out formulations non-collaboratively as normal.

2.3.5.2 Collaborative Study: Procedures

Shaw et al. firstly examined the caseloads of OMs working within London OPDP services to identify suitable offenders. Offenders were deemed eligible for inclusion in the study if they had been classified as having a high-risk of causing serious harm (as measured by the Offender Assessment System; OASys), if they were meeting with their OM regularly, and if they were living in the community or were soon to be living in the community. In total, 77 OMs and 39 offenders took part in the study.

Next, OMs were randomly allocated into either the collaborative or the non-collaborative condition. OMs within the collaborative condition were provided with half a day of advanced formulation training which focused on how to construct collaborative level 2 formulations⁶. Each OM was then randomly allocated an offender with whom to complete the

⁶ As mentioned at the beginning of the present review, level 2 formulations are of moderate complexity and typically involve connecting information together using a small amount of psychological theory to hypothesise how and why an offenders' presenting problems may have developed.

study and was asked to construct a formulation for this offender within their routine practice. OMs within the collaborative condition constructed these formulations in collaboration with their allocated offender, whereas OMs in the non-collaborative control group completed their formulations with no input from their allocated offender. After a period of 20 weeks, OMs and offenders in both conditions were asked to complete the Dual Role Relationships Inventory - Revised (DRI-R; Skeem et al., 2007). This is a self-report questionnaire which aims to measure the quality of OM-offender relationships. It consists of three subscales: “Caring and Fairness” (e.g., “X treats me fairly”), “Trust” (e.g., “I feel safe enough to be open and honest with X”), and “Toughness” (e.g., “I feel that X is looking to punish me”). OMs were additionally asked to complete the Perceived Benefits Rating Scale (PBRs) which was developed by Shaw et al. for the purposes of their study. This scale aimed to assess OM confidence in managing the offender and OM perceptions of offender outcomes, including level of compliance and motivation to desist from offending.

2.3.5.3 Collaborative Study: Outcomes

OMs within the collaborative condition reported significantly higher scores on the “Caring and Fairness” DRI-R subscale than OMs within the non-collaborative condition. Shaw et al. explain that this broadly translates to the perception of a stronger working alliance with the offender. There were however no significant differences in OM scores on the “Trust” or “Toughness” subscales between conditions. In terms of the PBRs, OMs within the collaborative condition reported feeling significantly more confident in managing the offender than OMs within the non-collaborative condition. However, OM perceptions of offender outcomes including how motivated the offender was to desist from offending, how motivated the offender was to engage with their sentence plan, and how compliant the offender had been with their sentence plan did not significantly differ between conditions.

In terms of the offenders themselves, the only significant difference found was that offenders in the collaborative condition reported significantly higher scores on the “Trust” subscale of the DRI-R than offenders within the non-collaborative condition.

2.3.5.4 Collaborative Study: Evaluation of Strengths

The first strength of this study is that it aimed to develop an understanding of an issue within the forensic case formulation field that has not yet been investigated. As previously discussed, collaborative case formulation is not routinely carried out within the OPDP, potentially due to the complexity of OM-offender relationships and due to limited resources. The results of this research however suggest that collaborative case formulation *is* possible within the OPDP in some cases, and that it does have the potential to improve OM-offender relationships. In a study conducted by Skeem et al. (2007) in the US, it was found that the strength of probation officer-offender relationships (as measured by the DRI-R) could predict recidivism over an average follow-up period of 16 months. The finding that collaborative formulation may improve OM-offender relationships within the OPDP is therefore very encouraging, and provides an indication of how the value of case formulation within the OPDP could be further improved in future.

A second strength of this study is that certain aspects of its methodology were designed very rigorously. For example, offenders were invited to take part in the study only if they met certain inclusion criteria, indicating that they were unlikely to significantly differ on any major characteristics at baseline. Furthermore, statistical analyses were carried out to confirm that there were no associations between offence type or number of personality disorder indicators and the formulation condition that offenders were randomly allocated into. This further suggests that individual offender characteristics did not systematically affect the outcomes of the study. In addition, OMs were allocated into the two formulation conditions

randomly by tossing a coin. This suggests that the outcomes of the study are also unlikely to be due to differences in OM characteristics between conditions. Therefore, as a range of potentially confounding variables were identified and controlled for, this suggests that the findings of this study are likely to be reflective of the true impact of collaborative case formulation on OM-offender relationships within the OPDP.

2.3.5.5 Collaborative Study: Evaluation of Limitations

The first limitation of this study concerns attrition rates; 29.7% of the OMs within the collaborative condition and 20% of the OMs within the non-collaborative condition withdrew from the study before providing outcome data. It is therefore possible that this 9.7% difference in attrition rates between conditions altered the results obtained. This is supported by the disclosure made by Shaw et al. that two of the OMs within the collaborative condition withdrew their consent due to no longer wanting to take part in the study, whereas all OMs who withdrew from the non-collaborative condition did so due to reasons unrelated to the study (e.g., sickness). It was not reported why these two OMs no longer wanted to take part in the study, but it is possible that this was due to problems with their OM-offender relationships, or because of other barriers which prevented them from completing their collaborative formulations such as time restraints. As these potentially negative outcomes were not captured by the study, the results from the collaborative condition may have been positively biased.

The second limitation of the study concerns unequal group sizes. As previously described, 77 OMs and 39 offenders were recruited into the study, suggesting that some offenders were allocated to more than one OM. This issue was then further amplified, as although OMs were allocated roughly evenly into each condition, only 13 offenders took part in the collaborative condition due to consent issues, whereas 26 offenders took part in the

non-collaborative condition. This suggests that the collaborative formulations received much more OM input. Furthermore, each offender completed the DRI-R only once, suggesting that some of the offenders within the non-collaborative condition and all of the offenders within the collaborative condition based their answers on their relationships with multiple OMs.

These differences between conditions may have impacted the results obtained. For example, offenders within the collaborative condition may have perceived their formulations to be more accurate or precise due to the larger number of OMs involved in the construction of these. This may therefore be an alternative explanation for why offenders within this collaborative condition rated “Trust” in their OMs significantly higher on the DRI-R than those within the non-collaborative condition. Similarly, the OMs within the collaborative condition may have rated their confidence in managing their offender significantly higher on the PBRS than those in the non-collaborative condition, as they were working alongside other OMs who could potentially provide additional management input and support. The fact that the DRI-R was completed only once is also a potentially confounding factor, as this occurred only *after* the formulations had been constructed. It is therefore a possibility that offenders within the collaborative condition already had better relationships with these OMs before the study began, meaning that this was not an effect of the condition itself.

A third factor that may have inadvertently affected outcomes in this study is the advanced collaborative formulation training that was provided only to the OMs within the collaborative condition. Prior to the study, all OMs had previously received only half a day of basic case formulation training during their induction into the OPDP. It is therefore possible that the extra training provided to OMs in the collaborative condition enhanced these basic skills in addition to simply equipping them with separate collaborative formulation skills. This is supported by some of the training literature discussed previously, in which it was found that the formulation skills of OMs could be improved after only a small amount of

training (Brown et al., 2018; Mapplebeck et al., 2017). This therefore suggests that OMs in the collaborative condition may have had an unfair advantage.

Finally, the PBRs was developed by Shaw et al. for the purposes of the study and has therefore not been validated. It is also a measure of OM *perceptions* of offender outcomes, which may not accurately reflect the true outcomes of these offenders. Due to these reasons, the findings obtained with the use of this scale should be viewed with caution.

2.3.5.6 Collaborative Study: Discussion

Although this study is useful in its attempt to compare the benefits of collaborative versus non-collaborative forensic case formulation within the OPDP, it suffers from several methodological limitations which may have affected the validity of the results found. Future studies therefore should aim to rectify these limitations by attempting to recruit equal numbers of participants to conditions, by providing comparable case formulation training to OMs within each condition, and by measuring pre-existing OM-offender relationships in each condition. With the implementation of these changes, it may be possible to better understand whether collaborative case formulation does in fact significantly improve OM-offender relationships within the OPDP.

Secondly, it is interesting to note that scores on the PBRs did not significantly differ between conditions in terms of OM perceptions of offender outcomes. This suggests that even with the impact of extra OM input, extra training, and collaborative formulation, OMs within the collaborative condition did not perceive offender outcomes to be any more positive than those within the non-collaborative condition. This suggests that although collaborative formulation may have the potential to improve OM-offender relationships, it may not lead to improved outcomes for these offenders. However, as previously discussed, the PBRs has not been validated and is a measure of *perceived* offender outcomes. Future research within this

area should therefore aim to measure objective offender outcomes to understand if collaborative formulation is able to positively influence these. By conducting this research, the benefits of implementing collaborative formulation into the OPDP are likely to be better understood.

2.4 Overall Discussion and Synthesis

By grouping these 14 studies according to their primary focuses, the present review has identified, described, critiqued, and synthesised all relevant research published on the topic of forensic case formulation since the paper by Hart et al. (2011) highlighted what little was known within this field and emphasised the need for further research. In the next section, these groupings will be collapsed to facilitate a full summary of the findings of this research, to identify gaps remaining in our understanding, and to create an overarching agenda for vital future research within this field.

2.4.1 Summary of Review Findings

Many of the findings of the research reviewed here are promising, suggesting that forensic case consultation meetings are beneficial to probation staff in a number of ways (Knauer et al., 2017; McMullan et al., 2014; Ramsden et al., 2014; Whitton et al., 2016); that training can significantly improve the forensic case formulation skills of OMs (Brown et al., 2018; Radcliffe et al., 2018); that professionals find the Case Formulation Quality Checklist (CFQC) to be an appropriate and useful measure of formulation quality (McMurran & Bruford, 2016); and that carrying out collaborative forensic case formulation with offenders can significantly improve OM-offender relationships (Shaw et al., 2017).

However, there were also a number of negative findings identified within this literature, including that one study found no significant improvement in the formulation skills of OMs after training and an ongoing period of development in practice (Minoudis et al.,

2013); that OMs, offenders, and carers of offenders felt sceptical about the new role of OMs in carrying out case formulation within the OPDP (Brown & Völlm, 2013; Brown & Völlm, 2016; Völlm, 2014); and risk formulations constructed by psychologists within a number of forensic services were found to be of generally poor to intermediate quality as rated by the Case Formulation Quality Checklist Revised (CFQC-R; Hopton et al., 2018).

These varied findings suggest that although some relevant and interesting research has been completed in the forensic case formulation field since 2011, much more research is still required to fully understand the true value and impact of forensic case formulation within both the OPDP and wider forensic services.

2.4.2 Homogeneity of the Literature

Although this review has highlighted that a reasonable amount of research has been conducted on the topic of forensic case formulation since the paper by Hart et al. (2011) was published, much of this research is very similar in a number of ways. For example, many of the studies share the same focus and use similar methodologies, such as those investigating the effects of forensic case consultation on staff and those investigating the impact of OM training. The participants recruited into many of these studies were also very similar, mostly consisting of probation staff instead of other populations of interest such as offenders or psychologists. In terms of outcome measures, many of the studies incorporated the use of the Case Formulation Quality Checklist (CFQC), Case Formulation Quality Checklist-Revised (CFQC-R) or Personality Disorder - Knowledge, Attitudes and Skills Questionnaire (PD-KASQ), which have not yet been fully validated. In addition, 11 of the 14 studies focused on forensic formulation within the OPDP specifically, rather than investigating the impact of formulation within forensic services more broadly. Due to this, there was a distinct lack of

international research identified⁷, suggesting that the UK is currently the centre for forensic case formulation research.

One potential explanation for this homogeneity is that many of these studies were conducted by a small pool of the same researchers. For example, 11 of the 14 papers included within this review involved the input of one of just four authors: McMurrin, Ramsden, Shaw or Völlm (Brown et al., 2018; Brown & Völlm, 2013; Brown & Völlm, 2016; Mapplebeck et al., 2017; McMullan et al., 2014; McMurrin & Bruford, 2016; Minoudis et al., 2013; Radcliffe et al., 2018; Ramsden et al., 2014; Shaw et al., 2017; Völlm, 2014). In sum, these observations highlight just how small the forensic case formulation field currently is, emphasising the need for future research which can build upon and further expand what has been achieved by these researchers so far. This future research should aim to deviate from the common patterns identified here to resolve some of the gaps in the literature discussed within the next section.

2.4.3 Gaps in the Literature

The findings of the present review highlight that although a variety of studies have been conducted within the forensic case formulation field since 2011, several significant gaps remain. These gaps hinder our understanding of the quality, utility, and impact of forensic case formulation and therefore make it difficult to come to a firm conclusion about its overall value within the OPDP.

As stated at the beginning of the present review, the main aims of the OPDP are to reduce reoffending rates, to improve the psychological health of offenders, and to improve staff understanding and competence in relation to working with personality disordered

⁷ All 14 studies were conducted within the UK. The only international input came from the study by Völlm (2014) in which 26% of the experts surveyed were based outside of the UK (one expert each in USA, Canada, Australia, Sweden, Switzerland, Austria, Spain, Hungary, and Israel).

offenders (NOMS & NHS, 2015a). Encouragingly, some of the studies included within the present review (Knauer et al., 2017; McMullan et al., 2014; Ramsden et al., 2014; Whitton et al., 2016) suggest that forensic case consultation meetings can significantly contribute to one of these main aims; to improve staff understanding and competence in relation to working with personality disordered offenders. However, none of the research within the present review has concentrated on understanding if forensic case consultation or forensic case formulation is also able to contribute to the two other main aims of the pathway (to reduce reoffending rates and to improve offender health). This therefore represents a major gap in the forensic case formulation literature, as the relationship between forensic case formulation and offender outcomes is still unknown.

A second major gap in the literature concerns the issue of assessing the quality of forensic case formulations. As no research has yet investigated the potential impact of case formulation on offender outcomes to best inform our understanding of ‘what works’, no validated measure of forensic case formulation quality currently exists. Although McMurrin and Bruford (2016) did attempt to assess the utility of the Case Formulation Quality Checklist (CFQC) within their study, they did not assess its predictive validity. This becomes a wider issue when it is considered that many of the studies within the present review incorporated the use of the CFQC and similarly unvalidated quality tools (CFQC used by Brown et al., 2018 and Minoudis et al., 2013; CFQC-R used by Hopton et al., 2018; Formulation Quality Tool used by Radcliffe et al., 2018), meaning that the validity of the results observed within these studies may also have been impacted. This represents a large flaw within much of the literature, suggesting that many of the results obtained from these studies must be viewed with caution.

A third gap in the literature concerns the paucity of research examining the forensic case formulation skills of psychologists, as most studies within the present review focused

only on the skills of OMs and how these might be improved. The one study in which the forensic formulation skills of psychologists *were* evaluated found that the risk formulations they produced were typically only of poor to intermediate quality as rated using the CFQC-R (Hopton et al., 2018). This gap in the literature certainly needs to be addressed. Although psychologists are taught how to carry out case formulation during their initial training, it is not clear how much additional case formulation training or assessment they continue to receive after becoming qualified, or how effective this training may be at keeping their formulation skills fully updated and relevant, especially within the forensic field.

2.4.4 Recommendations for Further Research

The previous section highlighted that there are several areas within the forensic case formulation field that require a significant amount of further investigation.

Firstly, research should aim to assess whether forensic case formulation is able to contribute to the achievement of the other two aims of the pathway, which are to reduce reoffending and to improve offender health. As forensic case formulation is used within the OPDP to create a tailored pathway of treatment and management interventions for each offender, it is theorised that forensic case formulation could have the ability to create positive ‘intermediate outcomes’ in these cases, including improved engagement, better staff-offender relationships, and advanced progression through services (NOMS & NHS, 2015b). Positive changes in these intermediate outcomes may in turn increase the likelihood of achieving main pathway aims such as reductions in reoffending (NOMS & NHS, 2015b). Encouragingly, one study within the present review did attempt to understand the impact of forensic case formulation on one intermediate offender outcome (staff-offender relationships, Shaw et al., 2017). However, this study suffered from some notable methodological limitations and did not investigate whether positive change in this intermediate outcome could lead to positive

changes in ‘main’ outcomes such as reductions in reoffending. Future research should therefore aim to better understand the complex link between forensic case formulation, intermediate outcomes, and main pathway outcomes to understand the true value and impact of forensic case formulation within the OPDP.

Secondly, research should aim to empirically understand the necessary components of a ‘high-quality’ forensic case formulation. This might involve examining the formulations of offenders who have obtained positive outcomes to assess if these formulations share any of the same features (and/or if these features differ in any major way to the features contained within the formulations of offenders with negative outcomes). For example, the psychological model used, the number or type of recommendations made, or the structure of the formulation could all be factors that contribute to or influence quality. Research in this area should also aim to assess the predictive validity of the existing quality measures repeatedly used throughout this literature, including the CFQC, CFQC-R, Formulation Quality Tool, and PD-KASQ. This type of research could improve understanding of whether these tools are able to accurately measure formulation quality, and therefore, whether the findings obtained throughout the literature with the use of these quality tools are valid. Until this research is completed, our understanding of matters such as the impact of training on the formulation skills of OMs and the quality of formulations constructed by psychologists is likely to remain limited. This in turn will continue to significantly restrict understanding of the value of forensic case formulation overall.

Thirdly, there are several ways in which the methods used within existing OM formulation training studies could be improved upon in future. This includes allowing OMs to develop formulations with the use of genuine case information rather than fictitious case vignettes to ensure that these OMs can successfully develop the skills required for formulating complex cases in practice. Any future research within this area should also

consider the baseline formulation skills of staff before any training is delivered to better understand any results obtained. Finally, a control group should be incorporated into future studies to ensure that any improvements in case formulation skills can be attributed to the training provided and not due to unintentional practice effects (i.e., arising from using familiar vignettes before and after training). This type of research would create an improved understanding of whether OMs should be permitted to continue to construct formulations within the OPDP, or whether this is a task better left to psychologists.

Leading on from this suggestion, future research should also aim to develop a clearer understanding of the forensic case formulation skills of psychologists. For instance, how the formulation skills of psychologists are developed and updated over time, and whether differences in the quality, quantity or regularity of ongoing training have any significant impact on the quality or outcomes of the forensic case formulations these psychologists can produce. Research within this area so far has been limited, though results reported by Hopton et al. tentatively suggest that further investigation within this area is important.

Fourthly, research should aim to understand whether the views of OMs and offenders relating to the use of forensic case formulation within the OPDP have changed. To recap, some of the research evaluated within the present review highlighted that both OMs and offenders were sceptical about the new role of OMs in completing case formulation within the OPDP, and that offenders had some resistance to this change (Brown & Völlm, 2013; Brown and Völlm, 2016). However, this research was conducted when formulation within the OPDP was still in its infancy, and so it would be valuable to update understanding within this area. If it is again found that OMs and offenders have concerns about how forensic case formulation is constructed within the OPDP, efforts could be made to resolve these issues. It may also be helpful to gain an updated understanding of the views of forensic formulation experts (such as those who were surveyed within the study conducted by Völlm, 2014), as

knowledge and opinions regarding the use of forensic case formulation may have changed over time. Forensic case formulation is now widely used throughout the OPDP, and so these updated insights could be valuable in ensuring that formulations within this service are being constructed in line with current consensus on ‘what works’.

Finally, future research should aim to understand the impact and value of forensic case formulation within a broader range of services other than the OPDP. This is to ensure that the findings of such research are applicable and relevant to forensic case formulation in general and do not simply relate only to those formulations constructed for high-risk offenders with traits of a personality disorder.

Chapter 3: Investigating Quality in Forensic Case Formulation

3.1 Study 1a Introduction

McMurran and Bruford (2016) argue that “the quality of case formulations may impact on outcomes, hence one essential aspect in outcome evaluation is quality assessment” (p. 31). However, as discussed within Chapter 2, research to date has not yet objectively determined the necessary components of a ‘high-quality’ forensic case formulation. Minoudis et al. (2013) theorise that “a first step in evaluating formulation is identification of its key elements” (p. 254). The present study was therefore based upon the notion that by examining statistical relationships between individual forensic case formulation components and offender outcomes, it may be possible to develop a more objective understanding of ‘what works’ (i.e., which formulation components have the most positive impact). This may in turn heighten our understanding of what a ‘high-quality’ forensic case formulation objectively consists of.

In spite of the lack of empirical understanding of quality within the forensic case formulation field, a number of tools have previously been designed with the aim of assessing forensic case formulation quality in practice (i.e., Case Formulation Quality Checklist-Revised, CFQC-R, McMurran & Bruford, 2016; Case and Risk Formulation Self-Auditing Tool, Audit Tool, NOMS & NHS, 2015b). Items within these tools reflect our current understanding of what forensic case formulation quality is likely to consist of, but the predictive and concurrent validity of these tools is currently unknown. If these tools are valid, formulations scoring highly on these tools would likely be expected to be associated with more positive offender outcomes than those scoring poorly (as quality is believed to be related to outcomes, McMurran & Bruford, 2016). In addition, if these tools are measuring the same construct (i.e., formulation quality), it would also be expected that these tools would

have concurrent validity (i.e., that a formulation scoring highly on one tool would also score highly on the other). By scoring forensic case formulations on these quality tools and then linking these scores with offender outcomes, the present study will therefore also aim to explore the validity and utility of these existing tools.

To meet these aims, a sample of forensic case formulations written by psychologists for high-risk offenders within the OPDP were obtained. These formulations were firstly scored using both the CFQC-R and Audit Tool before their core features and characteristics were identified and recorded using a coding framework developed by the researcher. The outcomes of the offenders discussed within these formulations were then obtained from HMPPS records. Finally, a series of statistical analyses were performed to determine whether scores on the CFQC-R, scores on the Audit Tool, or the presence/absence of any specific formulation features could significantly contribute to the prediction of these offender outcomes.

It is recognised that additional (and potentially impactful) outcomes and events occur between ‘formulation’ and ‘offender outcome’ (as further explored within Study 2, p. 153 and Study 3, p. 208), and that other properties of a formulation (i.e., its validity) are also likely to impact these events and outcomes. However, the intent of the current study was to develop an initial understanding of which forensic case formulation components may be of particular (statistical) importance. Findings of this analysis were then to be further explored and corroborated within a subsequent quasi-experimental study (Study 2, p. 153). Significant associations identified through these analyses could have the potential to facilitate the construction of a more evidence-based formulation quality tool, which might in turn contribute to the achievement of more positive outcomes.

3.2 Study 1a - Method

3.2.1 Study Design

Due to the lack of prior empirical research investigating forensic case formulation quality, the current study did not aim to test any specific hypotheses or manipulate any particular variables. Instead, the study was exploratory in nature, aiming to develop a preliminary understanding of which specific components of forensic case formulation may be associated with offender outcomes. Due to this, the study utilised a cross-sectional design. Cross-sectional studies are typically used to identify the “prevailing characteristics in a given population to make inferences about possible relationships or to gather preliminary data to support further research and experimentation” (Cherry, 2019). As cross-sectional designs are not able to determine causality, it was anticipated that any relationships identified between CFQC-R scores/Audit Tool Scores/Formulation Features and offender outcomes would be further clarified and confirmed within a subsequent quasi-experimental study (Study 2, p. 153). The present study was therefore intended to be the ‘first step’ in a journey to developing an empirical understanding of forensic case formulation quality.

3.2.2 Data Access and Screening

To facilitate the identification of any significant associations between CFQC-R scores/Audit Tool Scores/Formulation Features and offender outcomes, a sample of completed OPDP formulations was sought. To gain access to this data, ethical approval was first obtained from both HMPPS National Research Committee (ref. 2018-067) and Swansea University Research Ethics Committee (ref. 0239). Following these approvals, the NPS Wales Performance and Quality Team provided the researcher with a dataset of all offenders

who were resident within approved premises (AP)⁸ in Wales between 2016-2018, and who also had a level 2 OPDP formulation on file. This period was selected to ensure that any findings resulting from the study would be reflective of and relevant to current practice within the OPDP. Next, these cases were assessed against the inclusion criteria outlined within Table 3. These stringent inclusion criteria (i.e., offenders with a level 2 formulation on file, offenders with a ‘standard’ length of AP residency) were designed to control for confounding factors that may have otherwise influenced the results of the analysis (these are also described within Table 3).

After removing 223 cases that did not meet the inclusion criteria⁹, 50 cases remained within the dataset. The level 2 formulations associated with these cases were then extracted from the NPS database for further analysis. During the extraction process, it was found that two of the required formulations had not been uploaded to the NPS database and could not be located by other means. These two cases were removed from the dataset, resulting in a final sample size of 48 formulations. All 48 formulations were written by psychologists working within the OPDP.

Regarding the offender outcomes of interest, AP outcomes were selected as those most suitable to analyse. This is because they are easily definable and measurable, and, due to enhanced staff monitoring, are likely to accurately represent the behaviour of each offender once released from custody (as compared with offenders released directly into the community, where risk-taking behaviour is less likely to be detected). Table 3 contains a full description of and rationale for choosing this outcome measure. AP outcomes were obtained

⁸ The reasons for selecting AP residents are described below.

⁹ The bulk of these cases were removed as the offender’s level 2 formulation was not written within the 3-month period prior to their AP entry (165 cases; 81 were written before this period and 84 were written after this period). In addition, 29 offenders were in AP on temporary release from prison (ROTL), and a further 15 offenders did not have a suitable length of AP residency for the study (see Table 3 for an explanation of these inclusion criteria). Finally, 14 offenders were removed from the dataset as they were still in AP at the time of the study and so their outcomes were not yet known.

from the NPS Wales Quality and Performance Team and were recorded as a binary categorical variable; ‘Planned Move On’ or ‘Breach’ from AP¹⁰. Breaches were found to have occurred for a number of different reasons, including reoffending, escalation of risk, breaking a license or bail condition, absconding from AP or breaking AP rules. However, following a discussion between the researchers, the original binary categorical variable was retained to best facilitate analysis (i.e., to ensure sufficient membership within each category of this outcome variable).

¹⁰ It is recognised that some cases, a decision to ‘breach’ may be associated with a ‘high-quality’ formulation (for instance, if the formulation is predictive of instances in which harmful behaviour is likely to occur). However, the focus of the current study was to identify which (if any) formulation components are associated with *positive* outcomes, so that the likelihood of achieving these outcomes might be improved in future.

Table 3*Inclusion Criteria for Formulations Analysed Within Study 1a*

Inclusion Criteria	Rationale
1. Offenders with a level 2 forensic case formulation on file	As described within Chapter 1 (p. 2), three different ‘levels’ of formulation are completed within the OPDP, which represent different levels of complexity. Level 1 formulations are the most basic of the three levels, and so may lack sufficient detail to meet the needs of the present study (as it could be difficult to discover associations between formulation components and offender outcomes if only a small number of components can be identified). In contrast, level 3 formulations are the most complex of the three levels and are therefore those most rarely written within the OPDP. Due to the scarcity of these complex formulations, it was decided that sourcing an adequate sample size of level 3 formulations could be challenging. Based on this rationale, level 2 formulations were those selected for use within the present study, as they are typically rich in information and are written frequently. A sample containing more than one level of formulation was avoided, as this could have resulted in additional issues (e.g., level 1 formulations being automatically judged as being of poorer quality compared to level 3 formulations simply due to having fewer components).
2. Offenders resident within approved premises (AP)	Approved premises (AP) provide offenders with a structured re-entry into the community after being released from prison (HM Inspectorate of Probation, 2017). Due to enhanced staff monitoring within AP, any problem behaviour displayed by residents is more likely to be detected and recorded accurately in comparison to offenders who are released directly into the community. In addition, AP outcomes can be easily defined and measured (i.e., either the offender successfully ‘moved on’ from AP or the offender ‘breached’ within AP), reducing ambiguity.

Table 3 Continued

Inclusion Criteria	Rationale
3. Offenders with an AP residency of 'standard' length	Offenders in AP due to Release on Temporary Licence ¹¹ were excluded from the dataset due to their exceptional circumstances. Offenders who were recorded as successfully moving on from AP were included in the analysis <i>only</i> if they had been resident within AP for ≥ 1 month. This decision was made in order to make the 'Move On' group more comparable to the 'Breach' group, as those successfully moving on quickly may have been placed in AP for alternative reasons (i.e., due to having no alternative accommodation available rather than for risk-related reasons). Offenders resident in AP for ≥ 4 months were also excluded from the analysis, as this length of stay may again have been indicative of their AP residency being due to exceptional circumstances (i.e., being very vulnerable), rather than for risk-related reasons.
4. Offenders with a level 2 forensic case formulation completed ≤ 3 months prior to the start of their AP residency	It was theorised that formulations are most likely to be viewed and utilised when first completed. Therefore, formulations completed shortly before AP residency were thought to be those most likely (if any) to have an impact on AP outcomes.

¹¹ Release on Temporary License (ROTL) refers to instances when an offender is temporarily released from custody for a specific reason or event (e.g., to attend a funeral). AP residents on ROTL were deemed not to be comparable to the rest of the dataset and so were removed.

3.2.3 Data Collection and Coding

To accurately identify and record the core features of each formulation, a coding framework was developed by the researcher with the use of a range of academic sources and expert advice. This framework allowed the researcher to objectively document (amongst other features) the style, length, structure, and content of each formulation. A full overview of this framework and the rationale for each of the features included within it can be viewed in Table 4.

The data coding process began by thoroughly reading each formulation twice to ensure familiarity with its content. Each formulation was then systematically coded with the use of the developed framework. This coding process was completed by a single researcher to ensure consistency, with each formulation taking around one hour to code. Throughout this process, the collected data was imputed into an IBM SPSS Statistics spreadsheet.

Each formulation was then rated using the Case Formulation Quality Checklist-Revised (CFQC-R; McMurrin & Bruford; Table 5). This quality tool consists of 10 items, each scored on a 10-point Likert scale. As previously described, the items included within the CFQC-R were based on a set of evaluative criteria devised by Hart et al. (2011) to judge the adequacy of formulations conducted within forensic mental health settings. The 48 extracted formulations were scored against only eight of these 10 items, as it was considered that their “Factual Foundation” and “Completeness” could not be accurately judged by the researcher due to the retrospective nature of the data (see Table 5 for further information). Therefore, the maximum CFQC-R score a formulation could achieve within the present study was 80.

The formulations were next assessed using the Case and Risk Formulation Self-Auditing Tool (Audit Tool, NOMS & NHS, 2015b, Table 6), which was designed by leading experts in the forensic case formulation field. This tool consists of six overarching quality standards, with the majority of these standards containing additional sub-items. The Audit

Tool was designed to assess the quality of all three levels of OPDP formulations, meaning that some of the sub-items included within the tool pertain only to specific levels. The 48 extracted formulations were assessed only against the standards and sub-items relevant to level 2 formulations (see Table 6 for details). Each of these items are scored on a scale of 0-4, meaning that the maximum Audit Tool score a formulation could achieve within the present study was 36.

Again, to ensure consistency, both the CFQC-R and Audit Tool ratings were completed by a single researcher. Once a score had been allocated, the reasons for this allocation were systematically recorded within a Microsoft Word document. This was to ensure that scoring remained consistent across formulations and that the full scale of each quality assessment was utilised. Utilising the full range of a rating scale is important to ensure sufficient variability between the scores allocated; this often allows for finer precision of analysis and improved accuracy of results (Johnson & Christensen, 2017).

To finish the coding process, a number of potentially influential offender characteristics were identified and recorded for each case (e.g., age, sentence length; see Table 7 for details). This information was obtained through a mixture of methods; extracted from the formulations themselves, provided by the NPS Wales Quality and Performance Team, and/or obtained from the NPS database. These offender characteristics were controlled for within the subsequent statistical analyses to facilitate examination of the relationship between CFQC-R scores/Audit Tool Scores/Formulation Features and AP outcomes without the influence of these potentially confounding factors.

Table 4*Coding Framework Developed for the Purposes of Study 1a*

Formulation Feature	Description	Rationale	Coding Used
- Style/Format	The style that the formulation was presented in. Some formulations were purely narrative in style, whereas others included figures or diagrams to better illustrate the psychological mechanisms described within the text.	Formulation is often referred to within the literature as a ‘narrative account’ of a case (e.g., Hart et al., 2011, p. 120; McMurrin & Bruford, 2016, p. 32; Minoudis et al., 2013, p. 254). Formulations that are not purely narrative in style may therefore be associated with different AP outcomes than those that are.	<u>Categorical</u> Completely Narrative: 1 Partially Narrative: 2
- Model/Theory	The psychological model or theory that was used within the formulation to explain the offender’s behaviour. A vast range of psychological models and theories were identified within the extracted formulations.	Formulation experts surveyed within the study by Völlm (2014) agreed that any evidence-based theoretical model is suitable for use within a formulation. It was deemed important for the current study to explore this further to understand whether there <i>are</i> any particular models or theories that are associated with particular outcomes.	<u>Categorical</u> Coded according to the psychological model or theory used (e.g., Cognitive Analytic Therapy, Schema Theory, Social Learning Theory) ¹²

¹² Only a selection of examples are provided here due to the extensive number of categories identified.

Table 4 Continued

Formulation Feature	Description	Rationale	Coding Used
- Level of Formulation	All formulations extracted from the NPS database were recorded by their authors as being level 2 formulations. To understand how accurately these formulations fitted level 2 specifications, each one was judged against published guidance on OPDP formulation levels (Logan, 2017). Each formulation was then assigned a ‘researcher-assessed’ level based on this guidance.	Formulation levels were introduced into the OPDP to allow practitioners to respond flexibly to the needs of offender managers (OMs) and/or offenders themselves (NOMS & NHS, 2015b). However, research has not yet investigated whether different levels of formulation result in different outcomes. Research is also yet to examine how outcomes are impacted when a formulation is inadvertently written at a different level than that originally intended.	<u>Categorical</u> Level 0 ¹³ : 0 Level 1: 1 Level 2: 2 Level 3: 3

¹³ If a formulation contained only descriptive information and no psychological theory/inference, it was coded by the researcher as ‘level 0’.

Table 4 Continued

Formulation Feature	Description	Rationale	Coding Used
- Formulation Type	<p>Three different types of formulation are completed within the OPDP. <i>Case</i> formulations have the broadest focus, aiming to understand the person in their entirety by linking information together about their background, personality, behaviour, and risk. <i>Problem</i> formulations are narrower in focus, aiming to understand the offender’s main problems or symptoms. <i>Risk</i> formulations have a specific focus on understanding the offender’s risk of harm to themselves and others and how to best manage and reduce this risk (Knauer et al., 2017; Logan, 2017; NOMS & NHS, 2015b).</p>	<p>The Case and Risk Self Auditing Tool (NOMS & NHS, 2015b) asserts that a formulation must clearly state what it is seeking to explain (case, problem, or risk). This suggests that it is seen as an important factor by formulation experts. However, it is not yet known whether different types of formulation are associated with different outcomes. For example, is a comprehensive case formulation needed for each offender or is an exploration of his or her main problems sufficient?</p>	<p><u>Categorical</u> Unclassified¹⁴: 0 Case Formulation: 1 Problem Formulation: 2 Risk Formulation: 3</p>

¹⁴ If a formulation contained only descriptive information and no psychological theory/inference, this was coded by the researcher as ‘Unclassified’.

Table 4 Continued

Formulation Feature	Description	Rationale	Coding Used
- 5Ps Structure	Although many of the extracted formulations did not follow any specific structure, some were written using a 5Ps framework. This is a framework commonly used to structure the information within a formulation. The 5Ps represent ‘presenting problems’, ‘predisposing factors’, ‘precipitating factors’ (triggers to the offending), ‘perpetuating factors’ (maintaining influences on the offending) and ‘protective factors’.	It was theorised that formulations structured around the 5Ps may have different outcomes to those not structured in this way. For example, offender managers (OMs) may understand more of the information within a formulation if it is clearly set out in a recognisable style. This improved understanding of the formulation may lead to more effective case management, which may then result in better outcomes.	<u>Categorical</u> No 5Ps Structure: 0 5Ps Structure: 1
- Missing Information	Refers to whether it was indicated within the formulation that there may be further information relevant to the case which unavailable to the author at the time of writing.	It was theorised that formulations mentioning potentially missing data may be less accurate than those making no mention of this. In turn, formulation accuracy may be associated with AP outcome.	<u>Categorical</u> No Missing Information Indicated: 0 Missing Information Indicated: 1

Table 4 Continued

Formulation Feature	Description	Rationale	Coding Used
- Psychologist	Each formulation was authored by a psychologist working within the OPDP. A total of 12 different psychologists authored the 48 formulations extracted.	It may be possible for the outcomes of a formulation to vary based on whom it was authored by. For example, it has previously been suggested that clinicians are susceptible to a range of common decision-making biases (Kuyken et al., 2004; Kuyken, 2006), which may influence the information they decide to include or exclude when formulating a case. In addition, some psychologists may favour a particular theory or framework that they apply to all cases, whereas other clinicians may change the theory/framework they use based on each case. Coding for psychologist allowed the researcher to better control for this variance during statistical analysis.	<u>Categorical</u> Psychologist coded by initials

Table 4 Continued

Formulation Feature	Description	Rationale	Coding Used
- Formulation Length - Presenting Problems Length - Predisposing Length - Precipitating Length - Perpetuating Length - Protective Length - Inferred Mechanism Length - Recommendations Length - Other Length	The formulations ranged widely in length, from one to six pages. The information within each of the formulations could be divided into eight comparable groups. Some of these groups were based on the categories included within the 5Ps framework ¹⁵ .	Hopton et al. (2018) found that formulations of 400-800 words were of the highest quality as rated by the Case Formulation Quality Checklist-Revised (CFQC-R). Based on this finding, the current study recorded the total length of each formulation as well as the amount of each type of information within them to understand if any of these variables were associated with particular AP outcomes.	<u>Scale</u> Word Count of Formulation & Each Formulation Section

¹⁵ Although many of the extracted formulations were not explicitly structured around the 5Ps framework, the information contained within each of these formulations could be easily grouped into these areas. This was done to better facilitate comparison and analysis of the formulations.

Table 4 Continued

Formulation Feature	Description	Rationale	Coding Used
<ul style="list-style-type: none"> - Formulation Bullet - Presenting Problems Bullet - Predisposing Bullet - Precipitating Bullet - Perpetuating Bullet - Protective Bullet - Inferred Mechanism Bullet - Recommendations Bullet 	<p>Some of the formulations were presented in bullet point form, whereas others were presented in continuous prose. Some had only particular sections presented in bullet point form.</p>	<p>Information presented in bullet point form may be more easily understood by OMs, potentially resulting in improved offender management. Alternatively, presenting information in bullet point form could mean that some detailed case information is lost, potentially being detrimental to OM understanding. Either of these instances could have the potential to influence outcomes.</p>	<p><u>Categorical</u></p> <p><i>For Each Section:</i></p> <p>Not Presented in Bullet Form: 0</p> <p>Presented in Bullet Form: 1</p>
<ul style="list-style-type: none"> - Number of OMs 	<p>The number of OMs assigned to an offender.</p>	<p>Offenders with more OMs allocated to their case may have different AP outcomes than those with fewer OMs. For instance, more of the recommendations made within a formulation may be carried out if there are more OMs available to implement them.</p>	<p><u>Scale</u></p> <p>Number of OMs Assigned to Case</p>

Table 4 Continued

Formulation Feature	Description	Rationale	Coding Used
- Formulation-AP Interval	The length of time between the completion of the formulation and the offender's entry into AP.	The length of time between the completion of a formulation and the offender's entry into AP may have an influence on the offender's AP outcome. For example, recommendations made within a formulation written one <i>month</i> prior to an offender entering AP may have been implemented more fully than the recommendations made within a formulation written 1 <i>week</i> prior to an offender entering AP.	<u>Scale</u> Number of Days Between Formulation and AP Entry
- AP Consideration	Refers to whether the formulation included any specific content relating to the offender's entry into AP.	If a formulation makes specific considerations regarding the offender's AP entry or residency, this may lead to the offender having a smoother transition into AP or being more fully supported throughout this process. This in turn could influence the offender's AP outcome.	<u>Categorical</u> No Consideration Made: 0 Consideration Made: 1

Table 4 Continued

Formulation Feature	Description	Rationale	Coding Used
- Formulation Title	Refers to whether the title of the formulation specifically references it being a ‘level 2 formulation’.	Formulations with a clear title denoting the purpose and nature of the document may be more likely to be read and implemented by staff than formulations with more ambiguous titles. Ensuring that staff read and implement the information within a formulation is likely to be the first step in improving the chances of the offender obtaining a positive AP outcome.	<u>Categorical</u> Not Clearly Titled: 0 Clearly Titled: 1
- Monitoring Form	Refers to whether a ‘monitoring form’ was completed alongside the formulation. The purpose of a monitoring form within the OPDP is to consolidate and confirm the main points and recommendations made within a formulation. These forms are typically completed by the OM of each case under the supervision of the psychologist who wrote the formulation.	Monitoring forms are intended to improve OM understanding of the formulation and its recommendations. Formulations with an associated monitoring form on file may be better understood by OMs, leading to improved offender management which may impact AP outcomes.	<u>Categorical</u> No Monitoring Form Completed: 0 Monitoring Form Completed: 1

Table 4 Continued

Formulation Feature	Description	Rationale	Coding
<u>Recommendations</u> - Firm Treatment Interventions - Potential Treatment Interventions - Firm Management Strategies - Potential Management Strategies - Firm Further Information Requests - Potential Further Information Requests	Each of the extracted formulations contained a number of different recommendations for the OM to act upon with the aim of reducing the offender’s risk of reoffending. These recommendations were often made on the basis of the hypotheses developed within the formulation. They fell into three distinct categories: treatment interventions, management strategies and requests for further information. Some of these were ‘firm’ (i.e., recommendations to be carried out), whereas others were ‘potential’ (i.e., recommendations to be considered).	One of the main purposes of forensic case formulation is to select appropriate interventions to address each offender’s presenting problems and to reduce their risk of reoffending (Knauer et al., 2017). However, it is not known whether (or how) variations in the number, type and/or ‘firmness’ of these recommendations have differential impacts on offender outcomes.	<u>Scale</u> Number of each type of recommendation made

Table 4 Continued

Formulation Feature	Description	Rationale	Coding
- Recommendations Title	Refers to the nature of the title given to the recommendations section of each formulation.	Formulations with a recommendations section titled ‘Actions’ or ‘Tasks’ may be associated with different AP outcomes than those with a recommendations section titled ‘Recommendations’ or ‘Suggestions’. This is because the title of the recommendations section may have an impact on how urgent the OM perceives the recommendations to be overall.	<u>Categorical</u> “Non-Proactive” Title: 0 “Proactive” Title: 1
- Recommendations Placement	Refers to the placement of the recommendations section within each formulation.	The placement of the recommendations section within a formulation may also influence how urgent the OM perceives these recommendations to be. For example, if recommendations are placed at the beginning of a formulation, this may indicate that they are a major priority. Different locations of recommendation sections may therefore be associated with particular AP outcomes.	<u>Categorical</u> Beginning: 1 Middle: 2 End: 3

Table 4 Continued

Formulation Feature	Description	Rationale	Coding
- Recommendations Complexity	Refers to the complexity of the recommendations made within the formulation, i.e., if they are very complex/contain a lot of psychological terminology, or concise/written in accessible language.	The complexity of the recommendations made within the formulation could have an influence on the ability of the OM to utilise them. For example, complex recommendations might be unclear to the OM, leading to these recommendations being completed differently than intended, or not carried out at all. This in turn may have the ability to influence AP outcomes.	<u>Categorical</u> Low Complexity: 1 Moderate Complexity: 2 High Complexity: 3
- Reflective Content	Refers to whether each formulation included a note from the author commenting on the accuracy of the information contained within it, or on the precision of the hypotheses made.	Formulations featuring comments about the accuracy of the hypotheses made could influence the way OMs apply the information provided. Formulations that contain this type of reflective content may therefore be associated with different AP outcomes than those which do not.	Categorical No Reflective Content: 0 Reflective Content: 1

Table 4 Continued

Formulation Feature	Description	Rationale	Coding
- One Document	Refers to whether the formulation is contained within one document or whether it directs the reader to other sources to obtain additional relevant information.	Due to easier access of information, ‘self-contained’ formulations may be better understood by OMs than formulations which direct them to other sources. Improved OM understanding of a case may in turn be associated with more positive AP outcomes.	<u>Categorical</u> Not a Self-Contained Document: 0 Self-Contained Document 1
- Ease of Access	This variable is applicable only to formulations that are <i>not</i> self-contained documents. It refers to whether these formulations directed the reader to a <i>specific</i> source of additional information (i.e., “refer to recommendations made within formulation dated 12 Feb 2018”), or <i>general</i> sources of additional information (i.e., “further information on OASys).	Formulations directing readers to <i>specific</i> sources of additional information may be associated with different AP outcomes than those directing readers to more general sources. This is because OMs may have difficulty obtaining the correct information when the location provided is ambiguous.	<u>Categorical</u> General Location: 0 Specific Location: 1

Note. OASys = Offender Assessment System

Table 5*Case Formulation Quality Checklist-Revised (CFQC-R) Items¹⁷*

CFQC-R Item	Description
Narrative	The formulation is presented in everyday language that tells a coherent, ordered, and meaningful story
External Coherence	The formulation is explicitly consistent with an empirically supported theory
Factual Foundation ¹⁶	The formulation is based on relevant information about the case that is adequate in terms of quantity and quality
Internal Coherence	The formulation rests on propositions or makes assumptions that are compatible or non-contradictory
Completeness ¹⁶	The formulation has a plot that ties together as much of the relevant information as possible
Events Over Time	The formulation ties together information about the past, present, and future of the case
Simplicity	The formulation is free from unnecessary details
Predictive	The formulation goes beyond description, statement of facts, or classification to make detailed and testable predictions. The key predictions are those about which strategies will be most effective in treating and managing harmful behaviour
Action Oriented	The formulation prioritises and plans treatments
Overall Quality	The formulation is comprehensive, logical, coherent, focused, and informative

¹⁶ Item was not used within the present study as formulations could not be accurately scored without full case information.

¹⁷ McMurrin and Bruford (2016)

Table 6*Case and Risk Formulation Self-Auditing Tool¹⁸ (Audit Tool): Level 2 Items*

Audit Tool Item	Description
Audit Tool Standard 1	The formulation states clearly <i>what</i> it is seeking to explain (i.e., case, problem/risk and which one specifically) and <i>why</i> (i.e., what is the purpose of this formulation)
Audit Tool Standard 2	The formulation includes an indication of the range, depth, and quality of the evidence on which it is based
Audit Tool Standard 3	The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour
Audit Tool Standard 4a	The formulation <i>organises</i> information relevant to the purpose of the formulation (such as information about attitudes and beliefs, relationships with others, attachments, other situational, social, and cultural factors)
Audit Tool Standard 4b	The formulation provides a balanced view about areas of vulnerability <i>and</i> areas of strength, including protective factors
Audit Tool Standard 4c	The formulation <i>connects</i> pieces of information about the person or the problem/risk in order to create an explanation for the case or the risk/problem under scrutiny
Audit Tool Standard 5	The formulation provides a rational basis for <i>decisions</i> about interventions and management and how they should be <i>prioritised</i>
Audit Tool Standard 6a	The formulation is expressed in language <i>accessible and appropriate</i> to all those for whom it is intended, and brief enough to be read easily
Audit Tool Standard 6b	The formulation is meaningful, provides a coherent explanation of the case or problem/risk, and adds to what is already known about the service user

¹⁸ NOMS & NHS (2015b).

Table 7*Offender Characteristics Controlled for Within Study 1a*

Characteristic	Description	Rationale	Coding Used
Sentence Length	The amount of time each offender spent in custody for the index offence stated within the formulation.	The length of an offender's sentence may affect other factors such as the number of treatments they were able to complete in prison, or the number of pro-social contacts available to them once released. Longer sentences could therefore be associated with different AP outcomes than shorter sentences.	<u>Scale</u> Number of Months Spent in Custody
Age on AP Entry	The offender's age at the time they entered AP.	Although contested in more recent years, age has previously been reported within the literature to be a strong predictor of crime (e.g., the 'age crime curve', Farrington, 1986; Tremblay & Nagin, 2005). It was therefore considered important for the current study to control for the possible impact of offender age on AP outcome.	<u>Scale</u> Age in Years
Mental Illness Frequency	The number of mental illnesses/issues described within the offender's formulation.	The number of current mental illnesses/issues an offender is experiencing may have an impact on their likelihood of obtaining a positive AP outcome.	<u>Scale</u> Number of Mental Illnesses/Issues Described

Table 7 Continued

Characteristic	Description	Rationale	Coding Used
Personality Disorder Frequency	The number of personality disorders/traits described within the offender's formulation.	The number of personality disorders/traits experienced by the offender may have an impact on their likelihood of obtaining a positive AP outcome.	<u>Scale</u> Number of Personality Disorders/Traits Described
Prior AP Breach	Whether each offender has a previous AP breach on record or not.	Prior AP breach may predict current AP breach.	<u>Categorical</u> No Prior AP Breach: 0 Prior AP Breach: 1
Number of Treatments Completed	The number of treatment interventions each offender has previously completed.	Offenders who have successfully engaged in treatment interventions may be those most likely to engage with formulation recommendations. This in turn may increase their likelihood of successfully moving on from AP.	<u>Scale</u> Number of Previous Treatment Interventions Completed
Level of Engagement	Refers to whether the offender is described within their formulation as being disengaged or not.	Offenders described as having disengaged from their OM or sentence plan may be more likely to have negative AP outcomes.	<u>Categorical</u> Described as Fully Engaged: 0 Described as Partially Engaged: 1 Described as Disengaged: 2

Table 7 Continued

Characteristic	Description	Rationale	Coding Used
Index Offence	The type of index offence committed by each offender.	Offenders who committed certain index offences (i.e., very violent offences) may be more likely to have negative AP outcomes.	<u>Categorical</u> Coded by offence (e.g., battery, theft, false imprisonment, rape) ¹⁹

¹⁹ Only a selection of examples are provided here due to the extensive number of categories identified.

3.3 Study 1a – Results

3.3.1 Descriptive Statistics

3.3.1.1 *Offender Characteristics*

On average, the 48 offenders within the sample were 37 years of age (SD = 10.84) and had spent 39 months in custody (SD = 44.5). Offenders were most likely to have committed a violent index offence²⁰ (50%, n=24) and were unlikely to have completed any previous treatment interventions (57%, n=27). A quarter of the offenders had a previous AP breach on file (n=12). Within their formulations, 60% (n=29) of the offenders were described as having mental health difficulties, whereas only 35% (n=17) of offenders were described as having traits of a personality disorder. In total, 67% (n=32) of offenders were described within their formulations as being disengaged.

3.3.1.2 *Formulation Quality*

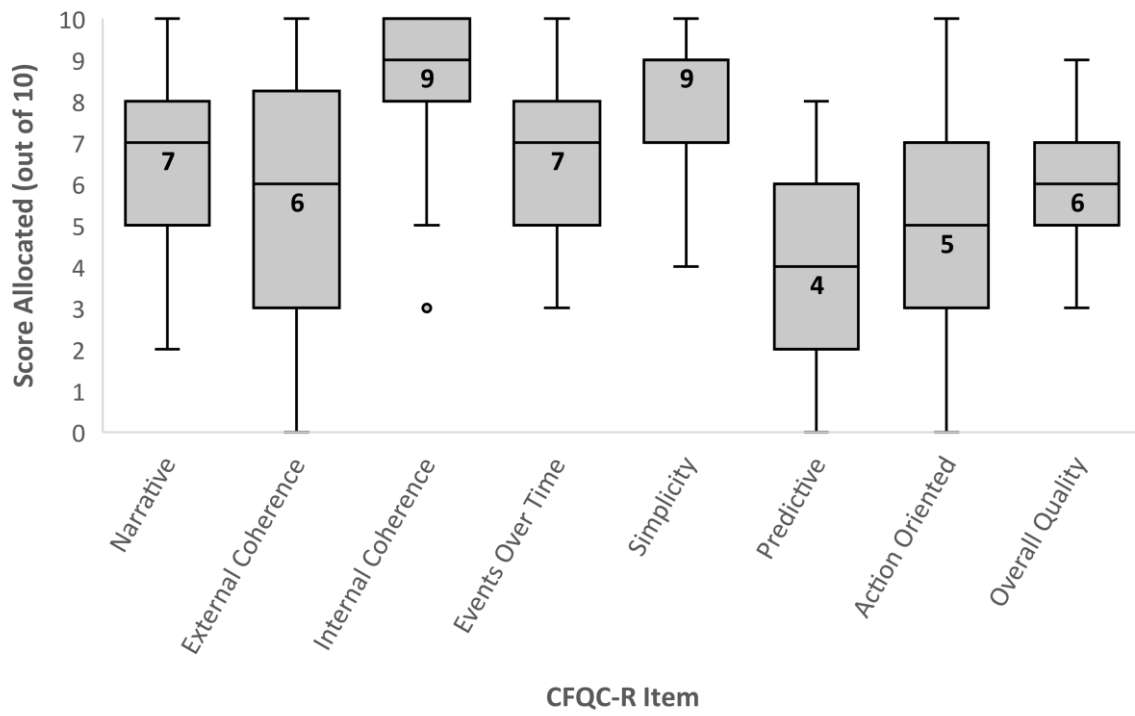
CFQC-R. On average, the formulations scored 50 out of a possible 80 points (63%) on the CFQC-R, suggesting that they were of generally intermediate quality as rated by the researcher on this tool. Individual scores however ranged from 28 to 72, suggesting that the formulations varied widely in quality. Median scores on each CFQC-R item are displayed in Figure 2. These item scores suggest that although the formulations were generally coherent and focused, they were poor at making predictions regarding which strategies may be most effective in reducing risk of harm and did not typically concentrate on planning or prioritising treatment (often instead focusing heavily on offender management). This latter finding is

²⁰ The 'Index Offence' refers to the specific crime committed by the offender which resulted in them being remanded in custody.

likely to be because formulations within the OPDP are primarily written to support OMs in their management of high-risk offenders rather than necessarily planning treatment.

Figure 2

Overview of Scores Allocated to the Formulations by the Researcher on Each CFQC-R Item

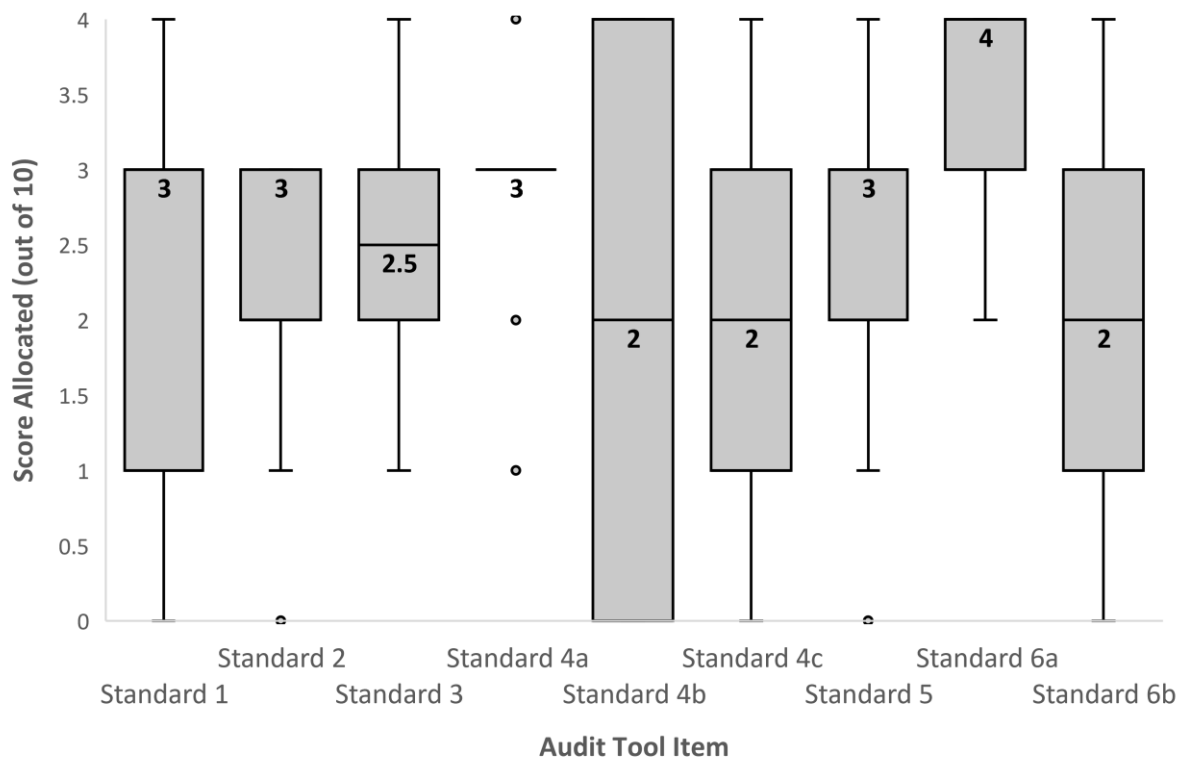


Note. See Table 5 for CFQC-R item descriptions.

Audit Tool. On average, the formulations scored 22 out of a possible 36 points (61%) on the Audit Tool, suggesting that they were of intermediate quality as rated by the researcher using this tool. Individual scores ranged from 10 to 31, again suggesting that the quality of the formulations varied greatly. Median scores on each Audit Tool item can be viewed in Figure 3. These item scores suggest that the formulations were generally well written and organised but tended to lack information about protective factors and were overly descriptive in nature rather than explanatory.

Figure 3

Overview of Scores Allocated to the Formulations by the Researcher on Each Audit Tool Item



Note. See Table 6 for Audit Tool item descriptions. Many of the formulations were rated similarly on Audit Tool Standard 4a (“The formulation *organises* information relevant to the purpose of the formulation”), as many of these formulations used the same template to organise information.

Concurrent Validity. If both the CFQC-R and Audit Tool are measuring the same construct (i.e., formulation quality), it would be expected that a formulation scoring highly on one of these tools would also score highly on the other. This is known as concurrent validity. To examine the concurrent validity of these two tools, a Pearson’s correlation analysis was performed using each formulation’s ‘Total CFQC-R Score’ and ‘Total Audit Tool Score’. A significant positive relationship was found between these two variables, $r = .77, p < 0.001$. This result indicates that the CFQC-R and Audit Tool do have good concurrent validity

(around 60% of the variance is shared), suggesting that they are both measuring a similar construct.

3.3.1.3 Formulation Features

Style, Format and Type. The vast majority of the formulations (83%, n=40) were narrative in style, with only a handful incorporating figures or diagrams. Many psychological models and theories were identified within the formulations, although 15% (n=8) of the formulations were found to be purely descriptive in nature and made no psychological inferences²¹. Partly due to this, only 58% (n=28) of the formulations were found to fit the description of a ‘case formulation’ as defined by NOMS & NHS (2015b)²². Figure 4 provides a more detailed overview of the formulation types identified (and provides a description of these types).

The majority of the formulations were found to be self-contained documents, but almost a third of them directed readers to obtain additional information from other locations. Within over half of the formulations (54%, n=26), the author indicated that potentially important case information was missing or unavailable at the time of writing.

Length and Structure. The extracted formulations contained between 356-2,862 words, spanning between one to six pages. An overview of the average types and amounts of information contained within the formulations can be viewed in Figure 5. This figure shows that on average, almost a quarter (22%) of the information contained within each formulation was dedicated to describing the offender’s problems (Presenting Problems), whereas only 17% was dedicated to hypothesising how these problems may have been caused, triggered, or maintained, or how they might be reduced (i.e., Predisposing Factors, Precipitating Factors,

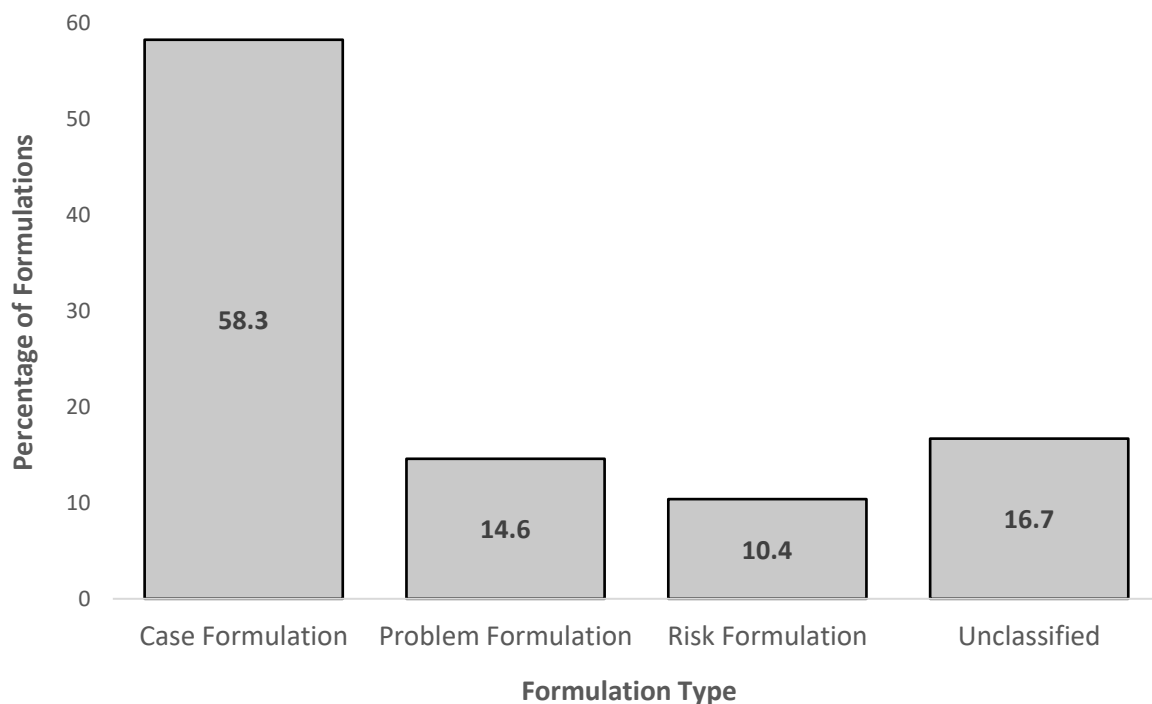
²¹ As described earlier, these formulations were coded by the researcher as ‘level 0’.

²² “A statement of understanding about the whole person, explaining, and connecting many aspects of their life experiences to this point in time (likely to include personality, behaviour and risk)” (p. 38).

Perpetuating Factors, Protective Factors). Many of the formulations utilised bullet points to organise various sections of information, with only 23% (n=13) not doing so. The most common framework used to structure formulations was the 5Ps framework (23%, n=13).

Figure 4

The Percentage of Each Formulation Type Identified Within Study 1a (As Assessed by the Researcher)



Note. To recap, *case* formulations have the broadest focus, aiming to understand the offender in their entirety by linking information together about their background, personality, behaviour, and risk. *Problem* formulations are narrower in focus, aiming to understand the offender’s main problems or symptoms. *Risk* formulations have a specific focus on understanding the offender’s risk of harm to themselves and others and how to best manage and reduce this risk (Knauer et al., 2017; Logan, 2017; NOMS & NHS, 2015b). ‘*Unclassified*’ is a term created by the researcher and refers to those formulations which contained purely descriptive information (i.e., those which did not ‘formulate’ the case in question).

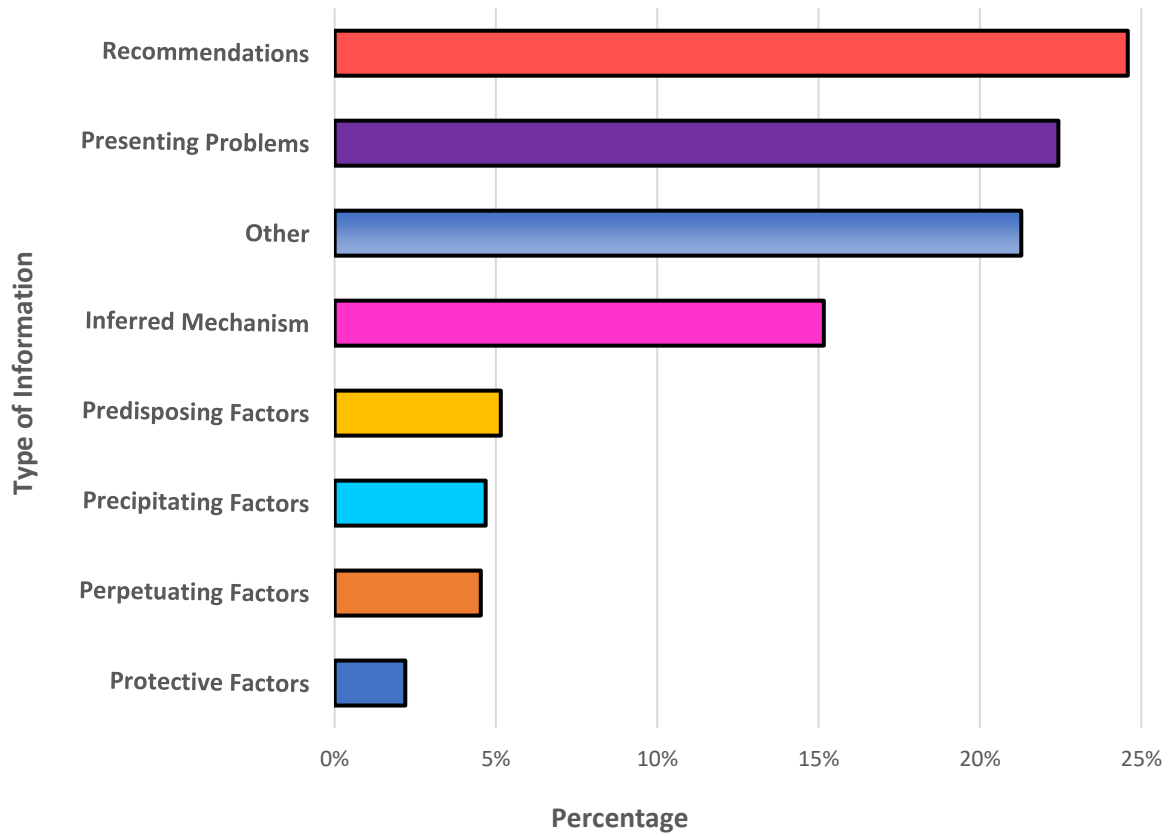
Recommendations. Contrary to the earlier finding that the formulations were poor at planning and prioritising treatment (CFQC-R Action Oriented, Figure 2), the average recommendations section was found to take up 25% of each formulation (328 words on average). One explanation for this is that the recommendations section within many of these formulations was found to be written in a more informal style compared to the rest of the information included, often consisting of a discussion or brainstorm around what might work best to reduce the offender's risk.

On average, five different recommendations were made within each recommendations section (four firm and one potential; see Table 3 for an explanation of these terms), with the most common category of recommendation being 'management strategies' rather than 'treatment interventions'. Again, this may reflect the fact that formulations within the OPDP are primarily used to assist the OM in better managing the offender in question, rather than specifically to select treatment. However, 56% (n=27) of the recommendations sections within these formulations were headed by passive titles such as 'Suggestions', rather than more proactive titles such as 'Actions'. Within almost three quarters of the formulations (73%, n=35), the recommendations section was also situated at the very end of the document. The vast majority of the recommendations sections were rated by the researcher as being of either low or moderate complexity overall (90%, n=43).

Formulation level. As previously described, all extracted formulations were recorded by their authors as being of level 2. However, when categorised by the researcher with the use of guidance on OPDP formulation levels (Logan, 2017; NOMS & NHS, 2015b), more than half (52%, n=25) of the formulations were found to be inconsistent with the level 2 criteria. See Figure 6 for an overview of the researcher-allocated levels.

Figure 5

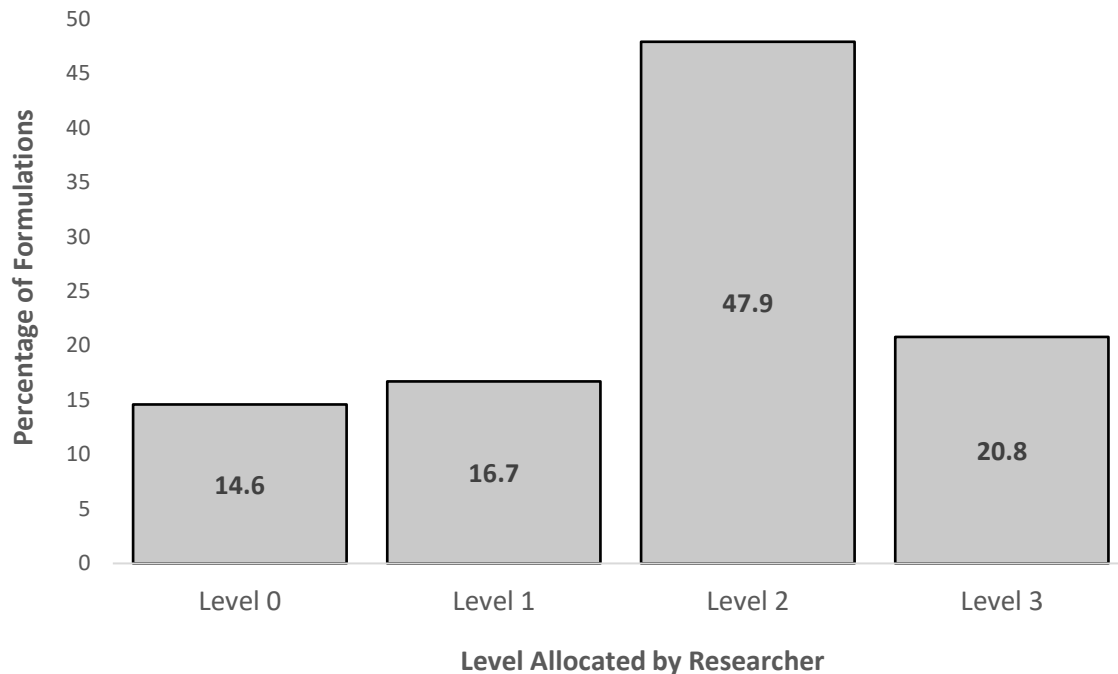
Mean Percentage of Each Type of Information Contained Within the Formulations (As Assessed by the Researcher)



Note. 'Other' information describes that which did not fit into any other category (i.e., headings, explanations of terms used, details of those present at the consultation meeting).

Figure 6

The Percentage of Each Level of Formulation Identified Within Study 1a (As Assessed by the Researcher)



Note. ‘Level 0’ formulations (a term created by the researcher) refer to those which contained purely descriptive information (i.e., those which did not ‘formulate’ the case in question).

3.3.1.4 Other Features of Interest

AP Factors. On average, each formulation was completed 39 days before the offender entered AP. Only 40% (n=19) of the formulations included any consideration of the offender’s AP entry or residency.

OM Factors. The mean number of OMs allocated to each case was two, with the second of these most often being a specialist OPDP OM²³. However, monitoring forms were completed alongside formulations in only a very small number of cases (8%, n=4).

²³ Sometimes also known as ‘Personality Disorder Probation Officers’ (PDPOs).

Psychologist Factors. As previously described, the 48 extracted formulations were written by 12 different psychologists. The highest number of formulations written by a single psychologist was nine, with two psychologists completing only one formulation each. In terms of reflective content, only 29% (n=13) of the formulations included a note from the psychologist commenting on the precision of the hypotheses made (i.e., describing these hypotheses as ‘tentative’ or making it known that these hypotheses should be updated in future if more information were to become available).

3.3.2 Inferential Statistics

3.3.2.1 Method of Analysis

To investigate whether any particular CFQC-R Scores/Audit Tool Scores/Formulation Features could contribute to the prediction of AP outcomes (Move On/Breach), binary logistic regression analysis was conducted. This method of analysis was chosen due to its ability to “predict which of two categories a person is likely to belong to given their scores on predictors” (Field, 2018), and due to its ability to identify *which* of the predictors analysed can most accurately predict category membership (Osborne, 2015). In addition, binary logistic regression allows for regression models to be developed, revised, and compared until a model of best fit is identified. This would suggest that binary logistic regression is a suitable method to use when undertaking exploratory data analysis.

3.3.2.2 Assessing Suitability of Data

Sparse Data. Prior to conducting any statistical analysis, each categorical predictor variable (e.g., formulation type, index offence) was cross tabulated with AP Outcome (Move On/Breach) to ensure that all categories within these variables were populated with sufficient data. Standard rules of thumb dictate that *all* cells within a 2x2 contingency table should have

expected frequency counts of ≥ 5 , and that at least 80% of cells within larger contingency tables should have frequency counts of ≥ 5 (Field, 2018). If these assumptions are violated, there is a possibility that any regression analyses involving these categorical variables will be significantly underpowered (Howell, 2013).

Within the present study, the examination of contingency tables revealed that many of the categorical predictor variables collected did not meet these required assumptions due to containing sparse data across categories. To resolve this issue, each problematic variable was examined in turn to determine if its categories could be meaningfully collapsed. Table 8 provides a detailed overview of this process. Where these issues of sparse data could not be rectified, categorical predictor variables were entered into regression analyses as usual, but close attention was paid to the results of these analyses. Large regression coefficients and standard errors are indicative of problems with sparse data (Field, 2018).

Table 8*Categorical Predictor Variables Found to Contain Sparse Data Across Categories When Cross Tabulated with AP Outcome*

Categorical Variable	Contingency Table Size	Previous % of Cells Containing Sparse Data	Action Taken	New Categories	Current % of Cells Containing Sparse Data
Level of Formulation	4x2	62.5	Collapsed	Does Not Adhere to Level 2 Guidelines: 0 Adheres to Level 2 Guidelines: 1	0
Recommendations Complexity	3x2	33.3	Collapsed	Low Complexity: 1 High Complexity: 2	0
Recommendations Placement	3x2	75	Collapsed	Recommendations at End: 1 Recommendations Not at End: 2	0
Model/Theory	19x2	100	Collapsed	None: 0 Theory Based Model²⁴: 1 Therapy Based Model²⁵: 2 Mixed (Both Types): 3	37.5

²⁴ E.g., Social Learning Theory, Labelling Theory

²⁵ E.g., Schema Therapy, Cognitive Analytical Therapy

Table 8 Continued

Categorical Variable	Contingency Table Size	Previous % of Cells Containing Sparse Data	Action Taken	New Categories	Current % of Cells Containing Sparse Data
Index Offence Type	14x2	92.9	Collapsed	Violent Offence: 1 Sexual Offence: 2 Other Offence: 3	33.3
Ease of Access	2x2	75	None	N/A	N/A
Monitoring Form	2x2	50	None	N/A	N/A
Formulation Type	4x2	75	None	N/A	N/A
Psychologist	12x2	100	None	N/A	N/A

Note: The ‘Ease of Access’ and ‘Monitoring Form’ variables could not be further collapsed due to containing only two categories. The ‘Formulation Type’ variable was not collapsed as it was believed that doing so would reduce the usefulness of the variable; collapsing it into two categories (such as case/risk/problem formulation vs none) would eliminate the ability to make any inference about the impact of formulation type on AP outcome. Collapsing the ‘Psychologist’ variable into broader categories based on ‘type’ of psychologist (forensic vs clinical), ‘level/grade’ of psychologist or ‘geographical location’ of psychologist was considered but avoided due to the loss of detail that would result from this; it was considered important to retain as much detail as possible within the psychologist variable in order to investigate whether the particular psychologist writing the formulation has any bearing on the offender’s AP outcome.

3.3.2.3 Regression Method

Due to the exploratory nature of the present study, more than 60 variables were measured in total (described within Tables 4-7). However, entering large numbers of predictor variables into a regression model can lead to erroneous results or a lack of model convergence (due to too many variables being applied to too few datapoints). To avoid these issues, it is commonly recommended that the variables entered into a regression model be carefully selected, usually on the basis of previous research findings, clinical observations, or preliminary analyses (Bursac et al., 2008; Field, 2018; Ranganathan et al., 2017; Stoltzfus, 2011).

In the absence of any previous empirical findings on which to base the present analysis, the decision was made to run a series of preliminary analyses on the collected data in order to identify those variables of most interest. Variables selected using this process were then entered into the main regression analysis. This method of variable selection was viewed as most appropriate in the circumstances, as it allowed for the exploration of all collected data whilst also reducing the likelihood of problems arising due to model overfitting (i.e., lack of model convergence). Clinical observations were also utilised at a later stage to identify variables of most interest; this was done to enrich the findings of the present analysis (Study 1b, p. 134).

For the preliminary analyses, an exploratory model-building approach was employed whereby 'blocks' of predictor variables were entered into separate preliminary regression models. Any variables found to contribute significantly to the prediction of AP outcomes (Move On/Breach) within each of these preliminary models were then entered into the final regression analysis. The steps carried out to perform these analyses are described in detail below:

1. Predictor variables were divided into six different 'blocks' according to their type and source. A full overview of the variables included within each block and the rationale for selecting these can be seen in Table 9.
2. With the use of IBM SPSS Statistics Version 25, each block of predictor variables was entered into a separate preliminary regression analysis using the 'forced entry' method. AP Outcome (Move On/Breach) was defined as the dependent variable in each of these preliminary analyses.
3. Predictor variables found *not* to significantly contribute to the fit of the preliminary model they were entered into were systematically removed. The purpose of this was to create a series of parsimonious models consisting of only those predictor variables with significant "explanatory benefit" (Field, 2018, p. 885). This removal technique is similar to a Backward Stepwise method (where non-significant predictors are removed from the model based on mathematical criterion), but leaves important removal decisions to the researcher. The significance of each predictor within its respective preliminary model was determined both by examining its Wald criterion value (which represents the strength of the association between each predictor variable and the outcome variable), and by assessing the change in model fit after that predictor was removed (by observing the significance of the change in -2 log-likelihood values). Significance was determined at the $p \leq .1$ level to maximise the likelihood of retaining all important predictors for entry into the final regression analysis whilst also avoiding overfitting of the subsequent final model.
4. All variables identified as significant predictors of AP Outcome within these preliminary regression analyses were entered into the final regression analysis using the 'forced entry' method. Variables which did not retain significance at this stage were systematically removed. Significance was determined using the same methods as before, but this time a more traditional significance level ($p \leq .05$) was used with the aim of reducing error within

the final model. This method resulted in a model containing only the strongest predictors of AP Outcome.

5. These significant predictors of AP Outcome were then re-entered into the model hierarchically; significant ‘offender characteristics’ predictors were entered into step 1, whereas significant ‘formulation features’ predictors were entered into step 2. This was done to understand whether any CFQC-R Scores/Audit Tool Scores/Formulation Features identified as important could account for a significant amount of variance in AP Outcome after accounting for that explained by any offender characteristics identified as important.

Table 9*Blocks of Predictor Variables Created to Facilitate Regression Analysis*

Block Name	Variables Included	Rationale
Offender Characteristics	Age on AP Entry, Prior AP Breach, Number of Treatments Completed, Index Offence Type, Mental Illness Frequency, Personality Disorder Frequency, Sentence Length, Level of Engagement	These variables contain information about offender characteristics rather than formulation features. Any offender characteristics found to significantly predict AP Outcome within this preliminary analysis (i.e., criminogenic features) will be controlled for within the final regression analysis to reduce their confounding influence.
CFQC-R	Narrative, External Coherence, Internal Coherence, Events Over Time, Simplicity, Predictive, Action Oriented, Overall Quality	As previously described, the CFQC-R (McMurrin & Bruford, 2016) is an existing (though unvalidated) formulation quality tool. Due to this reason, all CFQC-R items were analysed together to facilitate an understanding of the predictive validity of this tool.
Audit Tool	Audit Tool Standard 1, Audit Tool Standard 2, Audit Tool Standard 3, Audit Tool Standard 4a, Audit Tool Standard 4b, Audit Tool Standard 4c, Audit Tool Standard 5, Audit Tool Standard 6a, Audit Tool Standard 6b	As previously described, the Audit Tool (NHS & NOMS, 2015b) is an existing (though unvalidated) formulation quality tool. Due to this reason, all Audit Tool items were analysed together to facilitate an understanding of the predictive validity of this tool.

Table 9 Continued

Block Name	Variables Included	Rationale
Style and Format	Model/Theory, 5Ps Structure, Formulation Type, Formulation Title, Level of Formulation, Reflective Content, Information Missing, Style/Format, One Document, Ease of Access, Recommendations Title, Recommendations Placement, Recommendations Complexity, AP Consideration, Monitoring Form	These variables all contain categorical information about the style or format of the formulation. All potentially ‘problematic’ categorical variables were contained within this block to ensure that any effects of sparse data would remain limited to one preliminary analysis.
Length and Structure	Formulation Length, Presenting Problems Length, Predisposing Length, Precipitating Length, Perpetuating Length, Protective Length, Inferred Mechanism Length, Recommendations Length, Other Length, Formulation Bullet, Presenting Problems Bullet, Predisposing Bullet, Precipitating Bullet, Perpetuating Bullet, Protective Bullet, Inferred Mechanism Bullet, Recommendations Bullet	This block contains information about the length and structure of each section within the formulation.
Recommendations	Firm Treatment Interventions, Potential Treatment Interventions, Firm Management Strategies, Potential Management Strategies, Firm Further Information Requests, Potential Further Information Requests, Formulation-AP Interval, Number of OMs	This block contains information about the recommendations made within the formulation and factors that may have had an impact on whether these recommendations were carried out.

3.3.2.4 Regression Results.

Preliminary Regression Analyses.

Offender Characteristics Block. The model containing all predictors in the ‘Offender Characteristics’ block provided a significantly better fit to the data than the intercept-only model, $X^2(10) = 27.96$, $p = .002$, Nagelkerke $R^2 = .59$. After systematically removing predictors which did not significantly contribute to the fit of this model²⁶, three predictors remained (Number of Treatments Completed, Age at AP Entry, Prior AP Breach). Table 10 shows that increases in Number of Treatments Completed and increases in Age at AP Entry were found to be significantly associated with *decreases* in the odds of an offender breaching within AP. Having a Prior AP Breach on record was instead found to be significantly associated with *increases* in the odds of an offender breaching within AP again.

Table 10

Results of the Preliminary Regression Model Containing Significant ‘Offender Characteristics’ Predictors

Variable	B (SE)	95% CI for odds ratio		
		Lower	Odds Ratio	Upper
Constant	0.13 (0.40)		1.14	
Age at AP Entry	-0.07* (0.04)	0.87	0.94	1.01
Number of Treatments Completed	-0.76** (0.31)	0.25	0.47	0.85
Prior AP Breach	1.90* (1.10)	0.77	6.71	58.26

Note. Model $X^2(3) = 20.98$, $p < .001$, Nagelkerke $R^2 = .47$.

* $p < .1$, ** $p < .05$.

²⁶ Personality Disorder Frequency, Mental Illness Frequency, Level of Engagement, Index Offence Type, Sentence Length.

CFQC-R Block. The model containing all predictors in the ‘CFQC-R’ block did not provide a significantly better fit to the data than the intercept-only model, $X^2(8) = 4.45, p = .82$, Nagelkerke $R^2 = .12$. None of the eight CFQC-R items were found to be significantly associated with AP Outcome. ‘Total’ CFQC-R score was also examined (the sum of the 8 CFQC-R items used) to provide a better understanding of the predictive validity of the tool. This analysis indicated that ‘Total’ CFQC-R Score also did not predict AP Outcome significantly better than the intercept-only model, $X^2(1) = 0.53, p = .47$, Nagelkerke $R^2 = .02$.

Audit Tool Block. The model containing all predictors in the ‘Audit Tool’ block provided a significantly better fit to the data than the intercept-only model, $X^2(9) = 18.41, p = .03$, Nagelkerke $R^2 = .43$. After removing non-significant predictors²⁷, three predictors remained in the model (Audit Tool standard 3: “The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour”, Audit Tool Standard 4b: “The formulation provides a balanced view about areas of vulnerability *and* areas of strength, including protective factors”, and Audit Tool Standard 4c: “The formulation *connects* pieces of information about the person or the problem/risk in order to create an explanation for the case or the risk/problem under scrutiny”). Table 11 shows that increases in scores on Audit Tool Standard 3 and Audit Tool Standard 4b were found to be significantly associated with *decreases* in the odds of an offender breaching within AP. Increases in scores on Audit Tool Standard 4c were however found to be significantly associated with *increases* in the odds of an offender breaching within AP.

Total Audit Tool Score was also examined (the sum of the nine Audit Tool items) to provide an understanding of the predictive validity of the tool as a whole. Total Audit Tool Score was found *not* to predict AP Outcome significantly better than the intercept-only

²⁷ Audit Tool Standard 1, Audit Tool Standard 5, Audit Tool Standard 6a, Audit Tool Standard 6b, Audit Tool Standard 2, Audit Tool Standard 4a

model, ($X^2(1) = 2.36, p = .13$, Nagelkerke $R^2 = .06$), suggesting that it may be the scores achieved on particular Audit Tool items that are important, rather than the total score achieved on the tool overall.

Table 11

Results of the Preliminary Regression Model Containing Significant ‘Audit Tool’ Predictors

Variable	B (SE)	95% CI for odds ratio		
		Lower	Odds Ratio	Upper
Constant	0.05 (0.34)		1.05	
Audit Tool Standard 3	-1.74** (0.31)	0.05	0.18	0.63
Audit Tool Standard 4b	-0.44* (0.65)	0.41	0.64	1.0
Audit Tool 4c	1.09* (0.52)	1.08	2.97	8.17

Note. Model $X^2(3) = 14.63, p = .002$, Nagelkerke $R^2 = .35$.

* $p \leq .05$, ** $p < .01$.

Style and Format Block. As discussed earlier, if the categorical predictor variables entered into a regression analysis do not contain sufficient data within each of their categories, errors in model estimation can occur (Field, 2018). As suspected from viewing contingency tables earlier in the data analysis process (Table 8), two of the predictors within the current block (‘Monitoring Form’ and ‘Ease of Access’) caused a model convergence error due to their ‘quasi-complete separation’. This describes the phenomenon whereby one or more predictor variables within a logistic regression analysis are able to perfectly predict one of the categories of the outcome variable (Rainey, 2016). Please see Table 12 for an example of the issue encountered.

Table 12*Contingency Table Displaying Evidence of Quasi-Complete Separation*

AP Outcome	Ease of Access (to additional information)	
	Specific Location	General Location
Planned Move On	6	0
Breach	3	5

A common solution to this issue is to use the ‘penalised likelihood’ method of regression (Firth, 1993), which allows for the computation of reliable coefficient estimates even in the presence of separation (Gim & Ko, 2017). This penalised regression method has been described as “simple and valid” (Zorn, 2005, p. 168), and is purported to be far preferable to the deletion of separated variables (which can instead cause erroneous estimates of remaining covariates and is regarded by some as a “deliberate specification bias” (Zorn, 2005, p. 162)).

For these reasons, Firth’s penalised regression method was used to analyse the 15 predictors within the ‘Style and Format’ block. This was done by downloading the STATS_FIRTHLOG extension package in IBM SPSS Statistics 25. With the use of this penalised regression method, the model successfully converged. This 15-predictor model however did not provide a significantly better fit of the data than the intercept-only model, $X^2(19) = 25.87, p = .13, \text{Nagelkerke } R^2 = .09$. Non-significant variables were again systematically removed²⁸, leaving one significant predictor (5Ps Structure) in the model. Containing this predictor alone, the model could account for significantly more variance in AP Outcome than the intercept-only model, $X^2(1) = 6.23, p = .01, \text{Nagelkerke } R^2 = .16$. Table

²⁸ Reflective Content, Monitoring Form, Recommendations Title, Formulation Title, Formulation Type, Information Missing, Style/Format, Recommendations Complexity, Model/Theory, Recommendations Placement, One Document, Ease of Access, AP Consideration, Correct Level.

13 shows that the use of a 5Ps structure was found to be significantly associated with *decreases* in the odds of an offender breaching within AP.

Table 13

Results of the Preliminary Regression Model Containing Significant ‘Style and Format’ Predictors

Variable	B (SE)	95% CI for odds ratio		
		Lower	Odds Ratio	Upper
Constant	1.20 (0.35)		1.70	
5Ps Structure	-1.73* (0.75)	0.02	0.18	0.76

Note. Model $X^2(1) = 6.23$, $p = .01$, Nagelkerke $R^2 = .16$.

* $p \leq .01$

Length and Structure Block. The model containing all predictors within the ‘Length and Structure’ block did not provide a significantly better fit to the data than the intercept-only model, $X^2(17) = 15.13$, $p = .59$, Nagelkerke $R^2 = .36$. After systematically removing non-significant predictors²⁹, three predictors remained in the model. Two of these had significant Wald criterion values (‘Protective Length’ and ‘Inferred Mechanism Bullet’). The third (‘Presenting Problems Length’) did not have a significant Wald criterion value but did cause significant change in the model when removed ($p = .09$). This 3-predictor model could account for significantly more variance in AP Outcome than the intercept-only model, $X^2(3) = 12.59$, $p = .006$, Nagelkerke $R^2 = .31$. Table 14 shows that increases in ‘Protective Length’ (wordcount³⁰) and ‘Presenting Problems Length’ (wordcount³⁰) were found to be associated with *decreases* in the odds of an offender breaching within AP. Using bullet points to display

²⁹ Recommendations Bullet, Predisposing Length, Other Length, Recommendations Length, Perpetuating Length, Precipitating Length, Formulation Bullet, Formulation Length, Inferred Mechanism Length, Predisposing Bullet, Presenting Problems Bullet, Protective Bullet, Precipitating Bullet, Perpetuating Bullet.

³⁰ These wordcounts were divided by 100 for the current analysis to facilitate interpretation of Table 14 (i.e., the statistics reported represent change in log odds per 100 words rather than per 1 word).

the information within the inferred mechanism section ('Inferred Mechanism Bullet') was also found to be associated with *decreases* in the odds of an offender breaching within AP.

Table 14

Results of the Preliminary Regression Model Containing Significant 'Length and Structure' Predictors

Variable	B (SE)	95% CI for odds ratio		
		Lower	Odds Ratio	Upper
Constant	0.77 (0.56)		2.16	
Protective Length	-3.32** (1.57)	0.00	0.04	0.78
Presenting Problems Length	-0.35 (0.22)	0.46	0.71	1.09
Inferred Mechanism Bullet	-1.34* (0.77)	0.06	0.26	1.18

Note. Model $X^2(3) = 12.59, p = 0.006$, Nagelkerke $R^2 = .31$.

* $p < .1$, ** $p < .05$.

Recommendations Block. The model containing all predictors in the 'Recommendations' block did not provide a significantly better fit of the data than the intercept-only model, $X^2(8) = 5.90, p = .66$, Nagelkerke $R^2 = .15$. Non-significant predictors were systematically removed³¹, leaving one predictor remaining in the model ('Potential Management Strategies'). This predictor did not have a significant Wald criterion value but did cause significant change in the model when removed ($p = .1$). Table 15 shows that increases in the number of Potential Management Strategies recommended within a formulation may be associated with *decreases* in the odds of an offender breaching within AP.

³¹ Firm Treatment Interventions, Firm Management Strategies, Number of OMs, Firm Further Information Requests, Potential Further Information Requests, Formulation-AP Interval and Potential Treatment Interventions.

Table 15*Results of the Preliminary Regression Model Containing Significant 'Recommendations'**Predictors*

Variable	B (SE)	95% CI for odds ratio		
		Lower	Odds Ratio	Upper
Constant	0.05 (0.30)		1.05	
Potential Management Strategies	-0.74 (0.54)	0.17	0.48	1.37

Note. Model $X^2(1) = 2.77, p = .1$, Nagelkerke $R^2 = .08$.

Final Regression Analysis. The 11 variables identified as significant within the preliminary regression analyses³² were entered into a final regression analysis together. Those variables which did not retain significance at the $p \leq .05$ level at this stage were systematically removed³³. This process resulted in 3-predictor model containing Audit Tool Standard 3³⁴, 'Number of Treatments Completed' and 'Prior AP Breach'. This model could account for significantly more variance in AP Outcome than the intercept-only model, $X^2(3) = 22.87, p \leq .001, R^2 = .51$.

To conclude the analysis, these significant predictors were re-entered into the model hierarchically to investigate whether Audit Tool Standard 3 (the only formulation related variable remaining in the analysis) could account for a significant amount of variance in AP Outcome after accounting for that explained by the two 'offender characteristics' predictors ('Number of Treatments Completed' and 'Prior AP Breach'). To do this, 'Number of Treatments Completed' and 'Prior AP Breach' were entered into Step 1 of the model, and Audit Tool Standard 3 was entered into Step 2.

³² Age at AP Entry, Number of Previous Treatments, Prior AP Breach, Audit Tool Standard 3, Audit Tool Standard 4b, Audit Tool Standard 4c, 5Ps Structure, Protective Length, Presenting Problems Length, Inferred Mechanism Bullet, Potential Management Strategies.

³³ Protective Length, Inferred Mechanism Bullet, Audit Tool Standard 4c, Potential Management Strategies, 5Ps Structure, Presenting Problems Length, Audit Tool 4b.

³⁴ "The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour".

The results of this analysis firstly showed that the two ‘offender characteristics’ predictors alone could explain a significantly larger amount of variance in AP Outcome than the intercept only model, $X^2(2) = 17.35, p \leq .001$, Nagelkerke $R^2 = .41$. Encouragingly however, the analysis also revealed that adding Audit Tool Standard 3 to this model provided a further significant improvement in model fit, $X^2(1) = 5.51, p = .02$, Nagelkerke $R^2 = .51$. This indicates that Audit Tool Standard 3 is a significant predictor of AP Outcome even after accounting for the variance explained by influential offender characteristics.

Interpretation of Final Model. Table 16 shows that increases in ‘Number of Treatments Completed’ and increases in scores on Audit Tool Standard 3 were found to be significantly associated with *decreases* in the odds of an offender breaching within AP. Having a ‘Prior AP Breach’ on record was instead found to be significantly associated with *increases* in the odds of an offender breaching within AP again.

Table 16

Overview of the Final Hierarchical Regression Model Containing Significant Predictors of AP Outcome

Variable	B (SE)	95% CI for odds ratio		
		Lower	Odds Ratio	Upper
Step 1				
Constant	0.15 (0.38)		1.16	
Number of Treatments Completed	-0.90*** (0.31)	0.22	0.47	0.75
Prior AP Breach	2.01* (1.10)	0.87	7.49	64.75
Step 2				
Constant	0.20 (0.41)		1.22	
Number of Treatments Completed	-1.00*** (0.34)	0.19	0.37	0.72
Prior AP Breach	2.27** (1.13)	1.06	9.68	88.80
Audit Tool Standard 3	-0.96** (0.47)	0.15	0.38	0.95

Note. Nagelkerke R² for Step 1 = .41; Nagelkerke R² for Step 2 = .51.

* $p < .1$, ** $p < .05$, *** $p < .01$.

Determining Suitability of Final Model. Although there is some debate in the literature regarding when it is most suitable to test model assumptions, many authors argue that these types of tests can only be accurately conducted once a model has been fitted (Field, 2018; Grace-Martin, 2016). Based on this guidance, the next step within the current study was to assess the fit and suitability of the final regression model described within Table 16.

Sparse Data. Wide confidence intervals surrounding an odds ratio are said to be indicative of issues relating to sparse data (de Irala et al., 1997; Greenland et al., 2016).

Unfortunately, a wide confidence interval was observed within the final model around the odds ratio for ‘Prior AP Breach’ (Table 16). A cross-tabulation of Prior AP Breach and AP Outcome revealed that sparse data was indeed likely to be the cause of this issue (see Table 17 for details). As sparse data often results in a degree of separation, Firth’s penalised regression method was run on the variables within the final model to try to correct for this potential issue. However, applying this method did not make a noticeable difference to the results, and a test used to identify the presence of separation³⁵ using R 3.5.0 (R Development Core Team, 2018) was negative. This is likely to be due to the small degree of separation present (i.e., not quasi-complete or complete separation). The final model was therefore left unaltered, meaning that particular caution should be given to the interpretation of results relating to the ‘Prior AP Breach’ variable.

Table 17

Contingency Table Displaying Evidence of Partial Separation in the Prior AP Breach Variable when Cross-Tabulated with AP Outcome

AP Outcome	Prior AP Breach	
	Yes	No
Planned Move On	3	20
Breach	9	16

Note. All *expected* cell counts were ≥ 5 , which is why this variable was not flagged as potentially problematic earlier in the analysis process.

Independence of Errors. One important assumption of logistic regression is that cases are independent of each other (Stoltzfus, 2011). However, data is often not organised at a single level but is instead clustered within groups³⁶. In regression models where clustering

³⁵ Using the ‘Bias Reduction in Binary-Response Generalized Linear Models’ (brglm) package (Kosmidis, 2019).

³⁶ As an example, students are often clustered by classroom; this means that the test scores of students *within*-classrooms may be more similar to each other than the test scores of students *between*-classrooms.

exists, overdispersion may arise (Field, 2018), which is often signified by small standard errors and narrow confidence intervals. This can cause researchers to come to over-optimistic conclusions about the strength of the relationships between the variables in a model.

Within the present study, the assumption of independence of errors was *not* met, as the formulations were clustered by psychologist³⁷. This means that formulations written by the *same* psychologist might be more similar to each other than those written by *different* psychologists, which would potentially explain a significant amount of variance in AP Outcome. For example, it could be that all formulations scoring highly on Audit Tool Standard 3 were written by the same psychologist, which would indicate that it is the *psychologist* that is of importance rather than Audit Tool Standard 3 itself.

To measure the impact of clustering variables and to reduce any effects caused by overdispersion, it is possible to run a multi-level regression analysis to identify the amount of variance in an outcome variable (i.e., AP Outcome) that can be explained by ‘level 1’ variables (e.g., Audit Tool Standard 3) and level 2 ‘clustering’ variables (e.g., psychologist) separately. Before an analysis of this type is conducted however, both Field (2018) and Sommet and Morselli (2017) recommend that the need for multi-level regression analysis should be fully assessed. This can be done by fitting a model containing *only* level 2 ‘clustering’ variables to examine whether the log odds of obtaining a particular outcome (i.e., Breach) do in fact vary from one cluster to another (i.e., from one psychologist to another). This between-cluster variation can be assessed by calculating the interclass correlation (ICC). If the ICC is large (near 1), this indicates that the values within a cluster are highly similar (i.e., formulations written by the same psychologist have similar outcomes). An ICC near 1 would therefore indicate that a large proportion of the variance in AP Outcome *is* attributable to the psychologist who wrote the formulation. If the ICC is small however (near 0), this

³⁷ The 48 extracted formulations were written by 12 different psychologists.

would indicate that values within a cluster vary widely (i.e., formulations written by the same psychologist have different outcomes), which would suggest that AP Outcome *is not* attributable to the psychologist who wrote the formulation. Obtaining an ICC close to 0 (near perfect independence of residuals) therefore suggests that performing a standard one-level regression analysis is likely to be sufficient (Sommet & Morselli, 2017).

With this in mind, a regression model was fitted containing only the level 2 ‘clustering’ variable (Psychologist). The resulting ICC was found to be 0.02, indicating that 98% of the variance in AP Outcome could be explained by within-psychologist *differences* (i.e., formulations written by the same psychologist had different AP outcomes). This value is very close to 0, suggesting that it is permissible to retain the single-level regression model calculated earlier (Table 16). With these results in mind (near perfect independence of residuals), it can be said that the model *does* in fact meet the assumption of independence of errors.

Linearity of the Logit. A second assumption of logistic regression is that there is a “linear relationship between any continuous predictors and the logit of the outcome variable” (Field, 2018). One method of testing this assumption is to perform a Box-Tidwell test (Box & Tidwell, 1962), which involves calculating the interaction term between each continuous predictor in a regression model and the log of itself. If any of these interaction terms are significant at the $p \leq .05$ level, this indicates that the assumption of linearity of the logit has been violated.

For the present study, two continuous predictors remained within the final model (‘Number of Treatments Completed’ and ‘Audit Tool Standard 3’) and were therefore tested against this assumption. Interaction terms for both of these predictors were found to be non-significant ($p = .26$ and $p = .19$ respectively), indicating that the final model successfully meets the assumption of linearity of the logit.

Multicollinearity. Logistic regression also assumes that there is no multicollinearity amongst predictors within the model (Stoltzfus, 2011). Multicollinearity occurs when two or more predictors are highly correlated, making interpretation of the model difficult and impacting the reliability of any conclusions drawn. To assess the level of multicollinearity between predictors in a model, variance inflation factors (VIFs) and tolerance statistics are commonly computed. Standard rules of thumb state that VIFs above 10 are cause for concern (Menard, 2002), and that the *average* VIF should be close to 1 (Bowerman and O’Connell, 1990). For tolerance statistics, values should not fall below 0.1 (Myers, 1990) .

With these guidelines in mind, VIFs and tolerance statistics were calculated for the variables within the final model (‘Number of Treatments Completed’, ‘Prior AP Breach’, Audit Tool Standard 3). These were all found to be well within the acceptable range³⁸, indicating an absence of multicollinearity.

An additional method of identifying multicollinearity is to calculate a correlation matrix of all predictor variables within a model. Field (2018) suggests that as a general rule, correlations between variables should not exceed 0.8 or 0.9. With the use of this suggested method, it was found that all correlations between predictor variables within the final model were < .1, further confirming that the assumption of the absence of multicollinearity has been met.

Outliers and Influential Cases. A fourth assumption of logistic regression is that there are no “strongly influential outliers” within the dataset (Stoltzfus, 2011, p. 1101). One method of identifying outliers within regression analyses is to examine residuals, which are calculations of the difference between each observed value and its predicted value. Large residuals signify cases for which the regression model fits poorly (Field, 2018). Standardised

³⁸ All VIFs and tolerance statistics were equal to 1.

residuals are those which have been converted into z-scores for easier interpretation and comparison. Universal guidelines prescribe that within a normally distributed dataset, no more than 5% of z-scores should fall outside the range of ± 1.96 , no more than 1% should fall outside the range of ± 2.58 , and no more than 0.01% should fall outside the range of ± 3.29 . Z-scores outside the range of ± 3.29 are cause for concern (Field, 2018).

Within the final model, only two standardised residuals fell outside of the ± 1.96 limit (4.2%), which is within the acceptable range. However, the first of these two values was 2.73 (falling within the upper ± 3.29 limit) and the second was 3.3 (falling just outside of the upper 3.29 limit), indicating that there are two outliers within the dataset for which the model does not fit well. These cases were investigated further to understand their influence on the final model.

Cook's distances and leverage values can be calculated to identify cases which have a large influence on a regression model, and which therefore may warrant exclusion from an analysis (Field, 2018, p. 907). Cook and Weisberg (1982) state that any case with a Cook's distance above 1 is cause for concern. Within the current dataset, two cases were found to have a Cook's distance of ≥ 1 , indicating that these cases were having an undue influence on the model. These cases were found to be the same two outliers identified previously.

In terms of leverage values, Field (2018) states that values twice or three times the average leverage value should be further investigated, as this indicates that these cases have an unusual combination of values on predictor variables, which may be unduly influencing the model. Within the present study, the average leverage value was calculated to be $(k + 1)/n = 0.08$. Four cases were found to have values of more than double this average leverage (≥ 0.17), with two of these cases being more than triple the average leverage (≥ 0.25). Interestingly, the two cases identified previously as being influential on the model were not amongst those found to have high leverage values. This suggests that cases with high

leverage values, although unusual, did not have an undue influence on the model.

Finally, DFBeta values were inspected, which represent the difference in model parameters when all cases are included versus when each individual case is excluded. Field (2018) states that standardised DFBeta values above 1 may be cause for concern, as this indicates that the case is having a large impact on model parameters. Within the present study, one case was found to have a DFBeta value ≥ 1 . This was one of the cases identified earlier as having a large Cook's value and standardised residual, further suggesting that this case is a large outlier with a strong influence on the final model.

Whilst it is accepted that this investigation of outliers and influence statistics revealed a number of cases which may have unduly influenced the final regression model, these cases were not removed. This was firstly because the study was conducted on real-world data, which often does not fit a well-ordered pattern and arguably should not be artificially forced into one. Secondly, the removal of data can impact the interpretation of findings and can make replication difficult. Thirdly, the investigation of influence statistics is typically intended to provide a measure of how well the model fits the data, rather than a justification of why data should be removed (Field, 2018). Supporting this point, the cases found to have an undue influence on the final model were closely inspected and were confirmed not to have been recorded in error, but to be genuine occurrences in practice. For example, the most influential case was that of an offender who had successfully moved on from AP even though they had a prior AP breach on record and had received no prior treatment. Therefore, in this context, the removal of data which does not completely adhere to model parameters would be improper.

However, it is also accepted that these cases have been identified as introducing a level of error to the model, and so the findings obtained should be viewed with caution. To further substantiate the results of this study, one of the main aims of Study 2 (Chapter 4, p.

153) was to quasi-experimentally manipulate scores on Audit Tool Standard 3 across a range of formulations to better understand the possible influence of this formulation standard on offender outcomes.

3.4 Study 1a – Discussion

3.4.1 Formulation Quality and Characteristics

The finding that the 48 formulations were of intermediate quality on average when rated using the CFQC-R and Audit Tool suggests that although psychologists are currently incorporating *some* features thought to be important for achieving high-quality, there is still much room for improvement. As previously discussed, the use of these tools highlighted that the extracted formulations were typically well organised and written in accessible language, but were often poor at prioritising and planning treatment and poor at making predictions regarding which strategies may be most effective in reducing the risk of harm. The finding that the formulations scored poorly in these areas is concerning, as one of the main aims of forensic case formulation is typically to inform decision making in each case regarding the most appropriate or effective methods of reducing risk (Hart et al., 2011; Knauer et al., 2017). These findings do, however, reflect those described by Hopton et al. (2018; discussed in Chapter 2), who found that risk formulations written by psychologists in practice were typically overly descriptive with little focus on constructing hypotheses, making predictions about future behaviour, or developing treatment plans.

The examination of the length and format of the extracted formulations within the present study also revealed that they were generally very descriptive in nature, with 22% of the content on average consisting of descriptions of the offender's presenting problems and symptoms. This suggests that a sizable amount of time and space is typically dedicated to the 'what' of an individual's offending behaviour, taking away valuable space for the 'why'. This

again is concerning, as another of the main purposes of formulation within the OPDP is to create a psychological *explanation* of the causes, precipitants and maintaining influences of an individual's offending behaviour on which tailored recommendations can then be based.

On the surface, these findings would suggest that psychologists working within forensic services may need further training on how to write forensic case formulations which meet more of these aims and standards. However, an alternative explanation for the poor scores achieved on some items of the CFQC-R and Audit Tool within the present study is that formulations within the OPDP are written primarily for the OM (so that the OM can gain a better understanding of each case and receive input on how best to manage each offender). This means that in many cases, formulations written within the OPDP are not specifically aiming to develop treatment plans, but rather *management* plans which can be utilised by OMs to work with offenders more effectively. This would explain why the formulations did not score well in certain areas such as 'CFQC Action Oriented' ("The formulation prioritises and plans treatments"). However, this is not an explanation for every low-scoring item, as the extracted formulations also scored poorly on some items which they would have been expected to perform well on (i.e., Audit Tool Standard 6b: "The formulation is meaningful, provides a coherent explanation of the case or problem/risk, and adds to what is already known about the service user").

These findings suggest that it would be valuable for future research to examine the forensic case formulation skills of psychologists to better understand if and how these are developed and updated over time³⁹. It may also be fruitful to conduct a qualitative investigation into *why* psychologists do not typically write formulations which adhere to items within these developed quality tools and guidelines; for instance, there may be some differences in opinion regarding the accuracy of these tools (as they have yet to be fully

³⁹ This topic is further explored in Study 4 (p. 252).

validated), or it may be the case that not all psychologists are aware of the existence of these quality tools and guidelines.

As described within Chapter 1, three different levels of formulation are written within the OPDP, specifically to provide “flexibility in response to widely divergent contexts and practitioner needs” (NOMS & NHS, 2011b). The finding that the majority of the 48 extracted formulations were not of the level intended (as assessed by the researcher) therefore raises questions about the usefulness and practicability of these levels. Reasons for this finding may include that staff are not clear about the differences between each of the three levels, that the objective differences between the levels are ambiguous, or that it is challenging for staff to decide which level of formulation should be written for each case at which time. It may therefore be useful to conduct a further examination around this topic in order to determine the full value and practicality of using different formulation levels within the OPDP.

One factor that may have contributed to some of the issues discussed here (formulations scoring poorly in some important areas, formulations not being of the level intended) is that within over half of the formulations extracted (54%), it was mentioned by the author that potentially useful or important information about the case was unknown or unavailable at the time of writing. This may have had a detrimental impact on the ability of psychologists to suitably formulate the case at hand. A further investigation into this possibility is therefore recommended (i.e., how much do psychologists believe this issue impacts their performance, is missing information adequately searched for) in order to better clarify the findings discussed above.

3.4.2 Regression Analysis and Results

To recap, the final regression model indicated that ‘Number of Previous Treatments Completed’, ‘Prior AP Breach’ and Audit Tool Standard 3 were all significant predictors of

AP Outcome at the $p < .05$ level. Specifically, increases in the number of previous treatment interventions completed and increases in scores on Audit Tool Standard 3 were associated with significant *decreases* in the odds of an offender breaching within AP. Having a prior AP breach on record was instead associated with significant *increases* in the odds of an offender breaching within AP again.

Promisingly, these results are generally consistent with what an ‘accurate’ model might be expected to contain. For example, based on what is known about the likelihood of recidivism (Ministry of Justice, 2019b), it makes theoretical sense that offenders with a prior AP breach on record would be more likely to breach during their current AP residency than those offenders with no prior AP breach. Likewise, accredited offender behaviour programmes are designed and delivered with the aim of reducing recidivism (Ministry of Justice, 2019a). It therefore also makes theoretical sense that increases in the number of treatment programmes completed by an offender would be associated with a higher likelihood of them successfully moving on from AP. The logical nature of these results provides support for the validity of the model overall, indicating the additional finding (that increases in scores on Audit Tool Standard 3 are associated with increases in the likelihood of obtaining a positive AP outcome) is also likely to be legitimate.

Although Audit Tool Standard 3 was the only formulation-related variable found to significantly contribute to the prediction of AP outcomes within this analysis, the potential utility of this finding is substantial due to Audit Tool Standard 3 being very broad in its description (“The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour”). This suggests that there may be significant scope for OPDP staff to improve the quality of their formulations by better incorporating this feature if provided with training on how to do so. However, before any such training is delivered, this finding should be explored in more detail with the use of further (experimental) research

(Chapter 4, p. 153). Before conclusions can be made about the utility of the findings identified within the present study, the limitations of the study should be considered:

3.4.3 Limitations

The first limitation to note is that the analysis was based on a relatively small sample of OPDP formulations (48 in total). As previously described, the reason for this is that after applying the inclusion criteria to all available cases (Table 3), only a small number were found to be suitable. However, it is unlikely that the results of the analysis were markedly affected by this smaller sample size. This is firstly because the sample consisted of every eligible case on the Welsh OPDP caseload between 2016 and 2018. The results are therefore likely to be representative of the population of interest. Secondly, controlling for as many confounding factors as possible is likely to have led to a more accurate and clearer model. Finally, a liberal significance level was applied within the initial stages of the regression analysis to ensure that any potentially important variables were not eliminated due to low statistical power. However, it is also accepted that the smaller sample size may have resulted in some relevant predictors being eliminated during the analysis (e.g., by having to collapse the categories of several nominal variables which may have resulted in the loss of some important detail). To go some way in remedying this, a small supplementary study was later conducted (Study 1b, p. 134) to enrich the findings of this exploratory analysis and to better ensure that all potentially important predictors were retained for further examination within a subsequent quasi-experimental study (Study 2, p. 153).

A second limitation to note is that all 48 formulations within the sample were coded and rated by a single researcher. Therefore, it is not possible to evaluate this process by assessing inter-rater reliability. However, as discussed earlier, the formulations were rated as objectively and methodologically as possible, and the reasons behind the allocation of each

item score on the CFQC-R item and Audit Tool were systematically recorded. In addition to this, a small number of randomly selected formulations were re-scored at the end of the coding process to provide a measure of test-retest reliability. No large discrepancies were identified between the scores allocated at time 1 and time 2, indicating that the scores allocated by the researcher were suitably representative and remained stable over time.

An important point to re-iterate is that each formulation was rated on only eight out of the 10 items on the CFQC-R (see Table 5). The reason for this is that two of the items are dependent on the rater making a judgement about whether the formulation is based on relevant information (Factual Foundation) or if it ties together as much of the relevant information as possible (Completeness). However, it is likely that only the author of the formulation would know how much relevant information was available to them at the time of writing and how much of this information they incorporated into the formulation itself. Therefore, although a substantial effort was made by the researcher to rate each formulation as fairly and reliably as possible, there were some restrictions that impacted this process.

A third limitation of the study is that it was of a cross-sectional design, meaning that it was not possible to determine causation. As previously described, this is because the study was designed to be exploratory in nature, focusing on the generation of initial hypotheses and building a foundational understanding of which formulation components may be of particular importance. Therefore, although 'Number of Previous Treatments', 'Prior AP Breach' and Audit Tool Standard 3 were found to significantly contribute to the prediction of AP Outcome, they cannot be said to have *caused* these AP outcomes. For a cause-and-effect relationship to be established between formulation scores on Audit Tool Standard 3 and specific offender outcomes, subsequent experimental study is required (Study 2, p. 153). Therefore, although interesting, this finding should be viewed tentatively until it can be further verified.

Related to this point, a final limitation to note is that only one offender outcome was examined within this study (AP Outcome). This outcome was chosen due to the retrospective nature of the study; AP outcomes are routinely recorded by HMPSS, are easily definable, and are likely to be accurate due to increased monitoring of offenders within an AP setting. However, formulation is likely to have impact on a range of more *intermediate* outcomes, such as the OM's understanding of a case, the number and type of recommendations completed by an OM, or (as found by Shaw et al., 2017), the strength of staff-offender relationships. These intermediate outcomes may be what moderates the relationship between important formulation features and AP Outcome. For example, although formulation scores on Audit Tool Standard 3 were found to significantly contribute to the prediction of AP Outcome, these results do not explain *how* this is possible. It may be the case formulations scoring highly on Audit Tool Standard 3 are better understood by OMs, enabling them to manage the offender more effectively. This in turn may lead to increases in offender engagement which may eventually result in a positive AP Outcome for that offender.

To explore potential mechanisms such as this to better understand *how* formulations scoring highly on Audit Tool Standard 3 may positively impact offender outcomes, a subsequent quasi-experimental study was designed (Study 2, p. 153). This study involved the collection of intermediate formulation outcomes over time (i.e., OM understanding of the formulation, OM confidence in managing the case, perceptions of offender engagement) and was to explore how these intermediate outcomes may in turn influence 'main' pathway outcomes (i.e., reduced recidivism).

Despite the limitations discussed above, the present study has produced some useful and informative findings. First, it has explored how formulations are typically written within the OPDP and has identified some areas for general improvement. These findings could be fed back to psychologists working within the OPDP to ensure that future formulations are

better written in accordance with current best-practice guidelines. Second, the present study has fulfilled its main aim of creating a preliminary understanding of which formulation components may be associated with offender outcomes (and therefore which components may be necessary for achieving a ‘high-quality’ formulation). Specifically, the finding that Audit Tool Standard 3 was a significant predictor of AP Outcome even after accounting for a number of influential offender characteristics is promising, and therefore warrants further investigation. Consequently, this finding partially formed the basis of a subsequent quasi-experimental study (Study 2; p. 153).

To additionally gain a) a valuable *clinical* perspective of the importance of the formulation features and quality standards analysed within the present study and b) to ensure that all potentially important variables were retained for inclusion within the subsequent quasi-experimental study, a small ‘supplementary’ study (Study 1b) was conducted to enrich the findings of Study 1a. This supplementary study is described in depth below.

3.5 Study 1b – Introduction

As described within Study 1a, Stoltzfus (2011) states that within a logistic regression analysis “one must always justify variable selection using well-established theory, past research, clinical observations, preliminary statistical analysis, or some sensible combination of these different options” (p. 1100). Due to the lack of prior research or well-established theory within the area of forensic case formulation quality and offender outcomes, Study 1a used preliminary statistical analysis to select variables for entry into the final regression model. Although this study was able to identify one significant formulation-related predictor, (Audit Tool Standard 3), other methods of variable selection may have highlighted different or additional variables of interest.

To explore this point further and to ensure that all potentially important formulation

variables were retained for further examination within Study 2, the aim of the present study was to utilise a second method of variable selection recommended by Stoltzfus (clinical observations). To do this, psychologists and specialist OMs working within the OPDP were presented with a range of the formulation features and quality items analysed within Study 1a and were asked to rate how strongly they would expect each of these to be associated with offender outcomes. Staff members within these particular roles were targeted as they regularly write OPDP formulations and are often aware of developments and outcomes of these cases over time. These staff members are therefore those most likely to have a valuable and specialist insight into ‘what works’ within forensic case formulation.

The results of this study were expected to further facilitate the development of a fully comprehensive theoretical model containing all those formulation features identified to be important through both statistical analysis (Study 1a) and expert experience and observation (Study 1b). As described, the formulation features contained within this theoretical model were expected to form the basis of a subsequent quasi-experimental study (Study 2, p. 153) which aimed to further explore and validate their potential impact on offender outcomes.

3.6 Study 1b – Method

To facilitate the recruitment of required participants, the researcher attended a routine OPDP staff meeting attended by a number of psychologists and specialist OMs working within OPDP services across Wales. Prior to the meeting, the researcher requested and was granted a slot within this meeting to introduce the study and to invite attending staff members to take part. Attendees were firstly informed of the purpose of the study; to gain an insight into which formulation features OPDP staff would expect to be most strongly associated with offender outcomes. They were also informed that their responses would form part of a PhD thesis and would remain completely anonymous. All staff members within the meeting were

made aware that it was not a requirement to take part in the study, but that their participation would be appreciated and may aid understanding of how to improve formulation quality and outcomes in the future. Consent was then gained verbally; all attending staff members agreed that they were happy to take part.

Next, each participant was provided with a small booklet containing a selection of the formulation features and quality items analysed within study 1a (Appendix C). Participants were asked to rate how strongly they would expect each of these features and quality items to be associated with offender outcomes, from 1 (“I would not expect this feature/item to be associated with offender outcomes at all”) to 10 (“I would expect this feature/item to be very strongly associated with offender outcomes”). Participants were asked to complete the booklet alone and to base their ratings on their own personal experience and observations within practice. They were additionally advised to make use of the entire rating scale wherever possible (1 through 10) in order to avoid ceiling or floor effects. Participants were *not* informed of the results of Study 1a prior to completing the booklets to ensure that their responses would not be influenced by this information. All participants completed the booklet within the team meeting, which took around 10 minutes. All booklets were then collected by the meeting leader and handed back to the researcher.

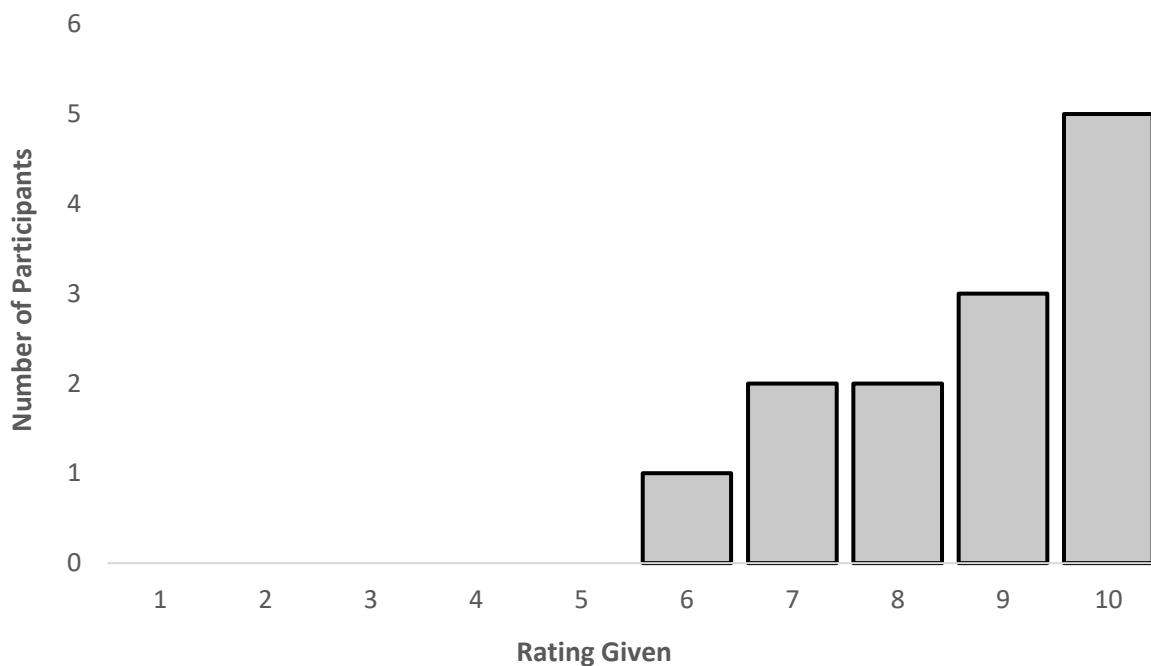
3.7 Study 1b - Results

A total of 13 OPDP staff took part in the study, including a number of psychologists, specialist OMs, two mental health nurses, and a project manager. All were experienced in writing or working with OPDP formulations. The data from the booklets completed by these participants was inputted and analysed using IBM SPSS Statistics Version 25. Descriptive statistics were then performed, revealing that the ratings allocated to many of the formulation features and quality items were not normally distributed overall, as participants tended to

favour the top end of the scale (see Figure 7 for an example). For this reason, the median and interquartile range (IQR) of each variable was calculated to provide the best representation of the data and to facilitate fair comparison across variables.

Figure 7

An Example of the Abnormal Distribution of Ratings Allocated by Staff to Some of the Formulation Features/Items



Note. Table shows ratings for CFQC-R Predictive⁴⁰ (1 = “I would not expect this feature to be associated with offender outcomes at all”, 10 = “I would expect this feature to be very strongly associated with offender outcomes”).

Of the 35 formulation features and quality items rated by staff, 29 of them were found to have median ratings above halfway (>5) on the scale provided. This could indicate either that OPDP staff believe many formulation features and quality items to be strongly associated

⁴⁰ CFQC-R Predictive: “The formulation goes beyond description, statement of facts, or classification to make detailed and testable predictions. The key predictions are those about which strategies will be most effective in treating and managing harmful behaviour”.

with offender outcomes, or that staff are uncertain as to which features and quality items are most important. This finding further highlights the ambiguity around ‘what works’ within forensic case formulation. Table 18 provides an overview of the median rating allocated to each formulation feature and quality item by participants.

Due to the large number of features and quality items rated highly by participants, only those with the highest medians (≥ 9) and lowest IQRs (≤ 2) were selected for further consideration. This was to ensure that any variable selected for further examination within the quasi-experimental study (Study 2, p. 153) would be unanimously believed by OPDP staff to be strongly associated with offender outcomes. It was anticipated that this decision would increase the accuracy and precision of any results obtained within Study 2. The use of this stringent inclusion criteria initially resulted in the retention of seven items; CFQC-R Predictive, CFQC-R Action Oriented, Audit Tool Standard 4b, Audit Tool Standard 4c, Audit Tool Standard 5, Audit Tool Standard 6a and Audit Tool Standard 6b (items retained for further consideration are outlined and highlighted in green within Table 18).

Table 18

The Median and IQR of Ratings Allocated to each Formulation Feature/Item by Participants Within Study 1b

Item	Description	Median Rating Allocated by Participants (out of 10)	IQR of Ratings
Audit Tool Standard 1	“The formulation states clearly what it is seeking to explain (i.e., case, problem/risk and which one specifically) and why (i.e., what is the purpose of this formulation)”	8	4
Audit Tool Standard 2	“The formulation includes an indication of the range, depth and quality of the evidence on which it is based”	4	4
Audit Tool Standard 3	“The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour”	9	3
Audit Tool Standard 4a	“The formulation organises information relevant to the purpose of the formulation (such as information about attitudes and beliefs, relationships with others, attachments, other situational, social and cultural factors)”	7	2
Audit Tool Standard 4b	“The formulation provides a balanced view about areas of vulnerability and areas of strength, including protective factors”	9	2
Audit Tool Standard 4c	“The formulation connects pieces of information about the person or the problem/risk in order to create an explanation for the case or the risk/problem under scrutiny”	9	2

Table 18 Continued

Item	Description	Median Rating	
		Allocated by Participants (out of 10)	IQR of Ratings
Audit Tool Standard 5	“The formulation provides a rational basis for decisions about interventions and management and how they should be prioritised”	9	2
Audit Tool Standard 6a	“The formulation is expressed in language accessible and appropriate to all those for whom it is intended, and brief enough to be read easily”	9	2
Audit Tool Standard 6b	“The formulation is meaningful, provides a coherent explanation of the case or problem/risk, and adds to what is already known about the service user”	9	2
CFQC-R Narrative	“The formulation is presented in everyday language that tells a coherent, ordered, and meaningful story”	8	2
CFQC-R External Coherence	“The formulation is explicitly consistent with an empirically supported theory”	8	5
CFQC-R Factual Foundation⁴¹	“The formulation is based on relevant information about the case that is adequate in terms of quantity and quality”	7	3
CFQC-R Internal Coherence	“The formulation rests on propositions or makes assumptions that are compatible or non-contradictory”	7	2

⁴¹ Although the extracted formulations could not be rated on this item within Study 1a due to a lack of sufficient information, it was deemed important to gain an understanding of how strongly staff believe this item to be associated with offender outcomes.

Table 18 Continued

Item	Description	Median Rating	
		Allocated by Participants (out of 10)	IQR of Ratings
CFQC-R Completeness³⁹	“The formulation has a plot that ties together as much of the relevant information as possible”	7.5	2
CFQC-R Events Over Time	“The formulation ties together information about the past, present, and future of the case”	8	2
CFQC-R Simplicity	“The formulation is free from unnecessary details”	8	3
CFQC-R Predictive	“The formulation goes beyond description, statement of facts, or classification to make detailed and testable predictions. The key predictions are those about which strategies will be most effective in treating and managing harmful behaviour”	9	2
CFQC-R Action Oriented	“The formulation prioritises and plans treatments”	9	1
CFQC-R Overall Quality	“The formulation is comprehensive, logical, coherent, focused, and informative”	8	2
Style/Format	The style of the formulation (e.g., narrative/diagrammatic/mixed)	5	3
Model/Theory	The psychological model or theory used (CAT, schema, attachment theory etc)	6	5

Table 18 Continued

Item	Description	Median Rating Allocated by Participants (out of 10)	IQR of Ratings
Formulation Level	Whether the formulation is of the level intended (e.g., does a level 2 formulation adhere to level 2 guidelines)	5	4
Formulation Structure	The structure of the formulation (e.g., structured around the 5Ps)	5	3
Number of Recommendations	The number of recommendations made within the formulation	6	6
Type of Recommendations	The type of recommendations made within the formulation (i.e., treatment recommendations, management strategies, further information requests)	9	3
Certainty of Recommendations	The certainty of the recommendations made within the formulation (i.e., are they firm or potential)	6	3
Formulation Length	The total length of the formulation	5	3
Presenting Problems Length	The length of the problems/difficulties information	6	4
Predisposing Length	The length of the predisposing factors information	6	1

Table 18 Continued

Item	Description	Median Rating Allocated by Participants (out of 10)	IQR of Ratings
Precipitating Length	The length of the precipitating/triggering factors information	6	2
Perpetuating Length	The length of the perpetuating/maintaining factors information	7	4
Protective Length	The length of the protective factors information	7	4
Inferred Mechanism Length	The length of the inferred mechanism section	6	3
Recommendations Length	The length of the recommendations section	7	5
Other Information Length	The length of ‘other’ information which does not fit into any other category	4	3

Note: 1 = “I would not expect this feature/item to be associated with offender outcomes at all”, 10 = “I would expect this feature/item to be very strongly associated with offender outcomes”. Variables highlighted in red are those rated most poorly by participants (median ≤ 5). Variables outlined and highlighted in green are those rated highly by all participants (median ≥ 9 , IQR ≤ 2). Participants were shown descriptions of each of these items in the booklet provided; variable names have been used here for conciseness.

Interestingly, the only formulation variable found to significantly contribute to the prediction of AP outcomes within study 1a (Audit Tool Standard 3) was *not* amongst those features rated most highly by staff, indicating that staff do not unanimously believe this formulation feature to be strongly associated with offender outcomes. Inversely, five of the seven formulation features that *were* rated most highly by staff dropped out of the regression analysis performed within Study 1a very early, as they provided no significant contribution to the prediction of AP outcomes even within preliminary regression models (CFQC-R Predictive, CFQC-R Action Oriented, Audit Tool Standard 5, Audit Tool Standard 6a, Audit Tool Standard 6b). This suggests that there is a large divide between the formulation features that OPDP staff believe to be important (clinical observation) and the formulation features determined to be important (to a specific outcome) within Study 1a (statistical analysis).

The remaining two formulation features rated highly by all staff (Audit Tool Standard 4b and Audit Tool Standard 4c), however, dropped out during the *latter* stages of the regression analysis performed within Study 1a⁴². This suggests that there is at least some support for their value both clinically *and* statistically, setting them apart from the other features rated highly by staff. These two particular features were therefore examined in more detail to determine their suitability for inclusion within Study 2 alongside Audit Tool Standard 3.

3.7.1 Audit Tool Standard 4c

To further determine the suitability of Audit Tool Standard 4c for inclusion into Study 2, the results of Study 1a were revisited. Initially, this involved re-examining the preliminary regression model containing all variables within the ‘Audit Tool’ block (Table 11), as this

⁴² Both of these variables were found to be significant within preliminary regression analyses (See Table 11) and were entered into the final regression analysis. They however did not retain significance at this stage and were removed from the model.

model had previously identified Audit Tool Standard 4c as being a significant predictor of AP Outcome. However, this model indicated that Audit Tool Standard 4c may be associated with AP Outcome in a different manner than expected (higher scores on Audit Tool Standard 4c were found to be significantly associated with *increased* odds of an offender breaching within AP). To explore this result in more detail, Audit Tool Standard 4c was placed into a univariate regression model with AP Outcome. The results of this univariate model unexpectedly indicated that Audit Tool Standard 4c had a *non-significant* relationship with AP Outcome ($p = .94$). The possible reasons for this were explored before it was determined that Audit Tool Standard 4c was likely to be a ‘suppressor variable’. Suppressor variables are able to significantly improve the fit of a multivariate regression model without being associated with the outcome variable; the suppressor does this by increasing the predictive ability of another variable within the model with which it is highly correlated (Lancaster, 1999).

To confirm this, a correlation matrix was calculated containing the three significant variables in the Audit Tool preliminary model (Table 11). Audit Tool Standard 4c was found to be significantly correlated with Audit Tool Standard 3 ($r = .78$), further confirming its status as a suppressor variable⁴³. Due to it not being significantly associated with AP Outcome, Audit Tool Standard 4c was determined as unsuitable for inclusion within Study 2.

⁴³ This significant correlation is likely due to a certain amount of conceptual overlap between Audit Tool Standard 3 and Audit Tool Standard 4c. Audit Tool Standard 3 is concerned with outlining the developmental history of the case and patterns of problem behaviour, with the scoring guidance for this item stating that the formulation should “*highlight* the salient psychological events” in order to achieve a high score. Audit Tool Standard 4c is primarily concerned with whether the formulation *connects* these pieces of information together to create an overarching psychological explanation of the case.

3.7.2 Audit Tool Standard 4b

The above process⁴⁴ was repeated for Audit Tool Standard 4b to determine its suitability for inclusion within Study 2. When re-examining the Audit Tool preliminary regression model calculated within Study 1a (Table 11), it was confirmed that higher scores on Audit Tool 4b were found to be significantly associated with *decreased* odds of an offender breaching within AP. In addition, a univariate regression analysis confirmed that Audit Tool Standard 4b was a significant predictor of AP Outcome ($p = .03$). Finally, Audit Tool Standard 4b was identified as being the last variable to drop out of the final regression analysis within Study 1a before the model was finalised⁴⁵. This evidence (in addition to the fact that it was one of the features rated most highly by staff) resulted in Audit Tool Standard 4b being retained alongside Audit Tool Standard 3 to form the basis of Study 2. The main aim of Study 2 was to further examine whether these features are able to influence offender outcomes, and if so, *how* they are able to do this (i.e., the mechanism behind this).

3.8 Study 1b – Discussion

3.8.1.1 General Discussion of Findings

The results of this study indicate that OPDP staff believe many formulation features to be strongly associated with offender outcomes. The seven items rated most highly were part of either the CFQC-R (McMurrin & Bruford, 2016) or the Audit Tool (NOMS & NHS, 2015b), suggesting that staff believe these quality tools to have at least some predictive validity.

Interestingly, none of the items rated most highly by staff were found to be significant

⁴⁴ This involved re-examining the results of the Audit Tool preliminary regression model (Table 11) and performing a univariate analysis.

⁴⁵ As a reminder, variables within this final regression analysis were systematically removed based on the significance of their contribution to model fit.

predictors of AP Outcome within Study 1a. This suggests that there is a divide between the formulation features that clinical staff believe to be important, and the formulation features that are determined to be statistically important (at least to the specific outcome examined within Study 1a). This re-confirms the need for research on this topic, as there is much uncertainty around what a formulation ‘should’ contain for it to be of high quality and for it to potentially have a positive impact on outcomes. This divide also highlights the value of using more than one method of variable selection, as the use of clinical observation in addition to statistical analysis has provided a broader picture of which features may be most important.

An additional observation to note is that the extracted formulations within Study 1a performed poorly on five of the seven items rated by staff to be most strongly associated with offender outcomes (on average, the extracted formulations scored 5/10 on CFQC-R Action Oriented, 4/10 on CFQC-R Predictive, and 2/10 on Audit Tool Standard 4b, Audit Tool Standard 4c and Audit Tool Standard 6b). This suggests that although staff believe these formulation features to be highly associated with offender outcomes, these items are not typically incorporated into OPDP formulations to a high standard. This might suggest that staff need further training to ensure they can successfully incorporate these features into their formulations⁴⁶. However, an alternative explanation for these results is that (as discussed earlier) formulations within the OPDP are written primarily for OMs to gain an understanding of how to best *manage* offenders, and so do not often focus on areas such as ‘planning and prioritising treatment’ (CFQC-R Action Oriented). The finding that OPDP staff rated items such as CFQC-F Action Oriented very highly however suggests that these staff members believe that OPDP formulations should have more of a focus on treatment than they do currently.

⁴⁶ The topic of staff training is explored further within Chapter 5, p. 243.

Another interesting finding resulting from this study is that one of the very few items rated poorly by staff was ‘Level of Formulation’ (i.e., “is the formulation of the level it was intended to be?”), suggesting that staff did *not* believe this to be a factor strongly associated with offender outcomes. This may explain why many of the extracted formulations within Study 1a were found not to adhere to the guidance on level 2 formulations when assessed by the researcher. Reasons for this result could include that staff do not believe formulation levels to be necessary, or may not fully understand the differences between each level. This finding therefore further supports the earlier suggestion that the use of formulation levels within the OPDP should be further investigated to determine their utility and value.

As previously discussed, the decision to additionally retain Audit Tool Standard 4b for inclusion within Study 2 was made for a number of reasons (i.e., its potential importance was supported by both clinical observation and statistical analysis). However, it also makes clinical sense that Audit Tool Standard 4b would be flagged as being potentially important by both OPDP staff and statistical analysis. This is because Audit Tool Standard 4b is concerned with measuring how well a formulation identifies and explores an offender’s areas of *strength* as well as their areas of vulnerability. Protective factors have become a major focus within the offending literature in recent years, with the consensus being that the presence of protective factors may be just as important for reducing recidivism as the absence of risk factors (e.g. de Vries Robbè, 2014; HMPPS, 2019; Ward & McDonald, 2017). Therefore, the decision to retain this item for further analysis alongside Audit Tool Standard 3 is believed to be both logical and justifiable.

3.8.1.2 Strengths

As previously described, staff were recruited into the study via opportunity sampling during their attendance at a routine OPDP team meeting. All staff who attended this meeting

took part in the study fully, meaning that no bias was introduced by participant self-selection. This also means that the results obtained from the study reflect the views of a range of OPDP staff working within a variety of different roles across a variety of different teams. The conclusions made by this study are therefore likely to be representative of the views held by the wider OPDP workforce.

Secondly, staff were asked to complete the study individually and were informed of the anonymity of their responses. These instructions were delivered to ensure that staff felt comfortable providing ratings which reflected their genuine views about the strength of associations between formulation features and offender outcomes. This is likely to have maximised the accuracy of results by reducing any effect of response bias.

A third strength of the study is that it was able to somewhat counteract one of the limitations of Study 1a; that it was not possible to rate the extracted formulations on two of the 10 CFQC-R items due to insufficient information. These two items were presented to staff within the current study but were not amongst those rated most highly by them. This suggests that these items would not have been retained for inclusion within Study 2 unless they had been found to be highly significant within Study 1a and retained within the final regression model alongside Audit Tool Standard 3. Although possible, this indicates that there is only a small chance that the inclusion of either of these items within Study 1a would have made a difference to the final results.

3.8.1.3 Limitations

The first limitation of the study relates to the finding that five out of the seven items rated most highly by staff were Audit Tool standards (Audit Tool Standard 4b, Audit Tool Standard 4c, Audit Tool Standard 5, Audit Tool Standard 6a, Audit Tool Standard 6b). As discussed earlier within this chapter, the Audit Tool was constructed specifically for use

within the OPDP, meaning that many OPDP staff are familiar with it. It is therefore possible that staff were biased towards the Audit Tool items presented to them, rating these items highly due to their familiarity with them or due to believing that these items must have already been validated on account of already having used them within practice. A consequence of this is that staff may have rated non-Audit Tool items more poorly than they would have if the Audit Tool items had not been present.

A second limitation of the study is that not every variable analysed within Study 1a was included within Study 1b. The reason for this was to facilitate the completion of the study within the staff team meeting, during which only a short amount of time was available. Staff were instead shown a ‘core’ subsection of formulation features, which represented those that the researcher believed staff would be most familiar with (this included all items within the CFQC-R and Audit Tool, plus 16 additional features; please see Appendix C and/or Table 18 for the full list of formulation features rated by staff). Therefore, it is possible that staff would have rated additional items highly if these had been shown to them. However, with the exception of the variable ‘Inferred Mechanism Bullet⁴⁷’, it would not have been possible for these omitted formulation features to be retained for inclusion into Study 2 even if they had been seen and rated highly by staff. This is because (with the exception of ‘Inferred Mechanism Bullet’) all formulation features found to have at least some potential statistical importance within Study 1a (i.e., those that were entered into the final regression analysis) *were* seen and rated by staff. To compensate for this issue however, it was planned that *all* formulation features would again be coded, rated, and analysed within Study 2 to ensure that no potentially important findings are overlooked (although Audit Tool Standard 3 and Audit Tool Standard 4b would remain the only features to be quasi-experimentally manipulated).

⁴⁷ This was a nominal variable which indicated whether the ‘Inferred Mechanism’ section of each formulation was presented in bullet point form or not (Yes/No). this was the second variable to drop out of the final regression analysis within Study 1a, suggesting that even if it were to have been rated very highly by staff, it would have been unlikely to be retained for further examination within Study 2.

Although it is accepted that conducting the study within the team meeting may have led to some drawbacks, the benefits of doing so are believed to outweigh these drawbacks. This is firstly because conducting the study within the team meeting is likely to have increased participation rates due to staff being readily available to take part (recruiting staff at other times is likely to have been problematic due to their high workloads). Participation rates are also likely to have been increased by staff being properly assured of the merits of the study owing to it being conducted within an official OPDP meeting. Furthermore, staff were able to ask questions about the study during their participation which may have reduced the likelihood of missing data or other errors.

A final limitation to note is that although all staff who were asked to take part in the study did so, the sample size was still relatively small (13 staff in total), as it was solely dependent on meeting attendance. However, this meeting was attended by staff members working within a number of OPDP services across Wales, indicating that it was still the most viable and accessible environment to recruit from, despite the limitations highlighted. In addition, even with this small sample size, there were a number of items identified as clearly important to all staff who took part, and the results obtained were indispensable in planning the subsequent quasi-experimental study. Therefore, Study 1b was able to fulfil its intended purpose of enriching, supporting, and expanding the findings of Study 1a by incorporating an alternative method of variable selection.

3.9 Study 1a and Study 1b – Combined Discussion

Although these studies were exploratory in nature and were conducted on a small scale, together they create a strong justification for the further examination of the two formulation features identified as being of importance from a statistical and clinical perspective (Audit

Tool Standard 3⁴⁸ and Audit Tool Standard 4b⁴⁹ respectively). These two features therefore formed the basis of the subsequent quasi-experimental study (Study 2, p. 153), which aimed to determine *if* they are able to impact offender outcomes, and if so, *how* they are able to do this.

The combined results of these two studies (along with those that may be identified by the quasi-experimental study) have implications for how OPDP formulations are written in the future. For example, if it is confirmed that formulations which include certain features to a proficient standard result in more positive outcomes, this will provide rationale for the construction of a fully evidenced quality tool (or the possible enhancement of the Audit Tool). This tool could be used to direct the focus of staff training, better ensuring that each staff member is capable of writing formulations of objectively high quality, which are potentially more likely to contribute to positive outcomes. The implementation of these findings may also better ensure that OPDP formulations more fully adhere to the principal of evidence-based practice.

⁴⁸ “The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour”.

⁴⁹ “The formulation provides a balanced view about areas of vulnerability *and* areas of strength, including protective factors”.

Chapter 4: Investigating the Outcomes of Forensic Case Formulation

4.1 Study 2 Introduction

As previously described, the main aim of Study 2 was to build upon the results of Study 1a and Study 1b to understand *if* and *how* formulations scoring highly on Audit Tool Standard 3 (“The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour”) and/or Audit Tool Standard 4b (“The formulation provides a balanced view about areas of vulnerability *and* areas of strength, including protective factors”) are better able to positively impact offender outcomes. To do this, a quasi-experimental study involving the active participation of both OPDP psychologists and offender managers (OMs) was designed and launched. However, this study had to be halted in its infancy due to the outbreak of COVID-19 in March 2020⁵⁰. The present chapter will therefore be used to describe the design of the study, to briefly explore the data that was collected before the study was halted, and to provide an example of how the full dataset was to be analysed. To do this, the present chapter will be split into two sections. The first will contain a comprehensive research plan detailing how the full study was to be conducted. The second part of the chapter will contain a brief analysis and interpretation of the small amount of data that was collected prior to March 2020, forming an insightful pilot study. It is hoped that together, these two sections will form a comprehensive ‘template’ which can be utilised in future (post-COVID-19) to replicate and further proceed with the study.

⁵⁰ HMPPS National Research Committee requested that all primary research be ceased due to the additional workload faced by staff in response to COVID-19.

4.2 Part 1: Research Plan

4.2.1 Study Overview

To understand *if* and *how* formulations scoring highly on Audit Tool Standard 3 and/or Audit Tool Standard 4b are better able to positively impact offender outcomes, approximately 400 formulations written by recruited OPDP psychologists within routine practice will be obtained⁵¹. These formulations will then be scored by the researcher on Audit Tool Standard 3 and Audit Tool Standard 4b before being allocated into one of four formulation conditions based on these scores (more detail about these conditions will be provided later). The ‘final’⁵² case outcomes of these 400 offenders will then be statistically compared across the four formulation conditions to identify any significant differences between them. Final case outcomes will be obtained from official sources six months post-formulation and will include ‘Reoffending Frequency’, ‘Reoffending Severity’ and ‘Change in Risk Level’.

If these final case outcomes *are* found to significantly differ between the four formulation conditions, the study will then aim to investigate the mechanism by which this occurs (i.e. *how* formulations with certain scores on Audit Tool Standard 3 and/or Audit Tool Standard 4b are able to impact final case outcomes). For example, a hypothesised mechanism is that formulations scoring highly on these two standards are better understood by offender managers (OMs), resulting in OMs managing these cases more confidently; this change in confidence may then lead to an increase in offender compliance, eventually resulting in more positive final case outcomes for these offenders.

To better explore potential mechanisms, a range of ‘intermediate’ case outcomes will

⁵¹ Calculation of this sample size is provided on p. 161.

⁵² These case outcomes are described as ‘final’ as they will be collected at the end of the study period. However, further change in case outcomes may occur after this point.

also be collected at four different time points throughout the study (e.g., ‘OM Understanding of the Formulation’, ‘OM Confidence in Managing the Case’, ‘Offender Compliance with Pathway Plan’). These outcomes will be recorded by the OM of each case via a series of online surveys.

4.2.1.1 Main Research Questions

1. Are there any differences in the final case outcomes of offenders with formulations scoring highly versus poorly on Audit Tool Standard 3 and/or Audit Tool Standard 4b?
2. If offenders with formulations scoring highly on Audit Tool Standard 3 and/or Audit Tool Standard 4b *are* found to have more positive final case outcomes than offenders with formulations scoring poorly, what are the possible mechanisms underpinning this?
3. Which of these two Audit Tool standards have the largest impact on outcomes? (i.e., which of these standards is most important to incorporate to a proficient standard within a forensic case formulation?).

4.2.2 Method

Ethical approval will be obtained from both HMPPS National Research Committee and Swansea University Research Ethics Committee before the study begins.

4.2.2.1 Participants

Psychologists. To produce the 400 formulations required⁵³, a range of OPDP psychologists will be recruited. Eligible psychologists will be defined as those currently responsible for writing OPDP formulations of at least level 2. To reiterate, three different levels of formulation are written within the OPDP, which vary in their complexity. Level 2

⁵³ Calculation of this sample size is provided on p. 161.

formulations are typically those of moderate complexity, whereas level 3 formulations are often reserved for the most complex cases. Level 1 formulations will not be examined within the current study as they are often very brief and are likely to prove difficult to accurately score on both Audit Tool Standard 3 and Audit Tool Standard 4b⁵⁴.

Wales. Due to ease of access, psychologists will initially be recruited from Welsh OPDP services. To recruit these psychologists, the researcher will deliver a short PowerPoint presentation within a routine staff meeting typically attended by a range of psychologists and other specialist OPDP staff. Psychologists will briefly be informed of the nature and purpose of the study before being asked to consider their participation. However, to ensure they do not feel pressured to consent whilst in the presence of the researcher, psychologists will be informed that they will receive an official study invitation via e-mail.

Two days after this meeting, each psychologist will be e-mailed a copy of the PowerPoint presentation delivered within the meeting. This e-mail will also include a participant information sheet (Appendix D) and a participant consent form (Appendix E). All required e-mail addresses will be provided to the researcher by the Wales OPDP Research and Evaluation Officer.

England. To ensure that the required number of formulations can be produced within the study period, there is likely to be an additional need to recruit psychologists from OPDP teams outside of Wales. In this instance, the OPDP National Research Lead will be asked to identify any OPDP teams in England who may be available to take part in the study. After the researcher contacts the relevant teams, psychologists within these teams will be recruited using the same method used to recruit psychologists within Wales.

⁵⁴ In support of this decision, the Case and Risk Formulation Self-Auditing Tool (Audit Tool, NHS & NOMS, 2015b), indicates that only level 2 and 3 formulations (not level 1) are appropriate to score on Audit Tool Standard 4b.

Offender Managers. As described within the study overview, the role of offender managers (OMs) will be to record a range of intermediate case outcomes at four time points throughout the study period via a series of online surveys. Several OPDP staff members have advised the researcher that these OMs may be most likely to take part in the research if they are directly invited by a psychologist. Based on this recommendation, recruited psychologists will be asked to provide a study invitation to each OM who attends a routine case consultation meeting during the study period. As described within Chapter 1, case consultation meetings are typically requested by an OM when they wish to discuss a complex case with a psychologist. The aim of these meetings is usually to identify methods that may be most effective in managing or making progress with the offender discussed. The content of each case consultation meeting usually forms the base of the written case formulation, which is produced by the psychologist and passed onto the OM a few weeks after the consultation meeting.

At the end of each of case consultation meeting (if it is expected to result in a level 2 or level 3 formulation), recruited psychologists will therefore be asked to provide the OM with a brief verbal description of the study (Appendix F). If interested, OMs will then be asked by the psychologist to read an electronic information sheet (Appendix G) and to complete an electronic consent form (Appendix H).

4.2.2.2 Design

Independent Variables.

Formulation Type. As described within Chapter 3, Audit Tool Standard 3 and Audit Tool Standard 4b form part of the Case and Risk Formulation Self-Auditing Tool (Audit Tool; NOMS & NHS, 2015b). Although currently unvalidated, this tool is commonly used by OPDP staff when writing forensic case formulations (as later confirmed within Study 4, p.

253). Each of the standards on the Audit Tool is rated from 0 - 'Not Present' to 4 - 'Excellent', although a slightly different combination of standards apply to each level of formulation⁵⁵.

As previously described, the researcher will use the Audit Tool to rate each of the 400 formulations on both Audit Tool Standard 3 and Audit Tool Standard 4b. Following this, each formulation will be allocated into one of four conditions based on these scores:

- Condition 1: Formulations which score highly (≥ 3) on both Audit Tool Standard 3 and Audit Tool Standard 4b (H³-H^{4b} Formulations).
- Condition 2: Formulations which score highly (≥ 3) on Audit Tool Standard 3 but poorly (≤ 2) on Audit Tool Standard 4b (H³-P^{4b} Formulations).
- Condition 3: Formulations which score poorly (≤ 2) on Audit Tool Standard 3 but highly (≥ 3) on Audit Tool Standard 4b (P³-H^{4b} Formulations).
- Condition 4: Formulations which score poorly (≤ 2) on both Audit Tool Standard 3 and Audit Tool Standard 4b (P³-P^{4b} Formulations).

This will create a between-groups independent variable with four levels, named 'Formulation Type'. Data analysis will then be performed to investigate whether final and/or intermediate case outcomes significantly differ across these four levels of Formulation Type⁵⁶.

Consideration of Equal Groupings. To ensure that a roughly equal number of formulations are allocated to each of these four conditions (to facilitate data analysis), the

⁵⁵ As previously described, Audit Tool Standard 3 and Audit Tool Standard 4b are applicable both to level 2 and 3 formulations.

⁵⁶ The researcher will also assess each formulation using the same methods as within Study 1a; this will involve scoring each formulation against the full Case and Risk Formulation Self-Auditing Tool (NOMS & NHS, 2015b; Table 6), the Case Formulation Quality Checklist-Revised (McMurrin & Bruford; Table 5), and the coding framework developed by the researcher (Table 4). The purpose of this will be to further verify the findings of Study 1a, which identified that no other formulation features or standards (aside from Audit Tool Standard 3 and potentially Audit Tool Standard 4b) could significantly contribute to the prediction of offender (AP) outcomes. However, to reiterate, Audit Tool Standard 3 and Audit Tool Standard 4b will be the main focus of the present study and are the only two variables that will be quasi-experimentally manipulated.

study will implement a quasi-experimental design. Quasi-experimental designs involve the manipulation of an independent variable/s, but do not involve randomly allocating participants into conditions (Cook & Campbell, 1979).

To do this, all recruited psychologists will initially be asked to formulate as normal. The first 200 formulations produced will then be scored by the researcher on both Audit Tool Standard 3 and Audit Tool Standard 4b before being allocated into one of the four formulation conditions based on these scores. After this, the number of formulations allocated into each condition will be reviewed. It is expected that there will be adequate variation in these scores to adequately populate each formulation condition, as scores on these standards were found to vary widely when examined within Study 1a (Figure 3, p. 97). However, if one condition is found to contain a much smaller number of formulations than the others, several selected psychologists will then be provided with targeted training on how to best incorporate the standard/s required (i.e., if the number of formulations in Condition 2 (H³-P^{4b} Formulations) is found to be small, several psychologists who do not normally write formulations scoring highly on Audit Tool Standard 3 will be provided with training on how to better incorporate this standard). The use of this method will increase the likelihood of each of condition containing a roughly equal number of formulations by the end of the study, facilitating smoother data analysis. It is not expected that Condition 4 (P³-P^{4b} Formulations) will contain too few formulations, as the 48 extracted formulations within Study 1a were found to score an average of 2.5/4 on Audit Tool Standard 3, and 2/4 on Audit Tool Standard 4b (Figure 3, p. 97). Therefore, psychologists will never be asked to try to write formulations of a *poorer* standard than usual (only a better standard than usual), as this would have clear ethical implications.

A fully randomised study design was considered but was not selected for several reasons. This design would have involved randomly allocating psychologists equally into the

four formulation conditions before immediately providing all psychologists (aside from those allocated to Condition 4: P³-P^{4b} Formulations) with training on how to best incorporate the Audit Tool standard/s required. However, with the use of this method it would have been likely for some psychologists who normally write formulations which score highly on Audit Tool Standard 3 and/or Audit Tool Standard 4b to have been randomly allocated into Condition 4 (P³-P^{4b} Formulations). This may have raised ethical concerns regarding whether it is appropriate to ask psychologists to intentionally write formulations of a poorer standard than usual. In addition, the need for an initial training period in a randomised design such as this would have made it necessary for the researcher to immediately disclose one or both of the Audit Tool standard/s of interest to psychologists. This may have caused psychologists to alter their formulations in unintended ways (such as putting less focus on other standards).

By using a quasi-experimental design, these issues will largely be negated as the majority of formulations will be written as normal with no researcher influence.

Time Point. As previously described, if final case outcomes *are* found to significantly differ between the four formulation conditions, the study will then investigate the mechanism underpinning this (i.e., *how* formulations with certain scores on Audit Tool Standard 3 and/or Audit Tool Standard 4b are able to impact final case outcomes). To do this, a range of intermediate case outcomes will be collected (i.e., ‘OM Understanding of the Formulation’, ‘OM Confidence in Managing the Case’, ‘Offender Compliance with Pathway Plan’). These intermediate outcomes will be recorded by the OM of each case at four time points throughout the study, via a series of online surveys:

- Time Point 1 (Survey 1): Completed by the OM at the end of the case consultation meeting (i.e., before the formulation is written).
- Time Point 2 (Survey 2): Completed by the OM as soon as possible after reading the written formulation.

- Time Point 3 (Survey 3): Completed by the OM one month after reading the written formulation.
- Time Point 4 (Survey 4): Completed by the OM three months after reading the written formulation.

This will create a within-groups independent variable with four levels, named ‘Time Point’. There are a number of reasons for measuring these intermediate outcomes at multiple time points throughout the study. Firstly, if these intermediate outcomes are found to differ depending on Formulation Type, this ‘Time Point’ variable will make it possible to analyse at which point these significant differences first emerged (i.e., immediately after reading the formulation, three months post-formulation), and whether these differences remained stable over time (i.e., whether differences existed immediately after reading the formulation but not one-month post-formulation). Secondly, this ‘Time Point’ variable will enable the researcher to understand how these intermediate outcomes may have impacted *each other* over time (e.g. OMs with the highest understanding of the formulation at Time Point 2 may have actioned the most recommendations made within the formulation by Time Point 3).

This will create a fuller understanding of the mechanism by which formulations with certain scores on Audit Tool Standard 3 and/or Audit Tool Standard 4b may impact final case outcomes. Alternatively, if final case outcomes are *not* found to significantly differ depending on these Audit Tool scores, the measurement of these intermediate case outcomes over time will provide further context as to why this might be, and what changes could be implemented in order to increase the impact of formulation in future.

Calculation of Sample Size. A priori power analysis was conducted with the use of G*Power (MANOVA Special Effects and Interactions, Erdfelder et al., 1996) to determine the required sample size of formulations needed to detect a significant (≤ 0.05) moderate effect ($f^2 = 0.0625$) between four independent group means (formulation conditions) over four

time points (surveys) with 80% power. The results of this power analysis indicated that 254 formulations would be needed to detect this type of effect. However, to successfully perform the follow-up analyses that may be required⁵⁷ to interpret the results of this main analysis (i.e., pairwise comparisons), a further calculation was performed in G*Power alongside guidance published by Wuensch (2020). It was discovered that to successfully perform 60 pairwise comparisons (comparing four levels of the independent variable (formulation conditions) across 10 dependent variables (intermediate outcomes)), 364 formulations would be required to detect a significant (≤ 0.001 ⁵⁸) moderate effect ($f = 0.25$) with 80% power. To safeguard against any potential data issues (i.e., OM dropout), the total number of formulations sought for the study was raised to 400 (100 in each of the four formulation conditions).

Dependent Variables.

Intermediate Outcomes. As previously described, a range of intermediate outcomes will be recorded by OMs throughout the study period. Descriptions of these intermediate outcomes can be viewed in Table 19.

Final Case Outcomes. Within Study 1a, one ‘final’ case outcome was analysed (AP Outcome). To recap, the results of this previous exploratory study indicated that scores on Audit Tool Standard 3 significantly contributed to the prediction of AP Outcome. Though not a significant predictor within the final regression model, Audit Tool Standard 4b was the last variable to drop out of the regression model before it was finalised, suggesting that it also may contribute to the prediction of AP outcomes⁵⁹. To broaden these results and to further

⁵⁷ Described in the ‘analysis’ section of the present chapter on pages 177-181.

⁵⁸ After Bonferroni adjustment.

⁵⁹ Audit Tool Standard 4b was also one of the variables rated by OPDP staff within Study 1b to be most strongly associated with offender outcomes.

explore the possible impact of these two Audit Tool standards, the current study will aim to measure a wider range of final case outcomes (Table 20). These final case outcomes will be obtained from the OPDP Data and Performance Unit six months after the OM has received the written formulation in each case.

Table 19

Intermediate Outcomes to be Recorded by OMs Via Online Surveys

Intermediate Outcome	Description	Time Point Measured	Rationale	Coding Used
OM Understanding of the Case	The OM's self-reported understanding of the case overall.	Survey 1 ⁶⁰ Survey 2 ⁶¹ Survey 3 ⁶² Survey 4 ⁶³	To investigate whether a) OM understanding of the case differs significantly across Formulation Type and/or Time Point, and b) whether OM understanding of the case has any impact on other intermediate outcomes of interest (i.e., OM confidence in managing the case).	Scale Rated on a 4-point Likert scale from 0 - 'I do not Understand the Case at All', to 4 - 'I completely Understand the Case'.
OM Understanding of the Formulation	The OM's self-reported understanding of the written formulation.	Survey 2 Survey 3 Survey 4	To investigate whether a) OM understanding of the formulation significantly differs depending on Formulation Type, and b) whether OM understanding of the formulation has any impact on other intermediate outcomes of interest (i.e., OM understanding of the case overall).	Scale Rated on a 4-point Likert scale from 0 - 'I do not Understand the Formulation at All', to 4 - 'I completely Understand the Formulation'.

⁶⁰ Pre-Formulation

⁶¹ Immediately Post-Formulation

⁶² One-Month Post-Formulation

⁶³ Three-Months Post-Formulation

Table 19 Continued

Intermediate Outcome	Description	Time Point Measured	Rationale	Coding Used
OM Understanding of the Recommendations	The OM’s self-reported understanding of the recommendations made within the formulation.	Survey 2 Survey 3 Survey 4	In addition to assessing OM understanding of the formulation overall, it was considered important to assess OM understanding of formulation recommendations separately, as OMs are likely to be those responsible for implementing these recommendations. This will provide insight into a) whether OM understanding of the recommendations significantly differs depending on Formulation Type, and b) whether OM understanding of recommendations has any impact on other intermediate outcomes of interest (i.e., percentage of recommendations completed).	Scale Rated on a 4-point Likert scale from 0 - ‘I do not Understand the Recommendations at All’, to 4 - ‘I completely Understand the Recommendations’.
OM Confidence in Managing the Case ^a	The OM’s self-reported confidence in managing the case.	Survey 1 Survey 2 Survey 3 Survey 4	To investigate whether a) OM confidence in managing the case significantly differs depending on Formulation Type and/or Time Point, and b) whether OM confidence has any impact on other intermediate outcomes of interest (i.e., offender’s compliance with pathway plan).	Scale Rated on a 4-point Likert scale from 0 - ‘Not Confident at All’, to 4 - ‘Completely Confident’.

Table 19 Continued

Intermediate Outcome	Description	Time Point Measured	Rationale	Coding Used
OM Motivation to Manage the Case	The OM’s self-reported motivation to manage the case.	Survey 1 Survey 2 Survey 3 Survey 4	To investigate whether a) OM motivation to manage the case significantly differs depending on Formulation Type and/or Time Point, and b) whether OM motivation has any impact on other intermediate outcomes of interest (i.e., percentage of recommendations completed, offender’s motivation to cease offending).	Scale Rated on a 4-point Likert scale from 0 - ‘Not Motivated at All’, to 4 - ‘Completely Motivated’.
Percentage of Recommendations Actioned	The percentage of recommendations made within the formulation that were acted upon (as reported by the OM).	Survey 3 Survey 4	To investigate whether a) the percentage of formulation recommendations actioned in each case significantly differs depending on Formulation Type, and b) whether other intermediate outcomes of interest (i.e., OM understanding of recommendations, OM motivation to manage the case) have any impact on this outcome.	Scale Percentage of recommendations actioned.

Table 19 Continued

Intermediate Outcome	Description	Time Point Measured	Rationale	Coding Used
Offender Compliance ^a	Level of offender compliance with their pathway plan over the past month (as reported by the OM).	Survey 1 Survey 2 Survey 3 Survey 4	To investigate whether a) offender compliance significantly differs depending on Formulation Type and/or Time Point, and b) whether other intermediate outcomes of interest (i.e., OM understanding of case, OM confidence in managing the case) have any impact on this outcome.	Scale Rated on a 4-point Likert scale from 0 - 'Not Compliant at All', to 4 - 'Completely Compliant'.
Offender Motivation ^a	Level of offender motivation to cease offending over the past month (as reported by the OM).	Survey 1 Survey 2 Survey 3 Survey 4	To investigate whether a) offender motivation significantly differs depending on Formulation Type and/or Time Point, and b) whether other intermediate outcomes of interest (i.e., OM understanding of case, percentage of recommendations actioned) have any impact on this outcome.	Scale Rated on a 4-point Likert scale from 0 - 'Not Motivated at All', to 4 - 'Completely Motivated'.

Table 19 Continued

Intermediate Outcome	Description	Time Point Measured	Rationale	Coding Used
Risk-Taking Behaviour	The level of risk-taking behaviour displayed by the offender within the past month as reported by the OM (e.g., illegal substance misuse, engaging with anti-social peers, displaying offence paralleling behaviour).	Survey 1 Survey 2 Survey 3 Survey 4	To investigate whether a) level of risk-taking behaviour significantly differs depending on Formulation Type and/or Time Point, and b) whether other intermediate outcomes of interest (i.e., percentage of recommendations actioned, offender’s motivation to cease offending) have any impact on this outcome.	Scale Rated on a 4-point Likert scale from 0 - ‘No Risk-Taking Behaviour at All’, to 4 - ‘High Level of Risk-Taking Behaviour’.
Purposeful Activity	The level of purposeful activity displayed by the offender over the past month as reported by the OM (i.e., employment, education, pro-social activity, skill development).	Survey 1 Survey 2 Survey 3 Survey 4	To investigate whether a) level of purposeful activity significantly differs depending on Formulation Type and/or Time Point, and b) whether other intermediate outcomes of interest (i.e., percentage of recommendations actioned, offender’s motivation to cease offending) have any impact on this outcome.	Scale Rated on a 4-point Likert scale from 0 ‘No Purposeful Activity at All’, to 4 ‘High Level of Purposeful Activity’.

Note. ^a This measure was adapted from The Probation Offender Questionnaire (Shaw et al., 2017).

Table 20

Final Case Outcomes to Be Obtained from the OPDP Data and Performance Unit Six Months Post-Formulation

Case Outcome	Description	Rationale	Coding Used
Reoffending Frequency	The number of re-offences committed by the offender within the 6-month period post-formulation.	To investigate whether the number of re-offences committed by each offender significantly differs depending on Formulation Type.	Scale Number of Re-Offences Committed
Reoffending Onset	The length of time that elapsed between the OM receiving the written formulation and the offender committing their first re-offence.	To investigate whether the length of time before first re-offence significantly differs depending on Formulation Type.	Scale Number of Days Elapsed
Reoffending Severity	The severity of the most severe re-offence committed by the offender within the 6-month period post-formulation. This was to be coded by the researcher based on the penalty received for the crime.	To investigate whether the severity of the most severe re-offence committed by each offender significantly differs depending on Formulation Type.	Categorical Minor Re-offence: 1 Moderate Re-offence: 2 Major Re-offence: 3

Table 20 Continued

Case Outcome	Description	Rationale	Coding Used
Change in Risk Level	The difference in each offender’s risk level pre-formulation vs six months post-formulation.	To investigate whether changes in risk level significantly differ depending on Formulation Type.	Scale OASys Violence Predictor (OVP) Score Categorical Risk of Serious Harm (RoSH) Category

Note. The OVP is scored out of 100 and is used to predict the chance (in percent) of an offender committing a known re-offence within 2 years (HMPSS, 2019). The RoSH is a structured professional judgement assessment which results in each offender being placed in one of four risk categories: ‘Low’, ‘Medium’, ‘High’ and ‘Very High’ (HMPPS, 2019).

4.2.2.3 Materials

OM Surveys. OMs will complete five different surveys throughout the study period (Appendix I to M). The first survey will be used to collect general demographic information from OMs, whereas (as previously described), the other four surveys will be used to collect intermediate case outcomes throughout the study period.

Both the Demographic Survey and Survey 1 will be completed by the OM at the end of the consultation meeting they attend. The remaining three surveys will be completed by the OM in their own time at various points throughout the study. All five surveys will be designed to be as concise as possible to ensure that any impact on OM duties will be kept to an absolute minimum. All surveys (along with the OM information sheet and consent form) will be designed using the Qualtrics online platform and will be completed by the OM electronically⁶⁴.

Demographics Survey. This survey (Appendix I) will be completed by the OM at the end of the consultation meeting with the use of the psychologist's laptop. The survey will begin by asking each OM to provide a range of their demographic and background details including 'Age', 'Years Working in Role' and 'Caseload Size'. At the end of the survey, OMs will also be asked to complete the Personality Disorder - Knowledge, Attitudes and Skills Questionnaire (PD-KASQ; Bolton et al., 2010). In its most recent form, the PD-KASQ contains 21 items, each rated on a 5-point Likert scale from 'Strongly Disagree' to 'Strongly Agree'. These 21 items load onto five different sub-scales: psychological *understanding* of personality disorder, *capability* to work with personality disordered individuals, *emotional reactions* towards these individuals, level of *organisational support* felt when working with

⁶⁴ OPDP staff have advised the researcher that electronic surveys will be more convenient to complete than hardcopy surveys.

these individuals, and *forensic competency* in working with personality disordered offenders.

The primary purpose of the Demographics Survey will be to identify and control for any potentially confounding OM factors. For example, if variables such as ‘Caseload Size’ or ‘PD-KASQ Score’ are found to significantly differ across the levels of Formulation Type, it will then be possible to control for these confounding variables in subsequent analyses.

Survey 1 (Pre-Formulation). This survey (Appendix J) will be completed by the OM at the end of the consultation meeting, immediately after completing the Demographics Survey. The purpose of Survey 1 will primarily be to collect ‘baseline’ (post-consultation but pre-formulation) measures of a range of the intermediate outcomes of interest. This will provide a means of measuring the impact of written formulation over and above consultation alone.

Baseline measures recorded at this point will be ‘OM Understanding of the Case’, ‘OM Confidence in Managing the Case’, ‘OM Motivation to Manage the Case’, ‘Offender Compliance’, ‘Offender Motivation’, ‘Risk-Taking Behaviour’ and ‘Purposeful Activity’. Each of these variables will be rated by the OM using a 4-point Likert Scale (see Table 19). After providing each of these baseline ratings, OMs will be asked to qualitatively explain the reasoning behind their answers. For example, after rating the offender’s level of risk-taking behaviour within the past month, OMs will be asked to describe this behaviour in more detail. The purpose of collecting this additional information is to allow for a deeper interpretation of any subsequent statistical findings, and to confirm that OMs have used the rating scales consistently.

Survey 2 (Immediately Post-Formulation). The link to access this survey (Appendix K) will be e-mailed to the OM once they have received the formulation written for the case in question. This will typically be three to four weeks after the consultation meeting has taken

place. Within this survey, OMs will be asked to rate the same intermediate outcomes as within Survey 1 (e.g., OM Understanding of the Case, Offender Motivation, Risk-Taking Behaviour). The purpose of this will be to assess any change in these intermediate outcomes that has occurred since the consultation meeting took place, providing insight into the possible impact of consultation.

In addition, OMs will be asked a range of new questions concerning the formulation they have received. First, they will be asked to rate their own understanding of this formulation on a 4-point Likert scale (see Table 19). The purpose of this question will be to investigate whether initial OM self-reported understanding of the formulation significantly differs depending on Formulation Type. OMs will then be asked to qualitatively describe which parts of the formulation (if any) have particularly improved or decreased their understanding of the case, and to provide any suggestions for how the formulation could be improved.

To provide a method of validating these self-reported ratings of formulation understanding⁶⁵, OMs will also be asked to outline the causes of the offender's presenting problems as described within the formulation, and also to describe how the formulation suggests these problems may be reduced. Finally, OMs will be asked to outline the recommendations made within the formulation and to rate their understanding of these recommendations on a 4-point Likert scale (see Table 19).

Survey 3 (One-Month Post-Formulation). One month after completing Survey 2, OMs will be e-mailed a link to complete Survey 3 (Appendix L). To measure any change that may have occurred in intermediate outcomes since the formulation was written, this survey will contain many of the same questions as Survey 2. However, to better assess the utility of

⁶⁵ As recommended by HMPPS National Research Committee

the formulation, some additional questions will also be asked. First, OMs will be asked to describe which of the recommendations made within the formulation have been actioned and which have not. The researcher will later convert this information into a quantitative variable representing the percentage of recommendations actioned within each case.

For any recommendations *not* yet actioned, OMs will be asked to describe the reasons behind this. The responses to this question are expected to provide a deeper insight into the possible barriers faced by OMs when trying to utilise formulations (aside from barriers relating to their own understanding of the formulation/recommendations). Finally, OMs will be asked to describe how many times they have referred back to the formulation since first reading it. This is expected to provide another measure of the utility of each formulation.

Survey 4 (Three-Months Post-Formulation). The link to Survey 4 (Appendix M) will be e-mailed to OMs two months after they have completed Survey 3. The purpose of this survey will be to provide a final measure of the intermediate outcomes of interest, and secondly to collect OM perspectives of the overall impact and utility of the formulation written in each case. To achieve this second aim, OMs will firstly be asked to rate how strongly they felt the formulation influenced their management of the case on a 4-point Likert scale from 0 – ‘Has Not Influenced This at All’, to 4 – ‘Has Influenced This A Large Amount’. OMs will then be asked to list any other factors that had an influence on their management of the case, such as reports from other sources or advice from other professionals. Finally, OMs will be asked to rate the amount of additional benefit (if any) that the written formulation provided over and above the consultation meeting alone. This will also be rated on a 4-point Likert scale from 0 - ‘It Has Provided No Additional Benefit at All’ to 4 - ‘It Has Provided A Large Amount of Additional Benefit’. OMs will then be invited to qualitatively expand on their reasons for selecting this rating.

4.2.2.4 Procedure

Psychologists will be recruited into the study using the method described within the ‘Participants’ section of the present chapter (pp. 155-156). Each participating psychologist will then be provided with detailed information via e-mail about how to recruit OMs into the study during consultation meetings. This e-mail will include a template of how to introduce the study to OMs (Appendix F) and will also contain electronic links to the OM information sheet, OM consent form, Demographic Survey and Survey 1 (Appendix G-J). At the end of each consultation meeting that is expected to result in a level 2 or level 3 written formulation, the psychologist will then invite the attending OM to participate in the study. If the OM is interested, they will be invited to read the OM information sheet and to complete the OM consent form using the psychologist’s laptop. Consenting OMs will then be asked to complete both the Demographic Survey and Survey 1 within this meeting to ensure that ‘baseline’ measures of intermediate outcomes are recorded before the formulation is written.

At the beginning of the Demographic Survey, OMs will be asked to create a ‘memorable word’ and ‘memorable number’ which they will use throughout their participation. At the beginning of each subsequent survey, OMs will then be asked to enter this memorable word and memorable number before proceeding. This will be the method used to link each OM’s survey responses together without the need to collect personally identifying information.

Whenever each participating psychologist completes a formulation for one of these cases, they will forward this on to the researcher and the OM at the same time via secure e-mail. Once each formulation is received, the researcher will then directly e-mail the OM with the link to Survey 2. OMs will be instructed not to fill out Survey 2 until they have read the formulation in question.

The researcher will then score each received formulation on both Audit Tool Standard

3 and Audit Tool Standard 4b before allocating it into one of the four formulation conditions described within the 'Design' section of the present chapter (p. 158). In addition, the researcher will assess each formulation using the same method as used within Study 1a. This will involve scoring each formulation against the full Case and Risk Formulation Self-Auditing Tool (NOMS & NHS, 2015b; Table 6), the Case Formulation Quality Checklist-Revised⁶⁶ (McMurrin & Bruford, 2016; Table 5), and the coding framework developed by the researcher (Table 4). The purpose of this will be to further verify the findings of Study 1a, which identified that no other formulation features or standards (aside from Audit Tool Standard 3 and potentially Audit Tool Standard 4b) could significantly contribute to the prediction of offender (AP) outcomes. However, to reiterate, Audit Tool Standard 3 and Audit Tool Standard 4b will be the main focus of the present study and are the only two variables which will be quasi-experimentally manipulated.

One month after completing Survey 2, each OM will then be sent a secure e-mail containing the link to Survey 3. This e-mail will also contain the offender's case number to ensure that OMs complete the survey in relation to the correct offender and consultation event (as OMs may consult on several offenders during the study period). OMs will also be reminded of their previously selected memorable word and memorable number if they have any difficulty remembering these. Two months after completing Survey 3, each OM will be sent the link to Survey 4 via secure e-mail. Once each OM completes this final survey, they will be thanked for their time, provided with a debrief statement (Appendix N) and invited to provide any feedback on the study.

Once 200 formulations have been collected, the researcher will take stock of the number of formulations that have been allocated to each of the four formulation conditions.

⁶⁶ There may be potential to rate all 10 items of the CFQC-R within this study (rather than only 8 as within Study 1a) due to having direct contact with the psychologists who authored these formulations.

As previously described, if any of these conditions are found to contain a much smaller number of formulations than the others, selected psychologists will then be provided with training on how to produce formulations meeting the required criteria. This will be achieved by delivering detailed guidance (during an arranged training session) to psychologists on how to best incorporate these standards into their formulations. During this training session, detailed descriptions of the required standards will be provided and examples of formulations which have incorporated these standards to a proficient (and not so proficient) level will be provided. This guidance will be developed at the halfway point of the study, once condition membership has been assessed.

Once a sufficient number of formulations (i.e., 100) have been allocated into each of the four formulation conditions, psychologists will be thanked for their time and fully debriefed (Appendix N). Final case outcomes of interest (Table 20) will then be requested from the OPDP Data and Performance Unit.

4.2.3 Analysis

4.2.3.1 Descriptive Statistics

Prior to conducting any analyses, the normality of all quantitative data will be assessed and any identified issues will be appropriately addressed. Quantitative OM survey data will be fully explored and summarised using descriptive statistics and graphs. Qualitative OM survey data will be analysed using thematic analysis to gain a deeper insight into the reasons behind the quantitative ratings provided, and to gather further detail regarding the intermediate outcomes of interest.

4.2.3.2 Influence of Formulation Type on Final Case Outcomes

As previously described, the final case outcomes (e.g., Reoffending Frequency, Reoffending Severity, Change in Risk Level) of each of the 400 offenders will be collected from the Data and Performance Unit six months post-formulation. Analysis will then be conducted to examine whether these final case outcomes significantly differ across the four conditions of Formulation Type.

To control for any potentially confounding factors, statistical analysis will first be performed to ensure that offender characteristics (e.g., age, offence type, number of previous treatments completed), OM characteristics (e.g., number of years in role, caseload size, PD-KASQ score) and pre-formulation measures of intermediate outcomes (e.g. OM Understanding, OM Confidence, Offender Compliance, Level of Risk-Taking Behaviour) do not significantly differ between the four conditions of Formulation Type. Analysis will also be performed to ensure that none of the formulation features deemed to be non-significant within Study 1a differ between the four formulation conditions. If any of these potentially confounding variables *are* found to significantly differ across Formulation Type, these variables will be entered into subsequent analyses as covariates.

After checking that the data meets the appropriate test assumptions, a one-way multivariate analysis of variance (MANOVA) will be performed. This will contain one independent variable with four levels (Formulation Type: H³-H^{4b} Formulations, H³-P^{4b} Formulations, P³-H^{4b} Formulations, P³-P^{4b} Formulations), and three continuous dependent variables (Reoffending Frequency, Reoffending Onset, Change in Risk Level⁶⁷). MANOVA was selected in this instance as it can be “used to test the difference between independent groups across several outcome variables simultaneously” (Field, 2018). However, although

⁶⁷OASys Violence Predictor (OVP) score (see Table 20).

MANOVA is able to detect if there *is* a difference between the levels of an independent variable, it is unable to detect *which* of the dependent variables have contributed to this significant difference (Laerd Statistics, 2015; Pituch & Stevens, 2016). Therefore, if the result of this MANOVA is significant, three one-way ANOVAs will be performed (with Bonferroni adjustment) to identify *which* of these three dependent variables significantly differ across the conditions of Formulation Type. For each dependent variable found to have a significant contribution to this difference, Tukey pairwise comparisons will be performed to identify which of the four formulation conditions significantly differ from each other on the basis of this dependent variable.

For the two ordinal final case outcomes (Reoffending Severity and Categorical Change in Risk Level⁶⁸), two Kruskal Wallance tests will be performed. This test is generally regarded to be the non-parametric version of a one-way ANOVA. If either of these Kruskal Wallance tests are found to be significant, Dunn's (1964) procedure will be performed (with Bonferroni adjustment) to identify which of the formulation conditions significantly differ from each other on the basis of this dependent variable.

4.2.3.3 Influence of Formulation Type and Time Point on Intermediate Case Outcomes

Final Case Outcomes Differ Across Formulation Type. If any of these final case outcomes *are* found to significantly differ across the four conditions of Formulation Type, further analysis will then be conducted to explore the *mechanism* by which this occurs. For example, if it is found that offenders with formulations allocated into Condition 1 (H³-H^{4b} Formulations) have more positive final case outcomes, how were these formulations able to have this impact? To answer this question, the intermediate outcomes reported by OMs within surveys 1, 2, 3 and 4 will be analysed.

⁶⁸ Risk of Serious Harm (RoSH) category (see Table 20).

After assessing normality and ensuring test assumptions have been met, a two-way mixed MANOVA will be conducted containing one between-groups independent variable (Formulation Type), one within-groups independent variable (Time Point) and ten dependent variables (Understanding of Case, Understanding of Formulation, Understanding of Recommendations, Percentage of Recommendations Actioned, OM Confidence, OM Motivation, Offender Compliance, Offender Motivation, Level of Risk-Taking Behaviour, Level of Purposeful Activity).

If any significant interaction is found between Formulation Type and Time Point (indicating that the impact of Formulation Type on intermediate outcomes is dependent on Time Point) univariate F-tests will be performed (using Bonferroni adjustment) to identify which dependent variable/s this interaction is present for. For any dependent variable found to be significant (e.g., OM Understanding of the Formulation), simple effects analysis will then be performed to understand this interaction in more detail (for instance, whether OM Understanding of the Formulation does significantly differ across Formulation Type, but only at Survey 2 when the formulation has first been read). Finally, pairwise comparisons will be performed to understand *which* conditions of Formulation Type significantly differ from each other at each Time Point on the basis of this dependent variable (e.g., At Survey 2, OM Understanding of the Formulation is significantly higher in Condition 1 (H^3 - H^{4b} Formulations)).

Depending on the differences found in these intermediate outcomes across Formulation Type, and at which Time Point/s these differences are found, this method may make it possible to decipher the mechanism by which Formulation Type was able to impact final case outcomes. For example, if OMs working with formulations allocated into Condition 1 (H^3 - H^{4b} Formulations) are found to be those most likely to report that they ‘Completely Understand the Formulation’ at Survey 2 and are also found to have carried out

the highest percentage of recommendations at Survey 3, this would indicate that OMs understand H³-H^{4b} Formulations better than formulations of other types, enabling these OMs to action the formulation recommendations more easily or effectively. It could then be theorised that this is the mechanism by which H³-H^{4b} Formulations can lead to more positive final case outcomes.

Alternatively, if no significant interaction is found between Formulation Type and Time Point, main effects will instead be examined to understand if any of the dependent variables significantly differed across the levels of one independent variable but not the other. If so, the same process as above (i.e., univariate F-tests, pairwise comparisons) will then be followed to understand these differences in more detail.

Final Case Outcomes Do Not Differ Across Formulation Type. Conversely, if it is found within the initial analysis that *none* of the final case outcomes (e.g., Reoffending Frequency, Reoffending Onset) significantly differ across the four conditions of Formulation Type, the above analysis of intermediate outcomes may provide an insight into why this may be. For example, it could be the case that OMs working with formulations allocated into Condition 1 (H³-H^{4b} Formulations) are significantly more likely to report that they ‘Completely Understand the Case’ at Survey 2, but no significant differences may then be identified at Survey 3. In this instance, insight gained from qualitative survey responses may prove useful. For instance, in the above example, qualitative responses might reveal that OMs working with H³-H^{4b} Formulations had problems with actioning recommendations due to barriers outside of their control, meaning that their high understanding of the formulation could not lead to a higher percentage of formulation recommendations being carried out. Methods of addressing any commonly experienced barriers could then be developed by the OPDP in future, potentially increasing the utility and outcomes of subsequent formulations.

4.3 Part 2: Pilot Study

4.3.1 Overview

As described at the beginning of this chapter, Study 2 was launched as planned. However, the study was halted in March 2020 at the request of HMPPS National Research Committee, due to the outbreak of COVID-19. This section will therefore be used to document the work that was undertaken before the study was halted and to briefly discuss and analyse the small amount of data that was collected. This will be presented as a small pilot study, with the purpose of usefully informing subsequent research in this area.

4.3.2 Method

The method described in Part 1 of the present chapter (pp. 154-181) was initiated as planned. Ethical approval to conduct the study was obtained from both HMPPS National Research Committee (ref: 2019-256) and Swansea University Research Ethics Committee (ref. 2583). The researcher then attended a routine OPDP Wales staff meeting and delivered a short PowerPoint presentation explaining the general purpose and nature of the study. In total, eight of the 10 invited psychologists consented to taking part. These eight psychologists were later provided with detailed information via e-mail instructing them on how to recruit OMs into the study at the end of consultation meetings.

To expand psychologist recruitment (as previously anticipated), the researcher later asked the OPDP National Research Lead to identify any OPDP teams in England who may also be available to participate in the study. When contacted by the researcher, OPDP teams within both Yorkshire and East London expressed an interest in taking part. The researcher was scheduled to attend team meetings within both of these areas, again to inform psychologists of the nature and purpose of the study. However, the outbreak of COVID-19 triggered the cancellation of these meetings, meaning that no psychologists could be recruited

from either of these additional areas before the study was halted.

At the time of halting the study, the eight psychologists recruited from Welsh OPDP teams had in turn enlisted a total of 14 OMs. As planned, all 14 of these OMs completed both the Demographic Survey and Survey 1 within the consultation meeting they attended. However, only eight of these 14 OMs had a chance to receive the written formulation and complete Survey 2 before the study was halted. Only the first OM recruited into the study was able to fully conclude their participation within the timeframe available, completing all five surveys⁶⁹. The data provided by these 14 OMs will now be briefly explored.

4.3.3 Results

4.3.3.1 Demographic Survey

The 14 recruited OMs were 46 years of age on average (ranging from 30 to 67 years) and were mostly female (79%). They were based within eight different OPDP teams across Wales, and the majority (86%) reported having been an OM for at least two years. On average, OMs reported having a current caseload size of 32 offenders (ranging from 10 to 83 offenders). Table 21 provides a full overview of this demographic information.

Although one of the original purposes of the Demographic Survey was to ensure that PD-KASQ scores achieved by OMs did not significantly differ across the four formulation conditions, this aim could not be fulfilled as formulations were never allocated into these conditions due to the early termination of the study. Instead, PD-KASQ scores were calculated simply to gain a general understanding of OM self-reported ability in these areas.

Table 22 shows that on average, OMs scored most highly on the *forensic competency* sub-scale of the PD-KASQ. This would indicate that these OMs feel they have a good understanding of the relationship between personality disorder and offending, and that they

⁶⁹ To facilitate this, the OM completed Survey 4 one month (rather than two months) after completing Survey 3.

feel able to access specialist support for personality disordered offenders. However, Table 22 also shows that on average, OMs scored most poorly on the *emotional reactions* sub-scale. This would indicate that these OMs sometimes experience negative emotional reactions towards individuals with personality disorder.

Table 21

Demographic Information Provided by the 14 Recruited OMs

Demographic Variable		Count	N%⁷⁰
Sex	Male	3	21
	Female	11	79
Age	30-39 years	5	36
	40-49 years	4	29
	50-59 years	4	29
	≥ 60 years	1	7
Years Working as an OM	< 2 years	2	14
	2-10 years	4	29
	11-20 years	7	50
	> 20 years	1	7
OPDP Team	Swansea	5	36
	Cardiff	2	14
	Gwent	2	14
	Carmarthen	1	7
	Pontypridd	1	7
	Newport	1	7
	Merthyr Tydfil	1	7
	Caerphilly	1	7
Caseload Size	10-19 offenders	2	14
	20-29 offenders	6	43
	30-39 offenders	5	36
	≥ 40 offenders	1	7

⁷⁰ Percentages may not add up to 100% due to rounding.

Table 22*Mean Scores Achieved by the 14 OMs on Each Sub-Scale of the PD-KASQ*

PD-KASQ Sub-Scale	Mean Score (SD)	Total Possible Score	% Scored
Understanding	21.57 (1.74)	30	72%
Capability	18.93 (1.49)	25	76%
Emotional Reactions^a	13.57 (1.65)	20	68%
Organisational Support	11.07 (1.33)	15	74%
Forensic Competency	12.57 (1.95)	15	84%

Note. ^a Higher scores indicate more positive emotional reactions.

4.3.3.2 Survey 1 (Pre-Formulation)

Survey 1 was the first in which OMs were asked to record intermediate case outcomes. One of the 14 recruited OMs attended *two* different case consultation meetings within the study period and agreed to provide intermediate outcomes for both cases. Therefore, the following Survey 1 data is based on a total of 15 responses.

OM Understanding, Confidence, and Motivation. When asked how much they understood the case discussed within this consultation meeting, only one OM reported that they ‘Completely Understood’ this case. The vast majority of OMs (12) instead reported that they ‘Mostly Understood’ the case. Similarly, when asked how confident they were in managing this case, only three OMs reported that they were ‘Completely Confident’, whereas two-thirds of the OMs (10) stated they were ‘Mostly Confident’. As Survey 1 was completed at the end of the consultation meeting, these results suggest that the meeting itself was not able to clarify the case completely for most OMs. Conversely, however, the majority (12) of the OMs reported that they felt ‘Completely Motivated’ to manage the case. This promisingly

suggests that OMs often remain highly motivated to manage complex cases even when they lack understanding or confidence.

Intermediate Offender Outcomes. In terms of OM perceptions of intermediate offender outcomes, two-thirds of the OMs (10) reported that the offender discussed within the consultation meeting had been either ‘Mostly Compliant’ or ‘Completely Compliant’ with their pathway plan over the past month. Only two OMs reported that the offender was ‘Not Compliant at All’ during this time. A similar pattern emerged when OMs were asked how motivated they believed the offender was to cease offending, with only two OMs reporting that the offender was ‘Not Motivated at All’.

However, when asked about the level of risk-taking behaviour displayed by these offenders over the previous month, only two OMs reported that the offender had displayed ‘No Risk-Taking Behaviour at All’. For OMs who reported that the offender *had* engaged in risk-taking behaviour, this included self-harm (rated as a ‘low level’ of risk-taking behaviour), drug use (rated as a ‘moderate level’ of risk-taking behaviour), and serious further violent offences (recorded as a ‘high level’ of risk-taking behaviour).

Only two OMs reported that the offender had engaged in a ‘High Level of Purposeful Activity’ over the previous month⁷¹. Examples of purposeful activity included engaging with the OM (rated as a ‘low level’ of purposeful activity), attending group meetings (rated as a ‘moderate level’ of purposeful activity’), and employment (rated as a ‘high level’ of purposeful activity). An overview of all OM responses to Survey 1 is provided within Table 23.

⁷¹ These were *not* the same two OMs who reported that the offender had engaged in ‘No Risk-Taking Behaviour at All’ over the past month.

Table 23*Overview of OM responses to Survey 1*

Survey 1 Variable		Count	N%^a
OM Understanding of Case	Do Not Understand	0	0%
	Somewhat Understand	2	13%
	Mostly Understand	12	80%
	Completely Understand	1	7%
OM Confidence in Managing Case	Not Confident	0	0%
	Somewhat Confident	2	13%
	Mostly Confident	10	67%
	Completely Confident	3	20%
OM Motivation to Manage Case	Not Motivated	0	0%
	Somewhat Motivated	1	7%
	Mostly Motivated	2	13%
	Completely Motivated	12	80%
Offender Compliance^b	Not Compliant	2	13%
	Somewhat Compliant	3	20%
	Mostly Compliant	2	13%
	Completely Compliant	8	53%
Offender Motivation^b	Not Motivated	2	13%
	Somewhat Motivated	4	27%
	Mostly Motivated	5	33%
	Completely Motivated	4	27%

Table 23 Continued

Survey 1 Variable		Count	N% ^a
Risk-Taking Behaviour^b	None	2	13%
	Low Level	6	40%
	Moderate Level	3	20%
	High Level	4	27%
Purposeful Activity^b	None	3	20%
	Low Level	6	40%
	Moderate Level	4	27%
	High Level	2	13%

Note. ^a Percentages may not add up to 100% due to rounding.

^b As perceived by the OM within the past month.

Discussion of Survey 1 Results. Although based on only a small number of responses, these data have provided several valuable insights. The first is that the majority of these OMs reported that they did not have a full understanding of the case or feel completely confident in managing the case at the end of the consultation meeting. This suggests that case consultation alone may not often be able to maximise OM understanding or confidence.

Secondly, it is interesting to note that although almost all offenders (13) were reported to have engaged in at least some risk-taking behaviour over the past month, very few offenders (two) were perceived by OMs as having no motivation to cease offending during this time period. This highlights the importance of collecting non-behavioural offender outcomes, as these may allow the detection of smaller positive changes over time.

The descriptions of risk-taking behaviour and purposeful activity provided by OMs were found to match the ratings they had allocated to this behaviour well (i.e., low, moderate, or high). This indicates that OMs *were* able to use these scales effectively and consistently to capture their observations.

As previously described, responses to Survey 1 were intended to be used as a ‘baseline’ against which post-formulation survey responses (from surveys 2, 3 and 4) could be subsequently compared. This would have provided a means of measuring the impact of written formulation over and above consultation alone.

4.3.3.3 Survey 2 (*Immediately Post-Formulation*)

As stated previously, eight of the 14 OMs completed Survey 2 before the study was halted. Those who did not complete it were either waiting to receive the written formulation from the psychologist (two OMs) or had been sent the link to Survey 2 but had not yet completed it (four OMs). The OM who had agreed to provide intermediate outcomes for two cases was unfortunately amongst those who did not respond to Survey 2 before the study was halted. Therefore, the following survey data is based on eight responses in total.

Each OM’s Survey 2 responses were matched with their Survey 1 responses using their memorable word and memorable number. This was to facilitate initial understanding of any change that may have occurred in intermediate case outcomes over these two time points⁷².

OM Understanding. When asked about their understanding of the case overall, seven of the eight OMs reported that they ‘Mostly Understood the Case’ at both time points. Only one OM reported that their understanding of the case had improved after reading the formulation, from ‘Somewhat Understand the Case’ to ‘Mostly Understand the Case’. This suggests that for the majority of OMs, reading the written formulation did not substantially improve their understanding of the case. One possible reason for this is that written formulation is often used to summarise the information previously discussed within a

⁷² As previously described, if the study had continued, any such change would have been further explored using statistical analysis.

consultation meeting. Therefore, it may have been unlikely for OMs to substantially improve their understanding of this case simply by reading familiar information.

However, when OMs were asked to qualitatively describe whether any specific parts of the formulation had increased their understanding of the case overall, all eight OMs responded affirmatively:

“The greatest learning for me was the consultant showing how the offender is replicating his relationship with his deceased mother with current intimate partners. I had not identified this pattern” (Participant 2)

“The predisposing factors (childhood experiences) have particularly improved my understanding of the case” (P7)

“Linking offender’s values to current behaviour” (P4)

These comments highlight that although most of the OMs *quantitatively* reported that their understanding of the case had not increased between Survey 1 and Survey 2, all OMs *qualitatively* reported that at least one aspect of the formulation *had* improved their understanding. One possible explanation for this is that the formulation *did* increase case understanding, but OMs still did not feel that they *completely* understood this case. Therefore, the seven OMs who reported that they ‘Mostly Understood the Case’ at Survey 1 may have felt uncomfortable with increasing their ratings to ‘Completely Understand the Case’ at Survey 2. This is a limitation of the survey itself and suggests that using a more sensitive measure of understanding (i.e., a sliding scale from 0-10) would have produced richer data.

When asked whether any specific parts of the formulation had *decreased* their understanding of the case (i.e., by being unclear or complex), all OMs stated that this had not been the case:

“None at all. It clarified my own grasp of the case, but has added to it further, which will help me work better with the offender” (P2)

These findings are positive overall, as all OMs indicated that the formulation did improve their understanding of the case in at least one way. These findings were later supported by the findings of Study 4 (p. 253), in which staff reported that OPDP formulations are useful and effective at facilitating staff understanding of each case.

In terms of understanding the formulation itself, five of the eight OMs stated that they ‘Mostly Understood the Formulation’, whereas the remaining three OMs stated that they ‘Completely Understood the Formulation’. Although this implies a reasonable level of understanding, it also highlights that there is room for further improvement. The opposite was found when OMs were asked how much they understood the recommendations made within the formulation, with three of the OMs stating that they ‘Mostly Understood the Recommendations’, and five OMs stating that they ‘Completely Understood the Recommendations’. This indicates that many OMs did *not* feel they had the same level of understanding of both the formulation and the recommendations made within it, suggesting that it was valuable to measure these variables separately.

The finding that the majority of OMs felt that they only ‘Mostly Understood the Formulation’ suggests that it would be valuable for psychologists to ensure that each OM has a full understanding of the formulation before they are expected to utilise it. This could be achieved with a routine discussion via e-mail or phone soon after the OM is sent the formulation written for each case, during which they could discuss any queries or concerns. This may have the potential to lead to further improvements, such as the OM managing the offender more effectively due to understanding the case more fully, which may in turn lead to more positive final case outcomes.

To further validate these self-reported ratings of formulation understanding and

recommendations understanding, OMs were asked several qualitative questions about the content of the formulation. Namely, OMs were asked to describe the causes of the offender's behaviour as hypothesised by the formulation, how the offender's risk of reoffending might be reduced as hypothesised by the formulation, and which specific recommendations had been made within the formulation. The content of these responses was then compared with the content of each formulation to assess how well these corresponded. Overall, it was found that OMs described this content with a high level of accuracy, indicating a good level of understanding. However, it was noted in some instances that OMs tended to describe the causes of offending rather simplistically (i.e., witnessed violence in home during childhood; has low self-esteem), rather than describing *how* these issues were hypothesised as having caused the offending behaviour (i.e. witnessing violence in home during childhood has caused the individual to believe that violence must be used protect self and others; having low self-esteem has caused the individual to want to gain more control and have power over others).

These simplified descriptions may have been provided for several reasons. The first is that these OMs may not have fully understood the psychological causes of offending behaviour as hypothesised within the formulation. This theory is supported by research discussed within Chapter 2 (i.e., Mapplebeck, 2017; Brown, 2018) which found that although OMs could improve their formulation skills in some respects when provided with training, they still had difficulty with developing psychological explanations of offending behaviour.

A second explanation for the simplistic qualitative responses provided by some OMs in relation to this question is that OMs may not have had sufficient time to provide detailed answers, or may not have been motivated to provide detailed answers. To further explore this, the researcher invited all OMs who had participated in the study to provide feedback on the surveys they had completed before the study was halted. However, although OMs replied to

say they found the study valuable and had enjoyed taking part, no specific feedback was received about the surveys themselves.

When asked to qualitatively describe the recommendations made within the formulation, some discrepancies were also identified. For instance, one of the OMs described a recommendation that was not included within the formulation. This may indicate that in some cases, details discussed within the consultation meeting are not included in the written formulation. In other cases, it was found that the OM described only a sub-section of the recommendations made within the formulation. This might indicate that in some cases, certain recommendations are more salient to OMs than others.

Finally, when asked to provide suggestions for how the formulation could be further improved to increase their understanding, five of the OMs either chose not to comment or stated that the formulation could not be improved any further. The other three OMs however provided some minor suggestions:

“It may be helpful to ask for a review in months to come, as events unfold. But this may be purely for my own benefit to check myself and my practice” (P2)

“A follow up session in a couple of months would be beneficial” (P3)

“To make the formulation more helpful for others who may work with the case in future, it could be useful to have some elaboration about 'schizophrenia' as a mental health diagnosis” (P7)

The first two comments suggest that some OMs feel that formulation should not be a static or ‘one off’ event, but that it should be something that is developed over time as events unfold or as new information becomes available. This finding is relevant, as formulations within the OPDP are not typically revised over time unless the OM specifically requests a case review. Although only mentioned by two OMs, these comments suggest that routine follow-up

formulation sessions could be helpful in allowing OMs to feel better supported in their management of each offender. The third comment above suggests that it would also be helpful for psychologists to be aware that formulations should be understandable to all audiences who may be required to read them in future (i.e., healthcare workers, other OMs who become involved with the case). Taking space within the formulation to briefly explain any psychological terms or jargon used would therefore be beneficial.

OM Confidence and Motivation. OMs were then once again asked to rate their confidence in managing the case. No OM stated that they were ‘Completely Confident in Managing the Case’, but three-quarters (six) stated that they were ‘Mostly Confident in Managing the Case’. When comparing Survey 1 and Survey 2 responses, only one OM was found to have reported an increase in confidence after reading the formulation.

Encouragingly, this OM reported that the formulation *had* been the cause of this improvement:

“With the formulation and recommendations, I feel that we will be able to support his motivation to change” (P10)

However, one OM reported experiencing a *decrease* in confidence since completing Survey 1, and the remaining six OMs reported no change in confidence. At first glance, this suggests that reading the formulation did not generally improve OM confidence in managing each case. However, when OMs were asked to describe their reasons for selecting these confidence ratings, several of the OMs who had selected the same confidence rating at both Survey 1 and Survey 2 indicated that receiving the written formulation *had* improved their confidence:

“The recent formulation has given me an opportunity to review my means of working with him and has also improved my insight into the factors linked to and perpetuating his offending” (P7)

“The psychological input from all sources ... has been invaluable” (P12)

This inconsistency could be due to several reasons. The first is that OM confidence may have decreased after Survey 1 and then increased again after reading the formulation. A second possible explanation is that again, since most OMs reported feeling ‘Mostly Confident’ at Survey 1, they may not have felt comfortable increasing this rating to ‘Completely Confident’ at Survey 2. Again, these findings may have been clearer if a more sensitive measure of confidence had been used, such as a sliding scale from 0-10. If the study were to be relaunched in the future, this issue should be addressed.

OMs were also asked a second time to rate their level of motivation in managing the case. When comparing Survey 1 and Survey 2 responses to this question, it was found that OM motivation had decreased in four cases and had remained stable in four cases. The four OMs who reported decreases in motivation had previously reported being ‘Completely Motivated’ within Survey 1. When providing explanations for these decreases however, OMs referenced offender-related issues rather than formulation-related issues:

“Motivation decreased following recall” (P5)

“Previous investment in the case ... this is a relatively young client with - potentially - a long 'offending career' ahead of him” (P12)

These comments suggest that although Survey 2 was completed by OMs immediately after receiving the written formulation, it was not the formulation itself that decreased motivation in these cases, but events that had occurred between the time of attending the consultation meeting and the time of receiving the formulation. Unlike OM explanations of their

confidence ratings, none of the eight OMs referenced the formulation as having had an influence on the motivation ratings they had given. This might suggest that OPDP formulations are currently capable of impacting OM confidence in managing complex cases, but not necessarily OM motivation to manage these complex cases. It may therefore be useful for future OPDP formulations to acknowledge the possibility of setbacks in each case and how to manage these if they occur, which may mitigate these decreases in motivation.

Intermediate Offender Outcomes. As within Survey 1, OMs were then asked to rate their perceptions of a range of intermediate offender outcomes. First, OMs were asked to rate whether the offender had engaged in any risk-taking behaviour to their knowledge since the consultation meeting had taken place. When comparing Survey 1 and Survey 2 responses, it was found that over this time period, risk-taking behaviour had remained stable (and low) in four cases, had decreased within three cases, and had increased within one case. Although it cannot be said that the case consultation meeting influenced these outcomes, these results do show that risk-taking behaviour either decreased or remained low within the majority of cases post-consultation. These reported changes in risk-taking behaviour over a short period of time (as recorded by four of the OMs) also highlight that this factor is indeed dynamic enough to be retained as a valuable intermediate outcome in any subsequent study.

Next, OMs were asked to rate whether the offender had engaged in any purposeful activity to their knowledge since the consultation meeting had taken place. When comparing Survey 1 and Survey 2 responses, it was found that purposeful activity had decreased in four cases and had remained low within four cases. No offender was reported to have *increased* their purposeful activity since the consultation meeting had taken place.

These findings are interesting, as although they suggest that risk-taking behaviour decreased or remained low in most cases following consultation, they also suggest that purposeful activity decreased or remained low. When looking at the descriptions of

purposeful activity provided by OMs, it was found that in some instances this decrease was understandable (i.e., offender's employment contract ended; ill health prevented offender from engaging in purposeful activity). However, in other cases purposeful activity had decreased for seemingly unknown reasons (i.e., previously good attendance at group meetings had become sporadic; no longer engaging well). Due to the limited amount of data collected however, it is difficult to draw conclusions from these findings. Therefore, if the study were to be relaunched in future, this discrepancy should be explored in further detail.

The final questions in Survey 2 asked OMs to rate how compliant the offender had been with their pathway plan since the consultation meeting had taken place, and again asked how motivated they believed the offender was to cease offending. Comparison of Survey 1 and Survey 2 responses to these questions highlighted that ratings of offender compliance had decreased within four cases, increased within three cases, and remained stable within one case. This suggests that offender compliance did not change in a consistent direction in the period after consultation. In terms of offender motivation to cease offending, five of the OMs provided the same rating as within Survey 1, whereas the other three OMs reported that offender motivation had *decreased*. None of eight OMs reported feeling that the offender was 'Completely Motivated' to cease offending. Although again, no generalisable conclusions can be drawn from this small number of cases, these findings suggest that case consultation could not positively impact offender motivation to cease offending in these instances.

Discussion of Survey 2 Results. Although only eight OM responses were received to Survey 2 before the study was halted, descriptive analysis of these responses has provided some interesting initial insights. For example, all eight OMs qualitatively reported that the formulation was able to increase their understanding of the case in at least one way. However, the majority of these OMs also reported that they did not *completely* understand this formulation, which was evident at times from their simplistic descriptions of formulation

content. This finding suggests that communication between psychologists and OMs should be routinely facilitated not only within consultation, but also after the formulation is written. Increasing OM understanding of formulations is likely to result in improvements in other areas, such as improved utility of the formulation. This therefore suggests that this is a valuable finding to act upon.

In addition, when asked to list the recommendations made within the formulation, some OMs omitted recommendations, and in one instance an OM described a recommendation that was not included within the formulation. If the study had continued, it would have been possible to identify which formulation recommendations were actioned by OMs and which were not, providing a better understanding of the utility of these recommendations. On the basis of this finding, the utility of formulation recommendations was further explored within a subsequent study (Study 3, p. 208).

Interestingly, some of the OMs qualitatively reported that reading the formulation improved their *confidence* in managing the case, but none of the OMs mentioned that the formulation had improved their *motivation* to manage the case. Although it has been said that the link between confidence and motivation is “pervasive in the psychology literature” (Bénabou & Tirole, 2002), these findings suggest that confidence and motivation may not always correspond with each other. If statistical analysis had been possible, it would have been used to examine the possible impact of OM confidence and motivation on other intermediate outcomes of interest, such as offender compliance. This would have provided a deeper understanding of the importance of these OM outcomes, and may have sparked a deeper investigation into how formulations could be further improved to maximise these OM outcomes.

Although these findings indicate that many of the intermediate offender outcomes reported by OMs (i.e., motivation to cease offending, level of purposeful activity) did *not*

improve in the period after consultation (i.e., the time between Survey 1 and Survey 2), this does not necessarily mean that the consultation had no positive impact on these outcomes, or would not have done so over time with the addition of the written formulation. The first reason for this is that these outcomes were based on OM *perceptions* of offender outcomes, which are subjective in nature (objective offender outcomes were due to be collected at the end of the study). Secondly, one of the aims of designing the OM surveys was to measure any change in these intermediate offender outcomes over a 4-month period. Therefore, it may simply have been the case that change in intermediate offender outcomes had not yet occurred by this early time point. To answer these questions with more certainty, it is recommended that the study be relaunched in future when possible.

4.3.3.4 Survey 3 (One-Month Post-Formulation) and Survey 4 (Three-Months Post-Formulation)

Only one OM was able to complete Survey 3 before the study was halted. Two further OMs were sent an invite to Survey 3 but did not respond in time, and the remaining five OMs were not yet due to complete it. The OM who did complete Survey 3 was also able to complete Survey 4 before the study was halted, concluding their participation. The responses of this OM to all surveys will be summarised in the following section to demonstrate the utility of this data and to further highlight the value of re-launching the study in future.

Intermediate Offender Outcomes. Throughout all surveys, this OM reported that the offender had displayed a ‘High Level of Risk-Taking Behaviour’, ‘No Purposeful Activity’, and ‘No Motivation to Cease Offending’. Although the OM initially reported that the offender was ‘Somewhat Compliant’ with their pathway plan, they reported within all subsequent surveys that the offender was ‘Not Compliant at All’. When providing their reasoning for these ratings, the OM explained that the offender had committed a serious

further offence soon after the consultation meeting had taken place (pre-formulation), resulting in their recall to prison.

OM Understanding. Within surveys 1, 2 and 3, this OM reported that they ‘Mostly Understood the Case’. However, within Survey 4 (Three-Months Post-Formulation), this OM reported that they ‘Completely Understood the Case’. When asked to describe what had increased their understanding since completing Survey 3, the OM responded:

“Since the last questionnaire, I have referred back to the formulation... and I have been able to match more of the indicators in the formulation against recent and ongoing behaviour”

Within Survey 4, the OM also reported that they had referred back to the formulation ‘Three to Five Times’ since first reading it. This finding along with the above comment suggests that the OM repeatedly utilised the written formulation across the study period to improve their understanding of the case as events unfolded. The OM did not have any suggestions for improving the formulation at any point, suggesting they were also satisfied with its content and quality.

Within all surveys in which they were asked, this OM stated that they ‘Completely Understood the Formulation’ and ‘Completely Understood the Recommendations’. However, when asked within the final survey to describe which formulation recommendations had been actioned, the OM reported that four had been actioned and two had not been possible to action. These two un-actionable recommendations were found to be referrals to two different services, which had both subsequently been rejected. The OM described that they disagreed with these rejections due to what they had learned from the formulation:

“My second referral was also declined as agencies felt that the service user would not engage with the additional offer of support. I am not entirely in agreement with this,

as the PD formulation cites the offender as feeling worthless. It also mirrors his past where he has been repeatedly failed by the system, and a lack of investment has been made for his betterment ... Mental health team continue to have no involvement, which again reinforces the first point about the service user following or being subjected to a well-established pattern of a lack of agency support. This is stated in (the formulation) that if there was such an offer, the offender would likely refuse it, due to his previous experiences of feeling let-down”

This comment validates the OM’s self-reported ratings of their understanding of the formulation and recommendations, showcasing their ability to apply the knowledge gained from the formulation and their ability to comprehend the psychological mechanisms hypothesised within it. However, this finding also indicates that even in instances where a formulation *is* highly understood and is able to improve the OM’s overall understanding of a case, this may not always lead to further positive impacts (such as a higher percentage of recommendations being actioned) due to other barriers.

OM Confidence and Motivation. Within Survey 2, this OM reported that their confidence in managing the case had decreased due to the offender committing a serious further offence after the consultation meeting had taken place:

“I am also struggling with the conscious knowledge that nothing I am capable of will increase his motivation to change, and this gives me cause to doubt myself, and the value of my role in reducing reoffending”

As Survey 2 was completed immediately after reading the formulation, this suggests that the formulation was not able to boost the OMs confidence in managing the case after this setback. However, within the final survey (Survey 4), the OM once again reported being ‘Completely Confident in Managing the Case’. When explaining this final confidence rating,

the OM described that they had attended multiple meetings with various agencies about the offender in question, which had relieved their doubts about managing the case. However, the OM also stated that the formulation had helped them to participate in these meetings more effectively:

“The formulation provided a solid foundation for me to share my findings, backed up with professional input from the consultation process to the other agencies involved”

This suggests that the formulation *was* able to have an influence on OM confidence, in unison with other sources of support. This comment also suggests that although the OM was unable to action two of the recommendations made within the formulation, the ability of the formulation to improve the OM’s understanding of the case may have enabled them to initiate change in case outcomes via other avenues (i.e. by interacting more effectively within wider case discussions).

Supporting this possibility, when asked if the formulation had impacted the way they had managed the case, the OM responded ‘Yes, a Large Amount’. In addition, when asked whether the written formulation had provided any additional benefit over and above the case consultation meeting alone, they again responded ‘Yes, a Large Amount’. The OM took time to further explain their response to this question:

“The consultation is very helpful and allows a sharing of my experience against the professional interpretation of the psychologist. The written case notes add a lot to this further. I can look for the detail, and in recent weeks I have been able to match the indicators on the written case formulation against the current behaviours being exhibited by the service user in prison”

This comment suggests that both the consultation meeting and written formulation provided positive benefits from the OM’s perspective. This comment also again confirms that the OM

continually used the formulation throughout the study period to further improve their understanding of the case, allowing them to make positive impacts in other areas.

Discussion of this OM's Survey Results. Although only one OM completed their participation in full before the study was halted, the responses supplied by this OM were rich in detail, providing a good understanding of the possible impact and utility of formulation within the OPDP⁷³. For example, this OM reported that by regularly referring back to the written formulation, they had been able to continually develop their understanding of the case over time. The OM was also able to actively demonstrate their understanding of this formulation by applying the hypotheses made within it to new developments that occurred within the case. Furthermore, they were able to utilise this improved case understanding to potentially influence the outcomes of case discussions with other agencies. This demonstrates one way in which the formulation's impact on intermediate outcomes (i.e., OM understanding) could eventually lead to more positive final case outcomes.

However, some of the findings were not as positive. For example, this OM reported that they were unable to fully action two of the recommendations made within the formulation (due to rejected referrals), causing them to feel frustrated at times, as evidenced by some of their qualitative comments. This is a topic that should be further explored in future, as if it is often the case that OMs are unable to successfully action the recommendations made within a formulation, this is likely to seriously impact the general utility and effectiveness of formulation within the OPDP. In light of this finding, a subsequent study was conducted (Study 3, p. 208) to investigate the utility and impact of the recommendations made within OPDP formulations in more detail.

⁷³ By completing their participation, this OM's responses also provided a useful test of the materials developed for all time points.

4.4 Study 2 Overall Discussion

Although this study was halted before its completion, the aim of the present chapter was to describe the design of this study, to discuss the data that was collected prior to its termination, and to describe how the data would have been analysed if the study had been successfully completed (i.e., to understand *if* and *how* formulations scoring highly on Audit Tool Standard 3 and/or Audit Tool Standard 4b are able to positively impact offender outcomes). The detailed overview supplied here can serve as a comprehensive ‘blueprint’ that may usefully be implemented in future to refine and further proceed with the study.

The small amount of data that *was* collected prior to halting the study has provided some interesting initial insights that may be fruitful to explore further when possible. For example, although 15 responses were received to Survey 1 (which was completed at the end of the consultation meeting), only one OM reported that they ‘Completely Understood the Case’ at this point, and only three felt ‘Completely Confident in Managing the Case’ at this point. This suggests that consultation alone does not often completely clarify the case for most OMs. This finding supports the research of Knauer, et al. (2017), who identified that although OM self-reported understanding of each case and confidence in managing each case significantly improved post-consultation, there was still room for improvement (post-consultation understanding was rated as 7.20/10 on average and post-consultation confidence was rated as 7.37/10 on average). These findings together further confirm the value of investigating the impact of written case formulation over and above consultation alone.

All eight OMs who completed Survey 2 (immediately post-formulation) qualitatively reported that the formulation had improved their understanding of the case in at least one way. This is a positive finding, suggesting that formulation *does* have a positive influence in this respect. However, only three of these eight OMs reported that they ‘Completely Understood the Formulation’ at this point, suggesting that formulation could have the

potential to create further positive impacts if it were ‘completely understood’ by OMs more often. As previously discussed, this could be achieved with the use of a routine email or phone call made by the psychologist to the OM soon after writing the formulation in order to resolve any outstanding queries the OM may have. This may also resolve some of the other issues highlighted within the descriptive analysis, such as OMs providing simplistic descriptions of formulation content.

Furthermore, two of the OMs suggested within Survey 2 that it would be beneficial to receive a follow-up meeting a few months after receiving the written formulation to assess their progress with the case and to make any needed adjustments. This indicates that OMs may require slightly more support in working with formulations than they currently receive, and is therefore something that should be further considered by the OPDP in future. This type of support may also prove helpful in maintaining OM motivation to manage these complex cases, which was found to decrease in several instances over the short period of time studied. This would be particularly helpful in instances such as the one described above, whereby the OM became demotivated and discouraged after the offender was recalled to prison and after they were unable to fully action some of the formulation recommendations made (i.e., referrals to services). Making OMs more aware of these possible setbacks and/or barriers before they arise may help to mitigate some of the negative feelings experienced by OMs in response to these setbacks.

The OM who completed all questionnaires provided a very helpful and detailed account of how they were able to utilise the written formulation throughout the study period, indicating that OPDP formulation may be capable of positively impacting both intermediate and (eventually) final case outcomes. However, as previously discussed, there were also instances where the formulation written in this case was possibly prevented from making a positive impact, such as when two of the recommendations made within it proved un-

actionable despite the OM's best efforts. This suggests that a deeper investigation is needed into the recommendations made within each formulation; for example, whether the recommendations made within them are feasible, what the common barriers are to completing these recommendations, and whether completed recommendations are able to positively impact case outcomes. The findings of any such research are likely to further improve our understanding of the utility and effectiveness of formulation within the OPDP.

Strengths of the present study include that even though only 14 OMs could be recruited before the study was halted, these OMs represented eight different OPDP teams across Wales. In addition, two further OPDP divisions (East London and Yorkshire) expressed a strong interest in taking part. This suggests that if the study were to be launched again in future, it would be feasible to recruit a broad range of OMs from a variety of OPDP teams across the UK, resulting in a representative sample.

Limitations of the study include that the rating scales used to score some of the intermediate outcomes were not sensitive enough. This problem was identified when OMs qualitatively reported that their outcomes had improved in some instances (i.e., OM Understanding of the Case), but this improvement was not reflected in their quantitative ratings of these outcomes. Therefore, if the study were to be re-launched in future, it should be ensured that any rating scales consist of smaller increments (i.e., 1-10) to make it possible to detect smaller changes in these outcomes.

To answer some of the outstanding questions raised by this study and to partially address one of its original aims (i.e., to understand *if* and *how* formulation may be able to impact case outcomes), a new study (Study 3, p. 208) was designed and successfully completed. Again, the main aim of this new study was to examine the relevance, feasibility, utility, and impact of the recommendations made within a range of OPDP formulations.

These are likely to be factors that affect the overall impact and value of each formulation, indicating that it is of particular importance to explore this topic in more detail.

Chapter 5: Exploring the Relevance, Feasibility, Utility and Impact of Forensic Case Formulation Recommendations

5.1 Study 3 Overview

The main aim of the present study was to address one of the findings of Study 2; that research must investigate the feasibility and utility of the recommendations made within OPDP formulations, as these factors are likely to affect the overall impact and value of these formulations. The present study was also designed to explore if and how the completion of the recommendations made within each OPDP formulation can have an impact on case outcomes. Although it was found within Study 1a that none of the ‘recommendations’ variables analysed (i.e., number of recommendations, type of recommendations) made a significant contribution to the prediction of AP outcomes, this does not confirm that formulation recommendations have no impact. This is largely because the scope of Study 1a did not allow for an in-depth investigation of whether the recommendations made within each formulation were, for instance, relevant to the case or whether they were actioned. Factors such as relevance and implementation are likely to directly influence the extent to which formulation recommendations can positively impact case outcomes. Therefore, it is important to understand the nature of the recommendations typically made within OPDP formulations (i.e., their quality and utility).

In line with HMPPS research restrictions in response to COVID-19⁷⁴ however, this study used purely secondary methods (i.e., no primary data collection was permitted). To adhere to these restrictions whilst also addressing the aims of the study, a two-tailed explanatory multiple-case study was performed, which involved a detailed investigation of the recommendations generated within 10 different OPDP formulations. Specifically, this

⁷⁴ HMPPS National Research Committee requested that all primary research be ceased from March 2020 due to the additional workload faced by staff in response to COVID-19.

investigation concentrated on whether the recommendations were relevant to each case, whether they were feasible to carry out, what the common barriers were to completing the recommendations, how these barriers were overcome, and ultimately, whether the formulation recommendations were able to have any impact on case outcomes (and if not, why not). To heighten understanding of the extent to which differences in these factors may influence outcomes, two different sets of cases were examined: five with positive case outcomes and five with negative case outcomes⁷⁵.

The findings of this research could have the ability to increase the general utility and impact of recommendations made within OPDP formulations. For instance, by identifying how to overcome common barriers to action, more formulation recommendations may be successfully implemented in future. This may, in turn, be likely to result in more positive case outcomes overall.

5.1.1 Research Questions

1. Are the recommendations made within each formulation logical and relevant to the case (i.e., do they each aim to address one of the key risks and/or needs of the offender described within case records and/or the formulation)?
2. Are the recommendations made within each formulation feasible and actionable (i.e., does the OM have the means to complete these recommendations)?
3. What proportion of recommendations made within each formulation are evidenced as having been actioned (i.e., as documented within case records)?
4. What are the common barriers to completing the recommendations made within each formulation (as documented within case records)?
5. Were the recommendations made within each formulation able to positively impact case

⁷⁵ These outcomes will be defined later within the present chapter (p. 213).

outcomes? (i.e., if recommendations *are* completed, do they have the desired effect)?

6. Are there any observable differences in these factors between cases with positive outcomes versus cases with negative outcomes? (i.e., do differences in these factors result in different case outcomes)?

5.2 Study 3 Method

5.2.1 Design

Case studies typically aim to “obtain an in-depth appreciation of an issue, event or phenomenon of interest, in its natural real-life context” (Crowe et al., 2011, p. 1), and can be used to “explain the presumed causal links in real world interventions that are too complex for experimental methods” (Yin, 2018, p. 18). Therefore, as one of the main elements of the current study was to complete a detailed investigation of the events that occurred in a number of cases over time (to understand the impact of formulation recommendations on case outcomes), a case-study method was deemed most suitable and advantageous to use. A *multiple* rather than single case study was performed, as this method allows for the findings of individual case-studies to be compared, often creating richer ‘cross-case’ conclusions which can further deepen understanding of the phenomenon of interest (Burns, 2010). Multiple-case studies are often regarded as being more “compelling” and “robust” than single-case studies (Yin, 2018, p. 54). In addition, multiple-case study methods have been utilised within other areas of forensic psychology with good effect (see Johnstone & Cooke, 2010 for an example).

When selecting more than one case to study, Ebneyamini and Moghadam (2018) state that it is important to consider whether the aim of utilising this method is to produce “literal” case replications (where it is predicted that the findings of each case will corroborate each other), or “theoretical” case replications (where it is predicted that the findings of each

case will differ in some expected way). It is also possible for a study to include both literal and theoretical case replications. For example, Yin (2018) suggests that a ‘two-tailed’ multiple-case study (with the purpose of evaluating a specific intervention) could involve examining one group of cases in which the intervention was delivered, and one group of cases in which this intervention was not delivered. In this context, cases within-groups (i.e., all cases in which the intervention was delivered) would serve as literal replications, whereas cases between-groups (i.e., comparing these cases to those in which no intervention was delivered) would serve as theoretical replications.

As one of the main aims of the present study was to identify differences in the relevance, feasibility, utility, and impact of formulation recommendations generated within cases which had positive versus negative outcomes, this ‘two-tailed’ approach was deemed most useful and appropriate to use.

This two-tailed multiple case study aimed to be primarily *explanatory* in nature (rather than simply exploratory or descriptive). Explanatory case studies can be used to “stipulate a presumed set of causal sequences about ‘how’ and ‘why’ some outcome has occurred” (Yin, 2018, p. 180), typically by “tracing operational procedures over time” (Yin, 2018, p. 10). Therefore, the present research aimed not only to explore *if* formulation recommendations are able to impact case outcomes, but also *how* they may be able to do this (i.e., the mechanism underpinning this).

The study was conducted using pre-existing data available on probation systems. From conducting Study 1a, the researcher was already aware of the extensive amount of information contained on these systems for each OPDP case, including case formulations, parole reports, psychological evaluations, risk reports and calculations, referrals, and a log of all contact made with the offender (typically recorded by the OM of each case). As the researcher had full access to these systems (via a secure NPS laptop) to gain a detailed insight

into each event that occurred within each case over time, a comprehensive multiple-case study could be performed even in the absence of primary research methods.

5.2.2 Participants

5.2.2.1 Number of Cases

Yin (2018) recommends that within two-tailed multiple-case study designs, at least two cases from each ‘tail’ should be examined to enable literal replications as well as theoretical ones. Although there is no existing formulaic method to select the exact number of cases required, Yin argues that five or six literal replications are likely to provide a high degree of certainty in the results obtained. Consequently, the researcher examined 10 different cases in total; five of which had positive outcomes, and five of which had negative outcomes.

5.2.2.2 Case Selection

To select the 10 cases, a set of inclusion criteria was devised. Descriptions of these criteria and the rationale behind them can be viewed in Table 24.

A dataset containing all OPDP cases in which a level 2 formulation had been written between 2018-2019 was then sourced and provided to the researcher by the Wales Research and Evaluation Officer. In total, this file contained 787 unique cases. To select 10 suitable cases to examine whilst ensuring this process remained unbiased, each case was allocated a random number using the RAND function in excel before then being sorted into ascending order. Starting from the top of this list, the formulation associated with each case was sourced by the researcher with the use of the secured NPS laptop before being scored by the

researcher on both Audit Tool Standard 3 and Audit Tool Standard 4b⁷⁶. Only those cases scoring highly (≥ 3) on both of these Audit Tool standards were retained for further consideration for inclusion into the study.

For each case successfully meeting these criteria, the researcher used information contained on probation databases to ascertain whether the outcome of the case had been 'positive' or 'negative'. Cases with 'positive' outcomes were defined as those in which the offender in question had no record of breaching licence conditions or receiving any warnings in the year following formulation. Cases with 'negative' outcomes were defined as those in which the offender was recalled to prison within the year following formulation. By selecting cases from these two extremes (i.e., those with 'very positive' outcomes and those with 'very negative' outcomes), it was expected that any differences in the relevance, feasibility, utility or impact of formulation recommendations would be more easily identified, potentially revealing how and why formulation recommendations can positively impact 1-year outcomes in some cases but not others.

For each case in the dataset, this screening process was repeated until five suitable cases with 'positive' outcomes were identified and five suitable cases with 'negative' outcomes were identified. Corroborating the findings of Study 1a, it took longer to identify cases with negative outcomes in which the associated formulation scored highly on both Audit Tool Standard 3 and Audit Tool Standard 4b. To recap, the findings of Study 1a indicated that formulations scoring more highly on Audit Tool Standard 3 and (potentially) Audit Tool Standard 4b were associated with more positive offender outcomes.

Each of the 10 selected cases represented a male offender active on the OPDP

⁷⁶ In keeping with the results of Study 1a and Study 1b. The full rationale behind this decision is described within Table 24.

caseload between 2018-2019. All 10 offenders were between the ages of 25-50 at the time of formulation, and all had a history of committing violent and/or sexual offences.

Table 24*Inclusion Criteria for Multiple-Case Study*

Inclusion Criteria	Rationale
1. Case must have an associated level 2 OPDP formulation on file	As the study was concerned specifically with recommendations made within OPDP formulations, each selected case was required to have an OPDP formulation on file. Only level 2 formulations were deemed suitable for inclusion within the current study, as (as previously discussed) level 1 formulations are unsuited for scoring on Audit Tool Standard 4b ⁷⁷ (NOMS & NHS, 2015b), and level 3 formulations are very rarely completed within the OPDP ⁷⁸ . It was considered important to compare recommendations across formulations of the same level, so that any differences identified (i.e., in terms of the impact of these recommendations) could not be simply attributed to differences in formulation level. In addition, the findings of Study 1a were used to shape the inclusion criteria for the present study (explained further below). As Study 1a focused on level 2 formulations, it was deemed most appropriate to continue this theme for continuity, ensuring that findings would be fully compatible across studies.
2. The level 2 formulation must have been completed between 2018-2019	It was considered important that the cases examined were recent, so that any findings obtained would be reflective of ‘typical’ practice as it currently exists. Formulations completed within 2020 were not sought however, as these were unlikely to reflect ‘typical’ practice due to the anomalous outbreak of COVID-19 within this year.

⁷⁷ The relevancy of this point is described further below.

⁷⁸ The researcher initially considered examining level formulations within the present study, but these were found to be very few in number, completed only within highly specialised environments, and not easily accessible to the researcher.

Table 24 Continued

Inclusion Criteria	Rationale
3. The level 2 formulation must score highly (≥ 3) on both Audit Tool Standard 3 and Audit Tool Standard 4b (as assessed by the researcher).	The findings of Study 1a indicated that higher scores on Audit Tool Standard 3 and (potentially) Audit Tool Standard 4b may be associated with more positive offender outcomes. These findings were due to be further explored within Study 2, but this was not possible due to the outbreak of COVID-19. Therefore, as the influence of these two Audit Tool standards on case outcomes is still unknown, it was deemed important within the present study for all selected cases to have comparable scores on these two Audit Tool standards. By eliminating this variance, it can be ensured that any differences identified between cases with ‘positive’ versus ‘negative’ outcomes are not due to differences in scores on these formulation standards. The further intent of the researcher in this regard was to examine why some cases may still result in negative outcomes even when the formulations written in these cases score highly on both Audit Tool Standard 3 and Audit Tool Standard 4b (i.e., could the reason for this be due to differences in the relevance, feasibility, utility, or impact of the recommendations made within these formulations as compared to formulations written in cases with positive outcomes?).

5.2.3 Procedure

Before data collection began, the researcher sought and was granted ethical approval to conduct the study from both HMPPS National Research Committee (Ref. 2020-077) and University of Swansea ethics committee (Ref. 4891).

To ensure that the study was methodically sound and that it best adhered to the principles of evidence-based practice, data collection procedures were carried out in accordance with comprehensive case study guidance developed by Yin (2018). In line with this guidance, the researcher first developed a comprehensive case study protocol (Appendix O) which assisted in planning and conducting data collection. In addition to clearly outlining the main aims of the study and considering how the relevant data would be accessed, this protocol contained a list of key questions to be answered in relation to each case, accompanied by likely sources and possible locations of evidence that would address these questions. Within the present study, these ranged from simple questions such as ‘How many recommendations were made within the formulation?’ to more complex questions such as ‘What evidence is there that the recommendations made within the formulation had an impact on the outcome of the case?’. Together, Yin (2018) states that the answers to these key questions should make it possible for the researcher to sufficiently address the study’s main research questions. Finally, the research protocol contained a clear outline of the data analysis procedures that would be used and a plan of how the data would be written up into a final report. The aim of this was to make data collection much more focused and efficient.

Once this protocol was drafted, the first case was examined. This first case was treated as a ‘pilot’ case study, used to test the data collection procedures outlined within the study protocol⁷⁹. This better ensured that the data collection would run smoothly and

⁷⁹ As the results of this pilot case study indicated that no considerable changes to the protocol were needed, this case was retained within the final dataset.

consistently. Once the protocol had been finalised, data collection for each case proceeded as follows.

5.2.3.1 Data Collection

To facilitate the examination of information recorded for each case, the researcher was provided access to National Delius (nDelius, NPS case management system). As well as containing many types of documentation relating to each case, nDelius contains a log of “every occurrence, event, or face-to-face contact relevant to an offender” (Beaumont Coleson Software & System Solutions, n.d, p. 2). This information is typically recorded by the OM of each case, but can also be recorded by other agencies or staff members who have contact with the offender. The researcher was also provided access to the Offender Assessment System (OASys), which is a system for assessing the risks and needs of each offender (HMPPS, 2019). OASys contains a wealth of information about each case which is used to assess these risks and needs as accurately as possible. With the use of these two systems, the researcher was able to gain the necessary information to answer all of the key questions outlined in the study protocol.

For each of the 10 selected cases, the researcher first accessed the level 2 formulation written for the case and examined this in detail, with a particular focus on the recommendations made. To gain the context needed to judge the relevance of these recommendations, the researcher then accessed and examined all information recorded about the case on nDelius and OASys within the six months preceding the formulation. To judge the utility and impact of these recommendations, the researcher additionally accessed and examined all information recorded on nDelius and OASys within the 1-year period following the formulation. This timeframe was chosen for several reasons. Firstly, guidance produced by the Kellogg Foundation (2004) in regard to the analytical framework adopted by the

current study (described later) stipulates that outcomes of the type examined within the present research should be attainable within 1-3 years (short-term outcomes). In addition, the researcher considered it important for the findings of the study to be applicable to current practice; although formulations pre-dating 2018 may have provided more detail about long-term outcomes, these formulations are likely to have been written in a different manner due to judgements about best practice changing and evolving over time. Finally, the amount of time and resources available to the researcher was an important factor when considering the timeframe that could be studied in enough detail to perform comprehensive case studies.

Each piece of information collected by the researcher in relation to this 18-month period within each case was logged in a methodological and organised way, using a ‘case study database’ created in Microsoft Excel. In sum, this database contained a detailed overview of each case, descriptions of each piece of information accessed, the location of each piece of information accessed, and any initial thoughts about how this information may address key questions outlined within the case study protocol. The use of this case study database ensured that a thorough chain of evidence could be maintained throughout the data collection and data analysis process, ensuring that any conclusions later drawn could be easily traced back to the evidence they were based upon (Yin 2018).

5.2.3.2 Data Analysis by Case

Once all available information about a case had been logged in the evidence database, the researcher re-read all this information several times to develop familiarity and to identify any initial patterns and insights that may help to answer the key questions in the study protocol.

Smaller/more straightforward key questions were addressed first in each case (i.e., “What evidence is there that the recommendations made within the formulation were

actioned?"). This was done by examining the case study database to identify any information relevant to the question (for example, searching for referral reports to ascertain whether recommended referrals were made). Wherever possible, each piece of case information considered was based on more than one source of evidence (known as data triangulation). This was done to further increase the validity of findings obtained by increasing the likelihood that the events of interest were depicted accurately (Yin, 2018). Tentative conclusions were then drawn from these findings.

For more complex questions outlined within the case study protocol (i.e., "Do case formulation recommendations have an impact on case progression? If so, how? If not, why not?"), all relevant information identified within the evidence database for each case was sorted into chronological order using the date of each nDelius and OASys entry. Visual displays and flowcharts also aided in this process (see Appendix P for an example). This method provided the researcher with a detailed understanding of which events were likely to have impacted case progression, based on the weight of all available evidence. This is a major benefit of performing an *explanatory* multiple-case study⁸⁰, as performing this type of case study alongside chronological sequencing can aid the researcher in identifying "presumed causal sequences" (Yin, 2018, p. 231).

The use of chronological sequencing also enabled the researcher to identify and consider any possible rival explanations for the resultant findings (i.e., whether the influence of some other factor was the reason for progression/lack of progression in each case). The use of this method usually increases the validity of a case study (Yin, 2018), better ensuring that any observed outcomes are the result of the intervention or activity of interest.

This process of examining and analysing information was repeated until all key

⁸⁰ As opposed to performing an exploratory or descriptive case study.

questions outlined in the study protocol had been sufficiently answered for each of the 10 cases.

5.2.3.3 *Within-Group Analysis*

Yin (2018) states that the main aim of a multiple-case study is to develop a broad explanation that fits all cases generally, even though the specific details of individual cases will vary. Therefore, cross-case analysis was next performed on the findings of the five cases with ‘positive’ outcomes. The aim of this analysis was to identify any cross-case patterns in the relevance, feasibility, utility, or impact of the recommendations made within the formulations associated with these cases. This process began with a set of initial hypotheses formed from the findings of the first case, which were then continually developed and updated as evidence from each of the additional four cases with positive outcomes were considered⁸¹. This process allowed for the identification of any literal replications across these cases. This process was then repeated for the five cases with ‘negative’ outcomes.

5.2.3.4 *Between-Group Comparison*

Conclusions resulting from each group of cases (positive and negative) were then compared to identify any observable between-group differences in the relevance, feasibility, utility, or impact of formulation recommendations. This enabled the researcher to recognise whether theoretical replication had been successful. It was believed that the conclusions of this full cross-case synthesis would enable the researcher to answer a variety of questions including *if* and *how* formulation recommendations are able to impact case outcomes, how the relevance, feasibility, and utility of these recommendations may contribute to this impact,

⁸¹ This process of analysis will be explained further in the following section.

what the common barriers may be in ensuring recommendations possess these qualities, and how these barriers might be effectively reduced in future.

5.2.3.5 Analytical Framework

To perform this data analysis, a range of analytic techniques were used. The first was ‘explanation building’ (Yin, 2018), which involves gradually building an explanation of a case to explain ‘how’ and ‘why’ a certain outcome was achieved. Within the current study, this involved understanding whether the recommendations made within each formulation contributed to the outcome of each case, and if so, what the ‘causal sequence’ was behind this. The end-goal of this explanation building technique is to develop a set of hypotheses about these causal sequences (i.e., *how* formulation recommendations can impact outcomes), which can then be confirmed with (possibly experimental) further study.

To perform this analytical technique, Yin (2018) recommends that the researcher first make a tentative explanatory statement about this causal sequence. The researcher can then compare evidence from the first case study with this tentative explanatory statement and revise and develop it as appropriate. When performing a multiple-case study, this statement should then be compared against subsequent evidence from each additional case study until an all-encompassing explanation of the combined evidence is reached.

As described within the previous section, chronological sequencing was also used as a data analysis technique. Yin (2018) states that this technique is also useful for investigating causal relationships, because “the basic sequence of a cause and its effect cannot be temporally inverted” when examining events chronologically (p. 184). Within the present study, the events that occurred within each case (from six months before the formulation to 1-year after the formulation) were therefore arranged in chronological order. This enabled the researcher to better examine how the formulation recommendations may have impacted the

case outcome (for example, by understanding whether the recommendations made within the formulation may have altered the way in which the case was being managed or instigated change in the offender's engagement or behaviour).

This chronological sequencing method also facilitated the use of logic modelling, which is a technique that allows the researcher to “operationalise a complex chain of occurrences or events over an extended period of time, trying to show how a complex activity, such as implementing a programme, takes place” (Yin, 2018, p. 186). Logic modelling takes chronological sequencing one step further, aiming to show how the outcome of one event can *cause* the next event to happen, which in turn can produce its own outcome (cause-effect-cause patterns, Yin, 2018). Due to this, logic modelling can be used as an evaluative tool (Morgan-Trimmer et al., 2018), allowing researchers to develop an understanding of “what works and why” (Kellogg Foundation, 2004, p. 1). This technique is therefore highly relevant for use within the present study, as it is likely that if formulation recommendations *can* impact case outcomes that this is an *indirect* impact, with recommendations first impacting smaller or more immediate outcomes (e.g. the OM's way of managing the offender) which in turn then impact larger and more long-term outcomes (i.e., final case outcomes).

With the use of these analytical techniques, the researcher was able to conduct the multiple-case study in a detailed and methodological manner, carefully tracking the progression of events over time, identifying likely cause-effect-cause relationships between events and outcomes, and building explanatory hypotheses to be further tested in future.

5.3 Study 3 Results

In this section, the findings of the full cross-case synthesis (positive versus negative cases) will be presented and discussed, with anonymised evidence from individual cases

provided to support all arguments made. To retain clarity, each topic of interest will be addressed in turn (i.e., relevance of recommendations, utility of recommendations, impact of recommendations) and differences in cases with positive versus negative outcomes will be examined. All results will then be combined and presented visually in a logic model to demonstrate the hypothesised process by which formulation recommendations can indirectly impact case outcomes. In addition, common (but preventable) barriers to the effective implementation and impact of formulation recommendations will be identified and solutions to these barriers will be offered.

5.3.1 Overview of Cases

Each of the 10 cases selected for investigation represented a male offender active on the OPDP caseload between 2018-2019. Within this period, the OM of each of these cases had requested and attended a case consultation with an OPDP psychologist. OMs had requested this consultation for a variety of reasons; to understand the offender's difficulties in more detail, to identify new ways of engaging or supporting the offender through a period of instability, or to identify suitable post-release pathways. In line with standard procedure, the content of each case consultation was subsequently written up into a case formulation and uploaded onto nDelius within an average of 3 weeks⁸².

All 10 offenders were or had previously been in custody for violent or sexual offences. Three of these offenders were in custody at the time of their consultation and formulation and were subsequently released within the 1-year period following this; two of them were recalled to custody within this same year, resulting in 'negative' outcomes, whilst

⁸² Although this time frame ranged widely from 2 days to 8 weeks.

one of them had a 'positive' outcome and remained within the community⁸³.

The remaining seven offenders were already in the community at the time of their consultation and formulation; three of them were recalled to custody in the 1-year period following this, resulting in 'negative' outcomes, whereas four of them had a 'positive' outcome and remained within the community.

5.3.2 Number of Recommendations

In all formulations examined, the recommendations section was located at the end of the document. Recommendations were typically distinguishable from each other due to being numbered or listed in bullet point form. The number of recommendations made within each formulation was tallied and compared across cases. On average, slightly more formulation recommendations were made in cases which had positive outcomes than in cases which had negative outcomes (eight versus six recommendations⁸⁴).

5.3.3 Relevance of Recommendations

To assess the relevance of the recommendations made within each formulation, the researcher first examined all OASys and nDelius entries recorded within the 6-month period prior to the time each formulation was written. For each case, the researcher then assessed whether each recommendation matched a specific risk or need of the offender as highlighted within these case records. On the basis of these findings, the researcher sorted all recommendations into three categories: 'highly relevant to the case', 'moderately relevant to the case', or 'not a recommendation'. The first category (highly relevant) represented

⁸³ As this third offender was still in custody for the first two months of the 1-year period following consultation and formulation, this reduced the period in which it was possible for him to be recalled within this year. Due to this, the researcher examined all records pertaining to this offender for an additional two months after the 1-year period had ended to authenticate this positive outcome. It was confirmed that within these two additional months, this offender was not recalled to prison and was not recorded as breaching any licence conditions.

⁸⁴ The number of recommendations made in cases with positive outcomes ranged from 6-10, whereas the number of recommendations made in cases with negative outcomes ranged from 5-6.

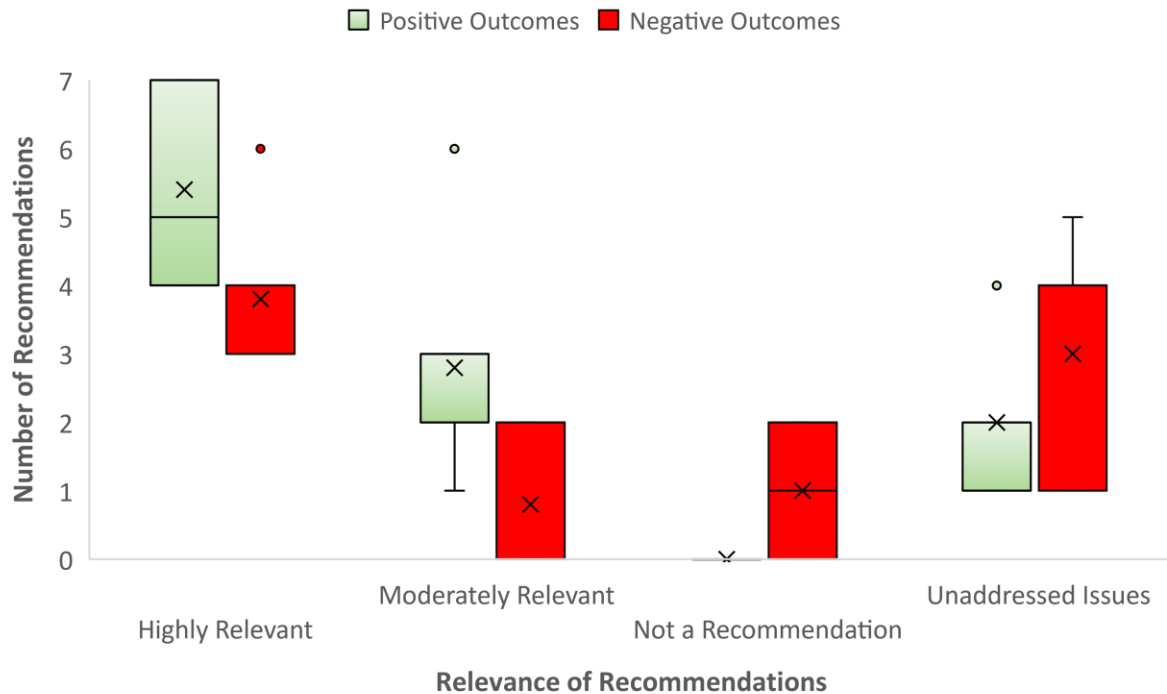
recommendations that clearly aimed to address a current risk or need of the offender as highlighted within case records, such as “OM to seek permission to contact the offender’s sister to establish if she may be a supportive influence, as the offender anticipates a lot of contact with her once released” (Case 3). The second category (moderately relevant) represented recommendations that were generally relevant but did not aim to address a specific risk or need of the offender as highlighted within case records, such as “work with the offender using a collaborative, supportive approach” (Case 6). As there were no recommendations found that were not relevant at all, the third category (not a recommendation) represented instances where something was included as a recommendation (i.e., placed in the recommendations section and numbered/bullet pointed as standard) but simply reported an action that had already been made, such as “case has been referred to WISDOM⁸⁵” (cases 7 and 10).

When comparing these categories across cases, it was found that only cases with negative outcomes (three of these cases) had formulation recommendations which fitted into this third category. In cases with positive outcomes, all formulation recommendations made were associated with some type of future action. When examining the number of ‘highly relevant’ recommendations made in each case, it was also found that on average, slightly more ‘highly relevant’ formulation recommendations were made in cases which had positive outcomes than negative outcomes (five versus four highly relevant recommendations respectively; see Figure 8).

⁸⁵ Wales Integrated Serious and Dangerous Offender Management (WISDOM). The aim of this service is to “reduce reoffending and the risk of serious harm via a multi-agency team comprising the Police, National Probation Service, forensic psychological services and other local partners” (IOM Cymru, n.d).

Figure 8

Boxplot Displaying the Number of Relevant Formulation Recommendations Made within Cases with Positive Versus Negative Outcomes



Note: As described below, ‘Unaddressed Issues’ refer to particular areas of risk or need identified in each case which would have been relevant to address within the formulation recommendations but were not.

As well as understanding the relevance of recommendations that *were* made within these formulations, the researcher also attempted to examine whether there were any particular areas of risk or need in each case which would have been relevant to address within the recommendations section but were not. At least one such area was identified within each case, including issues surrounding substance abuse, lack of accommodation, violence in relationships, pro-criminal attitudes, and mental illness. In cases with negative outcomes, more unaddressed issues were identified than in cases with positive outcomes (three versus two unaddressed issues on average; see Figure 8). This is an important aspect to consider, as

in at least one case with a negative outcome (Case 6), case records suggest that the OM spent much of the 1-year period following consultation and formulation figuring out how to tackle issues that were not addressed by the formulation recommendations (i.e., substance misuse, lack of accommodation), leaving no time to concentrate on completing the recommendations that *were* made.

Although it could be argued that commonly unaddressed issues (i.e., substance misuse, lack of accommodation) were not addressed within these formulations due to an assumption that they would be addressed by other services (i.e., alcohol and drug services, housing authorities), this was not always the case. For instance, although the offender in Case 6 was directed to a drug and alcohol service on release from custody for his substance misuse problems, he later told his OM that he felt this service was only there to drug test him and not to help him complete any “meaningful work looking at why he uses substances”. It therefore would have been helpful to address these substance misuse issues within the formulation *as well as* with the use of a standard drug and alcohol service. This approach would also have likely been useful within many of the other cases examined, as although nine out of the 10 offenders were described either on OASys or nDelius as having substance misuse issues which related to their offending, only *one* of the formulations associated with these cases included a recommendation aimed at addressing these substance misuse issues (Case 5). The only other case in which the offender completed any substance misuse work with their OM was Case 4, but this began before the case consultation occurred and was therefore not a formulation recommendation. Interestingly, both Case 4 and Case 5 had positive outcomes.

One potential alternative or additional reason for the lack of formulation recommendations targeting substance misuse issues is that in many of these cases, the formulation itself did not include all relevant information available about these issues and the circumstances under which they developed. For instance, in Case 1 it was described on

OASys that the offender's index offence occurred shortly after his substance use significantly increased in response to his sister's death. In Case 7, it was described on OASys that the offender was sexually abused as a child and so began to use alcohol to prevent flashbacks relating to this. If this information had been included as part of the formulation in these cases, it may have been more likely for the recommendations to have targeted or addressed these substance misuse issues, as they are related to psychological issues that may not be possible to address solely within alcohol and drug services. It is not known why this information was commonly found to be absent from formulations; one reason could be that because formulations are commonly constructed by psychologists with only the information provided to them by the OM, important details may have been overlooked. An alternative reason could be that because substance misuse issues are so common amongst this population, it may be an issue that is commonly neglected in favour of addressing issues that are more unique or distinctive to each case (as these may be considered to be more relevant). In future, this issue could be improved if psychologists ensure that when gathering information during consultation, they ask the OM to consider whether any of these commonly occurring issues are relevant to the offender, and if so, whether any information is known about how these issues first developed. This would better ensure that *all* of the currently relevant risks and needs of the offender are addressed within the formulation rather than only the most unique, complex, or memorable ones.

5.3.4 Feasibility of Recommendations

To assess the feasibility of the recommendations made within each of the formulations (i.e., how feasible they were for the OM to action), two factors were considered. The first was whether each recommendation was specific or concrete enough to action (i.e., whether the action to take was clearly defined), and the second was whether each

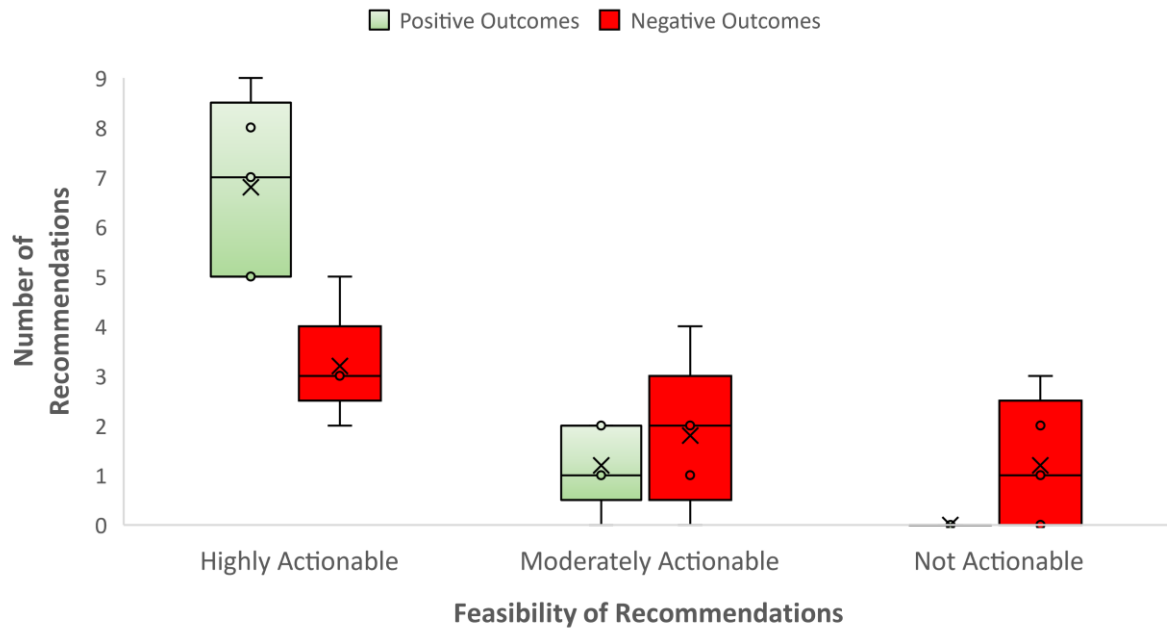
recommendation was *possible* to action (i.e., whether there were any known barriers to action).

When assessing the first factor, all recommendations were again sorted into one of three categories: 'highly actionable', 'moderately actionable', or 'not actionable at all/not a recommendation'. The first category (highly actionable) represented recommendations which outlined a specific action to take and clear instruction on how to go about this, such as "OM to share the formulation with the approved premises and discuss with them what has worked well for her in engaging with the offender before he goes there" (Case 3). The second category (moderately actionable) represented recommendations that outlined an action but not any instruction or clarification on how to go about this, such as "Would benefit from engaging in work to address self-esteem" (Case 9). The third category (not actionable at all/not a recommendation) represented recommendations that were not possible to action, or as before, represented instances where something was included within the recommendations section but did not advise of any action to take. An example of a recommendation that was not actionable at all comes from Case 7, in which a recommendation was made specifying how the OM should engage with the offender after a particular referral had been accepted. Within this formulation however, a note from the psychologist was written immediately below this recommendation to state that in the time between consultation and formulation, the referral in question had been rejected. The recommendation regarding how to engage with the offender after acceptance of this referral was therefore never possible to action, and no further recommendations were made in its place.

When comparing these categories across cases, it was found that on average, many more 'highly actionable' formulation recommendations were made in cases which had positive outcomes than in cases which had negative outcomes (seven versus three highly actionable recommendations; see Figure 9).

Figure 9

Boxplot Displaying the Number of Feasible Formulation Recommendations Made within Cases with Positive Versus Negative Outcomes



When exploring the language used to describe these recommendations, it was observed that much more proactive language was used in formulations written for cases with positive outcomes than those written for cases with negative outcomes. For instance, all except two of the 31 recommendations made across the five cases with positive outcomes specifically instructed that an action should occur (i.e., OM to chase up mental health assessment (Case 2); engage offender in work to identify his goals (Case 4); promote offender to develop interests and meaningful activities including employment (Case 1)). Two of these cases also organised the recommendations in terms of their priority, better ensuring that important actions would be carried out first.

In contrast, recommendations made across the five cases with negative outcomes tended to be much more tentative, often simply making suggestions for actions that *could* occur, rather than *should* occur (i.e., offender *may* benefit from engaging in interventions to

help him to develop skills to manage his emotions (Case 6); OM to *consider* contacting a drug and alcohol service (Case 9); it *may* be helpful to discuss the instability of the offender's relationships (Case 8)). Furthermore, in one of these formulations (Case 8), the recommendations section was preceded by a note stating that these were "not intended as recommendations but rather as suggestions to consider". None of the cases with negative outcomes organised formulation recommendations in terms of their priority.

These findings allude to a divide between the two groups of cases in terms of what the purpose of the formulation recommendations was perceived to be. In cases with positive outcomes, this purpose included identifying the next logical steps for the OM to take in order to maximise the chances of managing/continuing to manage the case effectively. In cases with negative outcomes, this instead seemed to be to initiate or facilitate further discussion or thought around what *could* work or what *might* be effective in managing the offender, which the OM could then further consider at their own discretion.

5.3.5 Utilisation of Recommendations

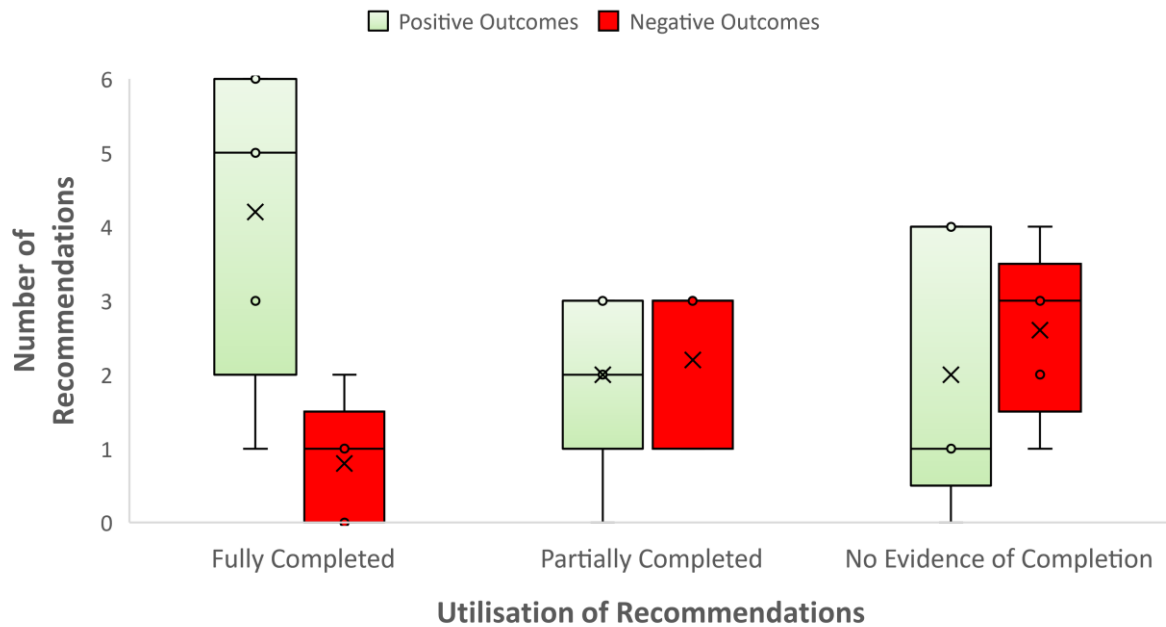
To understand whether these two different approaches led to differences in the utilisation of recommendations, the researcher investigated whether the recommendations made within each formulation were actually actioned or not. This involved assessing all entries made on nDelius and OASys within the 1-year period after the consultation meeting had taken place in each case. Any activity relating to each formulation recommendation was extracted and anonymously recorded within the evidence database. All evidence was then organised in chronological order (using the date of each nDelius or OASys entry) to make it easier to combine information from different sources. This again ensured that wherever possible, conclusions were based on more than one source of evidence to maximise accuracy. After all data relating to each recommendation was logged and assessed, the researcher again

sorted each of these recommendations into one of three categories; ‘fully completed’, ‘partially completed’, or ‘no evidence of completion’. The first (fully completed) represented recommendations which were clearly evidenced as having been actioned within the 1-year period post consultation. For example, the recommendation “To revisit license conditions in order to reinforce the reasons for their implementation” (Case 4) was evidenced by a clear nDelius entry made by the OM within two weeks of the consultation meeting describing how she had discussed each licence condition in detail with the offender and had explained the reasons for why these had been made. The second category (partially completed) represented recommendations that were evidenced as having been attempted in part within the 1-year period post consultation, but that were not evidenced as having been fully completed. For example, regarding the recommendation “To encourage the offender to revisit and practice the skills he learned during the TSP programme” (Case 9), an nDelius entry was made by the OM stating that they had encouraged the offender to think about the skills he had learned in TSP (Thinking Skills Programme), but there was no mention of encouraging the offender to practice these skills. The third category (no evidence of completion) represented recommendations for which there was no evidence at all that the action had taken place. For example, for the recommendation “Encourage the offender to develop a lifeline” (Case 1), no evidence was found that the offender had completed this lifeline or that they had been encouraged to do so.

When comparing these categories across cases, it was found that many more recommendations had been ‘fully completed’, on average, in cases with positive outcomes than in cases with negative outcomes (four versus one fully completed recommendation/s; Figure 10).

Figure 10

Boxplot Displaying the Number of Formulation Recommendations Utilised within Cases with Positive Versus Negative Outcomes



When examining this finding in more detail, it was observed that differences in the number of ‘fully completed’ recommendations between cases with positive versus negative outcomes could not simply be attributed to offenders with negative outcomes being recalled to prison before the OM could action the formulation recommendations made in these cases. This is because firstly, within each of the five cases with negative outcomes, offenders were not recalled to custody (on average) until five months after the consultation meeting had taken place (range: 2-10 months), indicating that OMs had likely had sufficient *time* to put the formulation recommendations into action. Strengthening this point further, when examining cases with positive outcomes, it was found that in the majority of instances where recommendations had been ‘fully completed’, these recommendations had been completed within the initial period following consultation and formulation (33 days post-consultation on average). This suggests that the differences identified cannot be attributed to time restrictions.

To understand whether this difference in utilisation was instead due to cases with negative outcomes having fewer relevant and feasible formulation recommendations than cases with positive outcomes, this finding was further investigated in this regard. However, it was identified that although fewer formulation recommendations had been made within negative cases overall, the *percentage* of recommendations rated by the researcher as being both highly relevant and highly feasible was relatively similar between the two groups of cases (56% versus 54%). Exploring this point further, when the relevance, feasibility, and utilisation of each recommendation was combined, it was found that 65% of all highly relevant and feasible recommendations made within positive cases were fully completed, compared with only 26% of highly relevant and feasible recommendations made within negative cases. This suggests that the lower completion rate of recommendations in negative cases also cannot be attributed solely to differences in the relevance or feasibility of these recommendations.

For cases with negative outcomes, in many instances, recommendations that may well have had the potential to have a positive impact on the outcome of the case were not carried out. To understand whether this was due to barriers faced when attempting to complete these recommendations, the researcher further examined all cases with negative outcomes in this regard. In many of these cases however, no particular barriers were identified. To demonstrate this, several case examples are provided below:

Within Case 6, one of the recommendations that was *not* fully completed was for the OM to encourage and enable the offender to partake in meaningful activity. The offender was described within nDelius records as being open to this, requesting to be allowed to pursue employment or to be referred to an employability service. However, there is no evidence that these requests were facilitated, and a subsequent nDelius entry made by the OM stated that she believed the offender should spend more time settling into the community before taking

on employment. Within a month of being released, it was documented within an nDelius entry that the offender had raised some concerns with his OM, stating he was often bored and had nothing to do except drink alcohol, which was related to his risk of offending. The offender was recalled to prison soon after this due to attending appointments under the influence of alcohol.

In another example (Case 7), one of the formulation recommendations that was not fully completed stated that the OM should collaboratively construct a relapse prevention plan with the offender before his release. As the offender's risk of reoffending was related to his use of substances to deal with past childhood trauma, the aim of this relapse prevention plan was to identify triggers that the offender was likely to encounter in the community, and to identify early warning signs that may be indicative of an imminent relapse. However, a change of OM occurred immediately after the formulation was written, and no evidence was found to suggest that this relapse prevention plan was ever discussed or developed. The reason for recall in this case was recorded as the offender relapsing into substance abuse due to being unable to cope with re-occurring thoughts of previous trauma. The offender later described to his OM that these thoughts had returned when he ran out of medication and developed insomnia, which are clear early warning signs that could have been mitigated with the use of a relapse prevention plan.

As these two examples demonstrate, in many of the instances where formulation recommendations were not fully completed in cases with negative outcomes, there was no particular reason for this inaction (i.e., no considerable barriers were identified). Although in Case 7 a new OM was assigned to the case immediately after the formulation was written, this should not have prevented the recommendations from being actioned. This is because one of the main uses of a formulation document is to enable continuity of care in each case by providing a clear record of what was discussed within the most recent case consultation

meeting, enabling all staff who work with the offender to understand what next steps should be taken to best facilitate positive progress. However, to understand whether change of OM may indeed be a (non-formulation related) contributing factor to poor outcome, all 10 cases were examined to identify the number of OM changes that occurred in the year after each consultation and formulation took place. Interestingly, more OM changes were identified in cases with *positive* outcomes than negative outcomes (4 vs 2 cases), suggesting that it may be consistency of care that is the key to success, rather than consistency of caregiver. The findings from Case 7, therefore, suggest that continuity of care within the OPDP should be better monitored. For example, it would be beneficial for standard procedure to involve specifically directing new OMs to the most recent formulation completed in each case so that any outstanding actions can be completed, and the possible benefits resulting from these actions can be gained.

Further investigation was next completed for cases with positive outcomes, to better illuminate any differences in the reasons for why highly relevant and feasible recommendations were not completed in these cases (although these recommendations were generally completed more frequently than in cases with negative outcomes). It was found that in contrast, when a highly relevant and feasible recommendation was *not* fully completed in cases with positive outcomes, there was typically some valid reason for this, such as an insurmountable barrier. However, in many of these instances, the OM tried to overcome the barrier by achieving the intent of the recommendation with the use of alternative methods. Again, case examples are provided to demonstrate this point:

Within Case 5, it was recommended within the formulation that the OM should develop a relationship with the parent of the offender in order to monitor the offender's developing romantic relationships more closely (relationships being a significant risk factor for the offender in this case). The OM was not able to reasonably complete this

recommendation due to the parent falling ill soon after the formulation was written. However, to compensate for this, the OM instead attempted to develop a relationship with the offender's sibling, and also made sure to probe the offender much more regularly about any relationships he may be developing. In this case, it is clear that although the recommendation could not be completed as planned, the intended outcome of this recommendation (i.e., enhanced monitoring of developing relationships) was still achieved.

In Case 2, it was recommended within the formulation that to facilitate further progress in the case, the OM should try to gain a commitment from the offender to attend all probation appointments sober. Although the offender was not motivated enough to make this particular commitment, the OM was aware that in order for the offender to have contact with his daughter, he was required to provide clean tests at his appointments with an alcohol service. The OM therefore first completed another of the formulation recommendations, which was to complete motivational interviewing with this offender to encourage him to provide a clean test each week at this alcohol service. The OM then liaised with this alcohol service to ensure that probation appointments were always scheduled for the same day of the week as the alcohol service appointments, increasing the likelihood that the offender would also attend probation appointments sober.

In sum, the evidence examined at this stage of the analysis indicated a clear pattern of differences between cases with positive outcomes versus cases with negative outcomes in terms of how formulation recommendations were utilised. In cases with positive outcomes, many more recommendations that were rated by the researcher as being highly relevant and feasible were completed, and in cases where this was not possible, this was often compensated for by the OM with the use of alternative methods (i.e., by using active problem-solving techniques to overcome barriers). In cases with negative outcomes, highly relevant and feasible recommendations were much less likely to be fully completed even in

the absence of any identifiable barriers. As the examples of cases with negative outcomes have indicated, by leaving these recommendations incomplete, key opportunities to make positive progress in these cases may have been missed. It would therefore be valuable for future research to delve into the potential reasons behind inaction in cases such as these. For example, it could be the case that the completion of recommendations and the overcoming of barriers is impacted by the quality of the OM-offender relationship in each case (i.e., poor-quality relationships may hinder the completion of certain recommendations in some way).

5.3.6 Impact of Recommendations

As well as examining the potential negative impact of recommendations that were *not* fully completed, the researcher also wished to understand whether there were differences between cases in terms of the positive impact of recommendations that *were* fully completed. For instance, although more recommendations were completed in positive cases on average, did these actions actually contribute to the positive outcome that was achieved? To investigate this, the researcher again examined all nDelius and OASys entries recorded within the 1-year period after each consultation meeting took place. Within these records, the researcher identified and recorded all information relating to how completed recommendations may have influenced the outcome of each case.

Within cases with positive outcomes, the researcher identified a number of instances where completed recommendations were likely to have contributed to the outcome of the case by first improving the offender's engagement or compliance. Two such examples are provided:

Within Case 2, the offender had short term memory issues caused by long term alcohol dependency. Prior to consultation and formulation, these memory issues resulted in the offender missing many appointments, eventually leading to his disengagement with

probation and other services. Although the OM in this case had tried to improve the offender's attendance pre-consultation/formulation by occasionally sending text message reminders, these reminders were often forgotten or sent too late. The offender was then told that sending reminders for appointments was not a sustainable solution and that he should try harder to organise his own time and remember these appointments himself.

However, one of the recommendations resulting from the case formulation was to ensure that the offender was sent text message reminders before *every* appointment to try to increase his engagement. This recommendation was immediately actioned by the OM, who sent three different text message reminders in the run up to his next appointments. Positively, the offender attended these appointments successfully. In the year after consultation, the OM continued with this method, also recording on nDelius that she had asked other services who had contact with the offender to send text message reminders to ensure he also attended these appointments. Further ensuring the offender would attend all appointments made, the OM also liaised with these additional services to ensure that all the offender's appointments were scheduled for the same day each week, reducing the amount of information he had to remember. The result of this effort on the OM's part was that the offender only missed a single appointment in the year following consultation/formulation, and this was due to a change in his scheduled appointment day owing to the Christmas holidays. This evidence suggests that by completing this simple recommendation, the offender was able to successfully attend many more appointments, increasing his engagement with a number of services. This is likely in turn to have contributed to his positive 1-year outcome. This series of events suggest that in this case at least, the recommendations made within the formulation *were* able to positively impact the case outcome.

In a second example, the offender within Case 4 was described by the OM pre-consultation as pushing boundaries in supervision sessions due to wanting his reporting

frequency reduced and wanting to go on holiday. It was believed that this was occurring due to his misunderstanding of his licence conditions and at what point these would end. In response to this, two of the recommendations made within the formulation were a) for the OM to revisit each licence condition in detail with the offender and to reinforce the reasons for their implementation, and b) to use a supportive authority approach to empower the offender to make his own choices regarding these issues and therefore take responsibility for the consequences of his choices.

Positively, there is evidence that these recommendations were actioned by the OM in the very first supervision session post-consultation; the OM recorded on nDelius that she had explored each licence condition in detail with the offender and had explained the work she would like to complete in upcoming supervision sessions with him. She reported that she had also explained to the offender that although it was his own choice to comply and engage with this work, if he did so, she would be willing to reduce his reporting frequency. The offender was reported as being agreeable to this proposition.

After this supervision session, the offender was described as engaging well in the work provided and having an improved understanding of his licence conditions. After two months of continued engagement, the OM was able to reduce the offender's reporting frequency as promised. Soon after this, the offender also disclosed that although the holiday he had wanted to go on was happening that week, he had declined his invitation due to not wanting to breach his licence conditions and be returned to custody. This provides evidence that the recommendations made within the formulation did heighten the offender's understanding of his licence conditions (which triggered the start of his positive progress), and also allowed him to take ownership of his own choices (which maintained this positive progress). Five months after the formulation was written, the OM recorded within an nDelius entry that the offender's engagement and compliance over the previous months had been

‘excellent’.

These two examples are effective in highlighting the positive differences that can occur in the behaviour and engagement of offenders before versus after formulation recommendations have been implemented. These results show that by actioning formulation recommendations effectively, it may be possible to positively impact case outcomes (i.e., no breaches or re-offences within the 1-year period post formulation) by first improving more intermediate outcomes (e.g., offender engagement). These examples also further highlight that when formulation recommendations are highly practical and actionable, OMs are likely to be able to implement these more effectively, leading to more positive impacts. Although some of these more practical recommendations may not have been very psychologically focused (i.e. a formulation may not have necessarily been needed to identify recommendations such as “send text message reminders” or “explain licence conditions”), these two case examples have shown that practical recommendations such as these can often act as a ‘gateway’ to further positive impacts, first removing barriers that are causing poor engagement and non-compliance so that more ‘psychological’ or in depth work can then be successfully completed with the offender.

In contrast, when examining the impact of recommendations that were completed in cases with negative outcomes, it was found that in many instances the completion of these recommendations did not have the impact intended. One reason identified for this was that in several instances, although these recommendations were able to have an *initial* positive impact, a lack of further follow-up meant that these impacts eventually diminished and could not be impactful on 1-year case outcomes. Again, two case examples are provided to demonstrate this point:

In Case 9, OASys records stated that the majority of the offender’s criminal behaviour had been alcohol related. The offender had previously engaged well with an alcohol service

until he was allocated to a different staff member and stopped engaging. Therefore, one of the recommendations made within the formulation was for the OM to consider re-contacting the alcohol service and asking if the offender could be re-allocated to the original staff member. Although the OM did not action this recommendation immediately, she did action it once the offender's drinking had become problematic (i.e., the offender was unable to attend probation appointments due to being under the influence). The offender *was* eventually allocated to the original staff member at the alcohol service and engaged well for a period of time, during which he also successfully attended all scheduled probation appointments. Unfortunately, after a period of three months the staff member at the alcohol service contacted the OM to let her know that he had not heard from the offender in recent weeks and wondered if he still needed support. The OM discussed this with the offender in his next probation appointment, who was recorded on nDelius as stating that he no longer felt he needed support as he was employed and therefore not drinking anymore. Within this entry, the OM also described taking this at face value, and so she simply asked the offender to re-contact the alcohol service if his situation should change again. Soon after this, the offender was recalled to prison due to committing a further offence during which he was intoxicated. This highlights that when initial positive progress is made, it is imperative that this is taken advantage of and further developed to create larger positive change, rather than allowing these initial benefits to diminish. Therefore, this suggests that the initial benefits of completing formulation recommendations are only the beginnings of change, not the end, and so should be treated as such.

In another such example (Case 10), the offender was in custody at the time of the consultation and formulation. He was described by his OM as feeling extremely anxious about being released, having previously stated that he was desperate for support in the community and would rather commit suicide than return to prison. Due to his anxiety, the

offender had also been known to act out inappropriately to try to gain a sense of control in various situations (e.g., starting a fight in order to be moved to a different prison). A formulation recommendation was therefore made for all staff working with this offender to identify and explore with him the emotions he feels when he is struggling, with the aim of developing his communication skills and decreasing the need for him to act out in future. Although the offender was allocated a new OM immediately after the formulation was written, it was successfully shared with prison staff before this change occurred. Positively, the offender's prison keyworker was able to utilise this recommendation when the offender began to struggle emotionally. Within an nDelius entry, this keyworker described how she spent time exploring exactly how the offender was feeling about his release and why, and what he could do to better manage these emotions instead of acting out inappropriately. The initial outcome of this conversation was positive, with the keyworker describing that the offender had engaged well in this conversation and had expressed afterwards that he felt he could trust this keyworker. However, within this nDelius entry, the keyworker also stated that she believed it was important for the offender to receive further support from other sources in relation to this issue to "keep his head straight and out of trouble".

Unfortunately, no extra support was forthcoming, possibly due to a second change of OM immediately after this conversation occurred. Once released into AP two months later, the offender was described as being in a positive frame of mind, managing to disclose to staff that he has "great difficulty with regulating emotions", and relies on isolating himself whenever he fears becoming angry so that he is not recalled to prison. However, again, there is no evidence that this discussion was followed up with any further work or dialogue around managing emotions. After one month in AP, the offender was described as feeling upset about letting his OM down due to missing a scheduled meeting, and so absconded and attempted suicide, leaving a note which again stated that he would rather die than return to

prison. The offender was recalled to custody soon after this. This example suggests that although the formulation recommendation *did* have an initial positive impact (i.e., the offender opened up to his prison keyworker about his emotions and how to manage them, and felt he could trust her), this did not lead to further positive change due to the keyworker's request for further support and follow-up not being acted upon, and further opportunities for discussion around emotions (and how to deal with them appropriately) being missed once the offender was released into AP.

These two examples highlight that in cases with negative outcomes, recommendations that were completed *did* have an initial positive impact, but that this impact was not sustained due to a lack of follow up. This is a stark difference to the cases with positive outcomes described earlier, in which continued efforts were made to harness and further build upon the initial positive effects created by the completion of formulation recommendations. This part of the investigation has therefore highlighted that it is not enough for recommendations to be relevant, feasible and actioned, but that the initial outcomes of these actions must also be closely monitored and further developed to ensure that the intended impacts of these recommendations can be fully achieved. This is an important point to consider, as when investigating cases with positive outcomes, it was shown to be highly likely that the completion and follow up of formulation recommendations had indirectly contributed to these positive outcomes.

5.3.7 Logic Model

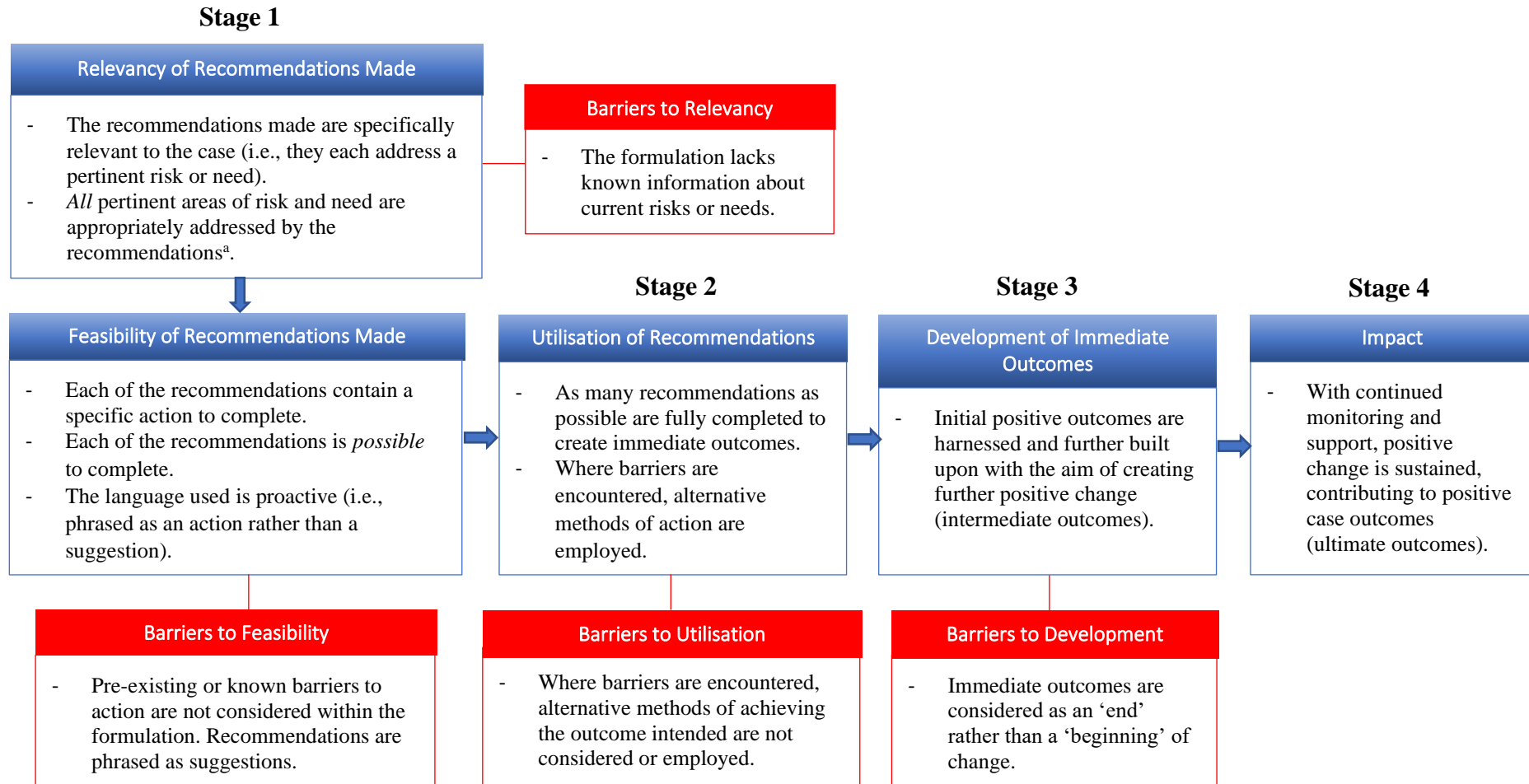
As previously described, a logic model is a visual representation of “a chain of occurrences or events over an extended period of time, trying to show how a complex activity, such as implementing an activity, takes place” (Yin, 2018, p. 186). Therefore, it is common for a logic model to display the indirect relationship by which an initial intervention

or activity can first produce its own *immediate* outcomes, which can in turn create *intermediate* outcomes, finally resulting in *ultimate* outcomes.

On the basis of the summated findings of the present study, a logic model was created to operationalise the process by which formulation recommendations were seen to indirectly lead to case outcomes in positive cases (Figure 11). This model also indicates where and why this process was commonly interrupted in cases with negative outcomes, negating the intended impact of recommendations made.

Figure 11

Logic Model Operationalising the Process by Which Formulation Recommendations May Influence Outcomes



Note. The impact of each step is dependent on the successful completion of all prior steps in the chain.

^a It may also be helpful for these recommendations to be prioritised so that those of most importance can be easily identified by the OM.

5.4 Study 3 Discussion

This two-tailed explanatory multiple-case study resulted in the development of a comprehensive logic model displaying the hypothesised process by which recommendations generated from OPDP case consultation and formulation may positively impact offender outcomes. By analysing cases with negative outcomes, the logic model was also able to successfully incorporate a range of avoidable barriers seen to have the ability to disrupt this process, resulting in little or no positive impact on case outcomes. This logic model therefore provides a useful overall representation of the possible value that both consultation and formulation can have within the OPDP if these tools are utilised to their full potential. Once validated with (possibly experimental) research, this model could be utilised by OPDP staff to identify common pitfalls more easily, ensuring that they are able to extract and achieve value from formulation recommendations.

These findings could provide the basis of a useful addition to the guidance presently offered by the OPDP (i.e. Case and Risk Formulation Self-Auditing Tool, NOMS & NHS, 2015b), which currently focuses very much on what a high-quality formulation should contain rather than how to actively generate useful and impactful (i.e. relevant, feasible and actionable) recommendations. The findings of the present study also provide a useful addition to the forensic case consultation and formulation literature, which has thus far explored how consultation and formulation in forensic settings may impact staff outcomes (Knauer et al., 2017; McMullan et al., 2014; Ramsden et al., 2014; Whitton et al., 2016) and OM-offender relationships (Shaw et al., 2017), but has not yet explored if, or how, consultation and formulation may contribute to offender outcomes.

Although the use of a case study method may be seen as a limitation in some regards (as for instance, it was possible to examine only a few cases), the use of this method has created value within the present context. Yin (2018) described experimental studies as ‘black

box' evaluations, commonly only able to test the relationship between an independent variable and an outcome without understanding the process that happens in between. Case studies are instead able to open this 'black box', providing the opportunity to examine these internal processes. As previously described, this often means that case studies can be used to address much more complex questions, such as *how* or *why* a particular intervention may have had an impact on an outcome. In the present context, this meant that the study was able to further develop the preliminary findings of Study 2 (halted study) by offering an alternative method of investigating both *if* and *how* case formulation can impact offender outcomes.

In addition, the use of a two-tailed design (i.e., examining cases with positive versus negative outcomes) strengthened the validity of the results obtained from the present study. This is because the hypotheses generated from the cross-case analysis of positive cases could be further supported by the cross-case analysis of negative cases. For instance, the process by which formulation recommendations were hypothesised to impact outcomes in positive cases could be 'tested' by understanding whether this process broke down in each of the negative cases. This was found to be true, as in each of the cases with negative outcomes, at least one barrier to the successful completion of this hypothesised process was identified. It is important to stress that the barriers discussed and displayed within the logic model are those that could have been avoided (e.g., low relevance, low feasibility, barriers to action that could have potentially been overcome by utilising alternative methods). Therefore, it is not necessarily the case that negative outcomes were 'unavoidable' in these instances. However, it is also important to note that because they were not assessed within the present study, alternative (non-formulation related) factors could have contributed to or influenced the results found. For instance, the amount of resources available to the OM in each case may have influenced the number of recommendations they were able to complete, or the strength

of the OM-offender relationship in each case may have impacted the OM's ability or motivation to complete the recommendations made. This is something that could be explored within further (potentially experimental) research.

Finally, Yin (2018) states that rather than each individual case study being viewed as if it were a single participant within a study (sampling logic), each case study should instead be viewed as its own experiment (replication logic). This is because a full analysis can be performed on each case study, creating in depth hypotheses which can then be compared across individual cases as can be done with individual experiments. Using this logic, a sample of 10 case studies is sufficient to develop comprehensive theories and conclusions about the utility and impact of recommendations made within OPDP formulations.

A second limitation to note is that only one researcher was involved in rating the formulation recommendations in terms of their relevance and feasibility, meaning that it was not possible to assess the inter-rater reliability of these ratings. In lieu of an additional rater, the researcher ensured that the variables to be rated and the criteria by which these were to be rated were clearly defined before this process began. The researcher also logged and continually compared the ratings allocated to each recommendation throughout the study and ensured that the reasons behind these allocations remained consistent across cases⁸⁶.

A third limitation is that the multiple case study was conducted using only secondary methods (due to research restrictions related to COVID-19). Although a great volume of retrospective data was directly accessible to the researcher with the use of nDelius and OASys and data was triangulated wherever possible, it is still the case that this data was written from others' perspectives rather than being directly observed or collected by the researcher. For instance, when creating an nDelius entry to record the content of their contact

⁸⁶ For instance, ensuring that all recommendations rated as being 'low' in feasibility shared similar characteristics in this regard, and confirming that all recommendations rated as being more feasible than the 'low' group had indeed been allocated a higher feasibility rating.

with an offender, OMs may have noted the most important or salient aspects of this meeting from their own perspective, rather than writing a detailed account of everything that happened. Additionally, OMs may not have recorded these meetings immediately after they occurred, meaning that their recall of events may not have been perfect. This would suggest that in some instances, relevant information about formulation recommendations may not have been accurately recorded by these OMs. Again however, the use of a two-tailed case study is likely to have mitigated the impact of this limitation somewhat, as clear differences between cases with positive versus negative cases were observed. For instance, far less evidence of the completion of recommendations was found in cases with negative outcomes than cases with positive outcomes. This would suggest that these recommendations really *were not* carried out in these cases, rather than this simply being an issue with recording this type of information⁸⁷. In addition, as entries uploaded onto nDelius and OASys constitute the formal record of events in each case, it is reasonable to assume that these systems capture the most pertinent and relevant case information. In some ways, evidence collected through the use of these methods may therefore be viewed as more accurate than that which would have been possible to obtain with the use of self-report or interview methods.

To build upon these results, future research should focus upon further validating each step of the logic model developed within the present study. This could be achieved with a series of (quasi-)experiments to confirm whether case outcomes do significantly differ based on the number of relevant and feasible recommendations made within each formulation. Furthermore, primary research methods could be utilised to better understand why avoidable barriers were often not overcome in cases with negative outcomes. For instance, OMs could be interviewed directly to further explore the types of barriers they typically face when

⁸⁷ In addition, the OM of each case was different in each instance. This indicates that the record-keeping style of one OM would not have influenced multiple cases.

attempting to utilise formulation recommendations, and what support might be useful in assisting them to overcome these barriers using alternative methods. This research could also investigate whether differences in case outcomes (i.e., positive versus negative) are related to differences in OM factors, such as motivation to manage the case. If so, this is a factor that should be controlled for within any subsequent study aiming to validate the logic model developed here. Conducting such research (i.e., interviewing OMs) could identify solutions to common barriers, better ensuring that the process outlined within the logic model can be completed successfully to achieve more positive outcomes.

In conclusion, even with the use of secondary methods, this two-tailed multiple-case study has successfully illuminated the potential value of recommendations made within OPDP consultations and formulations, and has also identified a number of avoidable barriers that could be addressed in future to further maximise this value.

Chapter 6: Exploring the Knowledge, Opinions, and Training Experiences of OPDP Staff in Relation to Forensic Case Formulation

6.1 Study 4 Introduction

As concluded from the integrative review performed at the beginning of this thesis (Chapter 2; p. 9), there are a number of outstanding questions regarding the forensic case formulation skills of both offender managers (OMs) and psychologists.

As previously discussed, OMs working within the OPDP are often required to take an active role in writing forensic case formulations alongside psychologists⁸⁸. However, several studies performed during the infancy of the OPDP (Brown & Völlm, 2013; Brown and Völlm, 2016) identified that there was some initial scepticism (from OMs, offenders, and carers of offenders) about whether OMs would be able to complete case formulations to a sufficient standard, as OMs typically do not have the same level of psychological training and knowledge as psychologists. A number of studies have also attempted to examine the effectiveness of training on the forensic case formulation skills of OMs (Brown et al., 2018; Mapplebeck et al., 2017; Minoudis et al., 2013; Radcliffe et al., 2018). Although these studies have reported mixed results (as discussed within Chapter 2), the majority of their findings suggest that training *is* able to improve the forensic case formulation skills of OMs, indicating that this type of training is important for OMs to receive. However, research has not yet investigated whether OMs are satisfied with the quantity and quality of the case formulation training they are provided with, or whether they feel confident in their case formulation skills after receiving this training.

A second finding identified within the integrative review performed within Chapter 2

⁸⁸ Although OMs tend to be tasked with completing only the less complex levels of formulation (i.e., mostly level 1 and sometimes level 2).

was that the forensic case formulation skills and training experiences of *psychologists* must also be investigated further. This is partially due to the research of Hopton et al. (2018), who identified that risk formulations produced by psychologists working within forensic inpatient hospitals were of generally poor to intermediate quality as rated using the Case Formulation Quality Checklist-Revised (CFQC-R, McMurrin & Bruford, 2016). In addition, the descriptive statistics reported within Chapter 3 (Study 1a, pp. 95-102) of the present thesis revealed that formulations produced by psychologists within the OPDP were found to be of generally intermediate quality when rated by the researcher using both the CFQC-R and the Case and Risk Formulation Self-Auditing Tool (Audit Tool; NOMS & NHS, 2015b).

On the basis of the findings discussed above, the main aims of the present study were to investigate whether OMs feel that the quality and quantity of forensic case formulation training they are provided with is sufficient to meet their needs, and to investigate whether the forensic case formulation skills of psychologists are kept sufficiently updated and relevant over time. To meet these aims, a range of OPDP staff (including OMs and psychologists) were invited to complete an online survey about their experiences of writing case formulations and of attending case formulation training.

A secondary aim of this study was to gain staff perspectives of the overall utility and value of forensic case formulation within the OPDP. These perspectives are likely to be valuable, as staff within the OPDP have first-hand experience of what formulation is capable of within this service and what value it provides. Therefore, gaining an insight into how staff view these issues is likely to provide a good understanding of the true utility and value of forensic case formulation within the OPDP, contributing to the main aims of the thesis.

A final aim of this study was to investigate whether the quantity and/or quality of formulation training received by psychologists has any noticeable impact on the quality of formulations they are able to produce. To do this, the researcher aimed to identify those

psychologists taking part in the present study who had also authored one or more of the OPDP formulations extracted within Study 1a (to recap, the 48 formulations extracted within Study 1a were authored by 12 different psychologists and were scored using the CFQC-R and Audit Tool to gain an understanding of their quality). The purpose of identifying these participants was to link their training experiences (collected within the present study) to the formulations they have previously written (extracted and analysed within Study 1a). This may provide an understanding of whether the quantity and/or quality of formulation training received by each psychologist is associated with the quality of formulations they are able to produce.

In addition to meeting these study aims, the results of this research were expected to provide an understanding of how any future forensic case formulation training should be developed and implemented to maximise its value and impact. Therefore, the present study has the potential to have a number of positive impacts.

6.2 Study 4 Method

6.2.1 Participants

All OPDP staff members responsible for writing case formulations as part of their duties were invited to take part in the online survey. These criteria ensured that the broadest possible range of staff perspectives could be collected whilst also ensuring that these perspectives would be relevant to the topics of interest and developed through first-hand experience. To recruit these participants, the researcher first provided the OPDP Research and Data Lead with all relevant details about the study (including the survey link), who then forwarded these details to OPDP co-commissioners. Co-commissioners then distributed the survey link to the lead of each OPDP team and asked them to circulate it to all eligible staff

within their teams. This method of recruitment enabled a wide range of OPDP staff members to be contacted through an official channel, which was expected to maximise participation.

6.2.2 Materials

The online survey was developed with the use of Qualtrics. It consisted of a variety of demographic, multiple-choice and open-ended questions (46 questions in total, please see Appendix Q).

6.2.2.1 Overview of Questionnaire and Rationale of Questions Asked

After collecting demographic information, participants were asked to define case formulation in their own words (Q7, Appendix Q). This question was asked for two key reasons; the first was to confirm whether participating staff members define case formulation in a similar way to how it has been defined within the present thesis (i.e., “a hypothesis about the causes, precipitants and maintaining influences of a person’s psychological, interpersonal, and behavioural issues”, Eells, 2007, p. 4). If so, the findings gained from the present study are likely to be compatible and relevant to the rest of the research conducted within the present thesis. Secondly, participants were asked to provide case formulation definitions (‘professional’ definitions) in order to compare these with definitions appearing in the case formulation literature (‘academic’ definitions). This comparison was considered valuable, as it has previously been stated that there is no universally accepted definition of case formulation (Whitton et al., 2016). By comparing ‘professional’ and ‘academic’ definitions of case formulation, it may be possible to develop a better understanding of what a universal definition should include.

The next questions within the survey (Q8-Q27, Appendix Q) asked staff to rate their experiences of writing case formulations and of receiving case formulation training. Most of these were multiple-choice questions, although participants were asked to qualitatively

elaborate on their responses in some instances. These questions were designed to provide an overview of how much training OPDP staff members generally receive (in hours), how satisfied they are with the quantity and quality of formulation training received (rated from 1 – ‘Not Satisfied at All’ to 4 – ‘Completely Satisfied’), how often their case formulation skills are assessed (rated from 1 – ‘Never’ to 7 – ‘Weekly’), and how confident they are in their formulation skills (rated from 1 – ‘Very Unconfident’ to 4 – ‘Very Confident’). At the end of this section, participants were asked a range of quantitative questions about their experiences of providing case formulation training to others (Q28-Q34, Appendix Q). These questions were included to provide a clearer understanding of the training responsibilities of OPDP staff themselves.

Next, participants were asked to provide suggestions for how formulation training within the OPDP could be usefully improved (Q35). Answers to this question may provide solutions to address any training issues highlighted by staff throughout the survey (for instance, if participants report that they are not satisfied with the quality of the training received), and could also usefully direct the development of any future formulation training.

Finally, participants were asked to provide their opinions on the effectiveness and usefulness of case formulation (Q37). This qualitative question was asked for three reasons; the first was to gauge staff perceptions of case formulation in order to understand how openly they might receive further formulation training (i.e., if staff believe case formulation to be useful and effective, they may be more likely to engage in any such training). Secondly, participants were asked this question so that their responses could be compared to the findings of Völlm (2014; discussed within Chapter 2), which highlighted that only 40% (12/30) of formulation experts could agree that offenders who receive case formulation will achieve more positive case outcomes. As OPDP staff closely work with offenders and write formulations on a regular basis, it was thought that they would be able to provide a valuable

insight into the effectiveness of formulation in this regard. Thirdly, this question was asked in order to gain insight into what staff believe to be the main outcomes of formulation within the OPDP (i.e., if they believe formulation to be useful and effective, *what* is it most useful and effective at doing?). For instance, even if it is found that OPDP staff do *not* believe that case formulation can positively impact offender outcomes, they may still believe that it is effective in other ways (i.e., improving OM understanding of complex cases). This will contribute to meeting some the main aims of the present thesis (i.e., to investigate the utility and value of formulation within the OPDP).

6.2.3 Procedure

Before commencing the study, approval was obtained from both HMPPS National Research Committee (ref. 2018-089) and Swansea University Research Ethics Committee (ref. 0240).

As previously described, OPDP staff were sent a link to the online survey via their team leader. After participants had clicked the survey link within this e-mail, they were presented with an electronic information sheet (Appendix R) and consent form (Appendix S). Participants were informed that they were not required to take part in the survey, but that their participation would be much appreciated and may have the potential to improve formulation training within the OPDP in future. They were also informed that the survey would take 10-15 minutes to complete and that all their responses would remain anonymous if they wished. However, participants were also given the option to provide their name in order to facilitate the third aim of the study (i.e., linking participant survey responses to the formulations extracted within Study 1a). Participants who provided their names were informed that their data would be kept completely confidential and that their personal information would be deleted as soon as their information was linked together. If participants

were happy to take part after reading this information (with or without providing their name), they were required to select the ‘Yes, I Consent’ option before moving ahead to the survey. If they selected the ‘No, I Do Not Consent’ option, they were immediately taken to the end of the survey and thanked for their time.

After 3 months, a reminder e-mail was sent to the same staff members through the same communication channels to invite them to complete the survey if they had not already done so. The survey remained active for a total of 6 months between August 2018-February 2019 to ensure that all staff who were willing to take part would have sufficient time to do so. After this time, all recorded responses were downloaded into IBM SPSS Statistics 25 for analysis.

6.3 Study 4 Analysis and Results

6.3.1 Demographic Information

A total of 55 staff working within OPDP services across the UK completed the survey. The average age of participants was 38 years (range: 25 to 66 years) and the majority of participants were female (84%). Most participants (85%) reported having worked within their profession for more than 5 years, although only 20% of participants had worked specifically within the OPDP for this amount of time. Participants within a variety of different job roles took part in the survey, including psychologists and OMs. Although the response rate to the survey could not be calculated (due to there being no central record of the number of staff employed within the OPDP who write formulations), the demographic information of these participants indicates that they are broadly representative of the population they were sampled from (i.e., OPDP staff). Please see Table 25 for a full overview of this demographic information.

Table 25*Demographic Information of Survey Respondents*

Demographic Variable		Count	N%⁸⁹
Sex	Male	9	16
	Female	46	84
Age	25-30 years	8	15
	31-40 years	33	60
	41-50 years	7	13
	>50 years	7	13
Years Working Within Profession	<5 years	8	15
	5-10 years	17	31
	11-15 years	15	27
	>15 years	15	27
Years Working Within OPDP	<1 year	11	20
	1-2 years	10	18
	2-5 years	23	42
	>5 years	11	20
Job Title	Psychologist	26	47
	Assistant Psychologist	9	16
	OM	11	20
	Health Practitioner	4	7
	Therapist	4	7
	Service Manager	1	2

⁸⁹ Percentages may not add up to 100% due to rounding.

6.3.2 Case Formulation Definitions (Qualitative Data)

6.3.2.1 *Selecting the Method of Analysis*

All participants provided a definition of case formulation when prompted (n=55), although the length of these definitions ranged greatly from 7 to 86 words. Many of the definitions provided by participants were very similar to each other, often featuring the same key words and phrases. Due to this, a content analysis was performed on this data. Content analysis involves breaking down qualitative data into ‘units’, which can consist of words, phrases or themes depending on what the researcher wishes to code (Stan, 2010). Either a quantitative or qualitative method can then be used to analyse these units to produce an overall understanding of the data. During *quantitative* content analysis, data units are usually counted to gain an overview of the most commonly occurring words, phrases, or themes within a dataset, providing the researcher with an understanding of the topics that are most important or salient to participants (Kondracki et al., 2002). This type of content analysis therefore provides “a structured way of analysing data that are typically open-ended and relatively unstructured” (Rose et al., 2014; p. 124).

In contrast, *qualitative* content analysis typically involves more interpretation of the data units identified. This is often done by considering the context surrounding each data unit and how it may relate to other units to create meaning (Hsieh & Shannon, 1995). Qualitative analysis therefore allows for a more thorough investigation of the implicit or inferred topics discussed by participants, rather than only the most prominent topics (Kondracki et al., 2002).

To analyse the case formulation definitions of participants, it was decided that *both* types of content analysis would be used. This is because it has been argued that these two approaches “are not mutually exclusive, and it is often useful to apply both” (Kondracki et al., 2002, p. 224). Applying both types of content analysis to the same data is often known as

“Summative Content Analysis” (Hsieh & Shannon, 1995). This summative approach involves “counting and comparisons, usually of keywords or content, followed by the interpretation of the underlying context” (Hsieh & Shannon, 1995, p. 1277). Using a summative method within the current context is therefore likely to provide both a general overview of the main words that come to mind when staff are defining formulation (quantitative), and also a more in depth understanding of what staff believe the aims of formulation are and what a formulation should include (qualitative).

To facilitate the earlier described comparison of ‘professional’ versus ‘academic’ definitions of case formulation (i.e., to enable the development of a shared definition of case formulation), academic definitions collected from the literature were analysed in the same way as described above. The results of these two analyses were then compared (more detail is provided later).

6.3.2.2 Quantitative Content Analysis

Participant Definitions. The first step in conducting the quantitative content analysis on the participant definitions of case formulation was to identify the data units of interest. As discussed above, individual data units can consist of words, phrases or themes depending on the level of detail the researcher wishes to capture. When reading the participant definitions again, it was observed that although many of the phrases used by participants *were* very similar to each other, they were often not identical (i.e., “a way of understanding” vs “to provide an understanding”). However, the ‘core word’ used within many of these phrases (i.e., understanding) *was* very often identical. It was therefore decided that each data unit should consist of a single word.

To maximise accuracy in identifying and quantifying these data units, the WordFrequency Macro in Microsoft Word 2010 was executed on the file containing all

participant definitions. This Macro returned a list of each word within the dataset and how many times it appeared. When examining these results, it was observed that many participants had used slight variations of the same word (i.e., understand/understanding/understood). Therefore, to gain the most cohesive summary of the data, synonyms and variations of the same word were grouped together and their frequencies were combined (these will be referred to as ‘word groups’ throughout the analysis). Please see Table 26 for an overview of the most commonly used word groups (those used ≥ 18 times) within the participant definitions. This cut-off point (≥ 18 times) represented word groups making up at least 1% of the dataset. This cut-off point was expected to facilitate a clear overview of the most prominent aspects of participant definitions.

Table 26

The Most Frequently Occurring Word Groups Identified within the Participant Definitions of Case Formulation

Word Group	Frequency
Presenting/Presentation/Present	41
Problems/Issues/Difficulties	40
Behaviour/Behave/Behavioural	34
Understand/Understanding/Understood	31
How	20
Psychological/Psychologically	20
History/Background/Past	19
Experience/Experienced	18

Academic Definitions. To provide the most relevant comparison to participant definitions (due to the OPDP being a forensic service), the academic definitions collected were obtained from the forensic case formulation literature. This process involved extracting

definitions from each of the papers discussed within Chapter 2, and also from documentation published by the NOMS and the NHS in relation to the OPDP (NOMS & NHS, 2015b). In total, 20 academic definitions were collected

To quantitatively analyse these 20 academic definitions of case formulation, the same WordFrequency Macro was utilised. Synonyms or variations of the same word (i.e., Behaviour/Behave/Behavioural) were again grouped together. The results of this analysis can be viewed in Table 27. Again, word groups making up at least 1% of the dataset (those used ≥ 12 times) were those defined as being those most commonly occurring. A comparison of the word groups used within the academic and participant definitions will be provided within the ‘qualitative content analysis’ section below.

Table 27

The Most Frequently Occurring Word Groups Identified Within the Academic Definitions of Case Formulation Obtained from the Forensic Case Formulation Literature

Word Group	Frequency
Problems/Issues/Difficulties	30
Treatment/Intervention	17
Hypothesis/Hypotheses	12
Behaviour/Behave/Behavioural	12
Explain/Explanation/Explanatory	12

Note: Word groups appearing in bold are those that were also found to be amongst those most frequently occurring within the participant definitions.

6.3.2.3 Qualitative Content Analysis

Qualitative content analysis was then performed on both sets of definitions. The aim of this analysis was to examine how these word groups were specifically used within the case

formulation definitions (i.e., the context behind them), to examine how these word groups might interlink to create larger meaning, and to identify how participant and academic definitions of case formulation align and contrast. For each of the following subsections (each discussing between one to three of the identified word groups), participant definitions will be analysed first before being compared with the academic definitions.

Presenting Problems and Behaviour. The two most commonly occurring word groups within the participant definitions of case formulation were found to be ‘Presenting/Presentation/Present’ (41 occurrences), and ‘Problems/Issues/Difficulties’ (40 occurrences). When further examining how these word groups were used by participants, it was found that they were very commonly used in conjunction with each other:

*“A narrative understanding of **presenting problems**”* (Participant 25)

*“A psychological understanding of an individual’s **presenting difficulties**”* (P50)

*“Producing a narrative that attempts to explain underlying mechanisms of **presenting problems**”* (P48)

As these were the two most commonly used word groups within the participant responses and were also frequently combined together to create phrases such as “presenting difficulties” and “presenting problems”, this suggests that OPDP staff believe that examining an offender’s presenting difficulties or problems is the primary purpose of a formulation.

When exploring this data in more detail, it was found that a number of other participants provided very similar definitions of case formulation to those presented above, but replaced the word group ‘Problems/Issues/Difficulties’ with the word group ‘Behaviour/Behave/Behavioural’:

*“A case formulation creates a theoretical understanding of a specific **behaviour**” (P10)*

*“A narrative that provides an explanation for a particular **behaviour**” (P39)*

This suggests that the word groups ‘Problems/Issues/Difficulties’ and ‘Behaviour /Behave/Behavioural’ might be being used interchangeably by participants. When looking closely at the above examples however, it can be observed that the words Problems/Issues /Difficulties’ are typically used in *plural* form, whereas the words ‘Behaviour /Behave/Behavioural’ are most often singular. Participants also often used phrases such as ‘a *specific* behaviour’ or ‘a *particular* behaviour’ when using this word, further suggesting that the word ‘behaviour’ was typically used when describing a singular issue. This suggests that staff may view ‘behaviour’ as just *one* of many different types of problem that a formulation might seek to explain. This possibility is supported by the following quotes in which participants used the words ‘Problems/Issues/Difficulties’ as all-inclusive terms, but the word ‘behaviour’ as a way of describing one specific *type* of problem that an offender might have:

*“A way of organising information . . . about the function of a **particular problem such as a behaviour**” (P26)*

*“To gain a better understanding of and to make sense of a **current difficulty** (e.g. **violent offending, voice hearing or behavioural presentation**)” (P28)*

As ‘Behaviour/Behave/Behavioural’ was the third most commonly occurring word group identified within the participant definitions (31 occurrences) and also seems to have a strong overlap with the first two word groups, this suggests even more strongly that OPDP staff believe that the primary aim of a formulation is to examine an offender’s presenting problems (which may include their behaviour).

Academic Comparison. Mirroring these participant responses, the word group ‘Problems/Issues/Difficulties’ was mentioned very frequently within the academic definitions of case formulation (being the second most commonly occurring; 30 occurrences). This word group was also used in a similar fashion to how it was used by participants:

*“A narrative that explains the underlying mechanism of the presenting **problem**”*

(NOMS & NHS, 2015b)

*“A process that provides a psychological understanding of a person’s **difficulties**”*

(Brown & Völlm, 2013)

*“A clinical psychological approach to understanding an individual’s **problems**”*

(McMurrin & Bruford, 2016)

The frequency of this word group across both sets of definitions suggests that both OPDP staff and academics agree it is important for a formulation to focus on examining a person’s main problems and difficulties. This is a positive initial finding, as it indicates there is at least some basic shared understanding of formulation across domains.

Again mirroring the participant responses, the word group ‘Behaviour/Behave/Behavioural’ was also found to be one of the most commonly occurring word groups identified within the academic definitions (12 occurrences). Although this word group was again used in a similar fashion to how it was within the participant definitions, it appeared a lot less frequently than the word group ‘Problems/Issues/Difficulties’ (12 vs 30 occurrences), whereas within the participant definitions these word groups appeared more equally (34 vs 40 occurrences). This suggests that within the academic definitions, these two word groups were not used as interchangeably. In instances where the word group ‘Behaviour/Behave/Behavioural’ was used however, it was again typically used as an example of one *type* of problem that a person might be experiencing:

*“A theoretically based conceptualisation of the ‘causes, precipitants, and maintaining influences of a person’s **psychological, interpersonal and behavioural problems**’”*

(Völlm, 2014)

The similar but less frequent usage of this word group within the academic definitions may reflect the need to use broader terms within the literature (such as ‘Problems/Issues/Difficulties’), rather than narrower terms (such as ‘Behaviour/Behave/Behavioural’, which may only describe one type of problem) in order to achieve the most concise yet inclusive definition.

This might also explain why the word group ‘Presenting/Presentation/Present’ was *not* amongst those most commonly used within the academic definitions even though it was the second most commonly occurring within the participant definitions. This is because the word ‘problems’ is more concise than the phrase ‘*presenting* problems’, yet the same meaning is conveyed. Therefore, the word group ‘Presentation/Presenting/Present’ may have been omitted from the academic definitions in many cases in order to improve conciseness without sacrificing meaning.

Creating an Understanding. The fourth most commonly used word group within the participant definitions was ‘Understand/Understanding/Understood’ (31 occurrences). When looking more closely at the participant data, it was observed that this word group was often used alongside the word groups already discussed (i.e., ‘Presentation/Presenting/Present’, ‘Problems/Issues/Difficulties’, ‘Behaviour/Behave/Behavioural’):

*“A narrative understanding of *presenting problems*” (P25)*

*“Increasing staff understanding of the *presenting behaviour*” (P27)*

*“A way of understanding someone’s *behaviour*” (P40)*

A large number of sentences very similar to these were found throughout the dataset. This finding therefore further deepens comprehension of what OPDP staff perceive a case formulation to be, as many participants indicated that the primary function of a formulation should be to create an *understanding* of the offender's presenting problems and/or behaviour, rather than simply identifying or describing them.

Expanding this interpretation, it was also observed that many of these same sentences included another of the most commonly occurring word groups (Psychological/Psychologically', 20 occurrences):

*"A narrative **understanding** of presenting problems that uses psychological theory"*
(P25)

"A psychological understanding of a person's difficulties" (P45)

"A psychological understanding of an individual's presenting difficulties underpinned by psychological theory" (P50)

This suggests that many of the participants surveyed are aware that the explanations or understandings developed within a case formulation should be grounded in psychological theory. This is a promising finding, as it suggests that although not all OPDP staff have an extensive background in psychology, many of them *do* recognise that this is an important aspect of formulation. However, despite it being one of the most commonly used word groups, 'Psychological/Psychologically' only appeared within 19 out of the 55 participant definitions overall.

One possible explanation for this relative scarcity is that although many staff did not use the words 'Psychological/Psychologically' specifically, they used other words to convey the same meaning. For example, many participants stated that a formulation should explain 'How' an offender's problems might have been caused and/or 'How' these problems might

have developed over time. This resulted in the word ‘How’ being another of the most commonly occurring word groups identified within the participant dataset (20 occurrences). This finding suggests that although different terminology was used by different participants, the majority of these OPDP staff believe that creating a deeper understanding of the causes and development of an offender’s presenting problems is an important aspect of formulation. This interpretation is supported by the below examples:

*“**How** a certain aspect of someone's **behaviour** or **presentation** may have **developed** over time” (P15)*

*“A hypothesis about someone's **problems** and **behaviour**, **how** they have **developed**” (P19)*

*“A summary of an individual's core **problems**, reflecting **how** **difficulties** may relate to one another, **how** they may have **developed**” (P53)*

Academic Comparison. In contrast to the participant definitions, ‘Understand/Understanding/Understood’ was *not* found to be one of the most frequently occurring word groups within the academic definitions. Instead, the word group ‘Explain/Explanation/Explanatory’ (12 occurrences) was often used in its place:

*“A narrative that **explains** the underlying mechanism of the **presenting problem**”*
(NOMS & NHS, 2015b)

*“An **explanation** of the underlying mechanism of the **presenting problem**”*
(Knauer et al., 2017)

This difference between the participant and academic definitions may reflect the fact that the primary purpose of formulation within the OPDP is to improve OM *understanding* of each case in order to enable these OMs to better manage offenders on their caseloads. Within the

OPDP therefore, simply providing an explanation of a case without ensuring it is understandable to the OM may be inadequate. Academic definitions on the other hand are more likely to be written from a perspective whereby formulation is utilised by a psychologist, meaning that any type of (potentially complex) *explanation* of the person's problems/behaviour is likely to be useful and meaningful. This particular divide between the definitions of participants and academics may therefore reflect differences in who the audience of a formulation is perceived to be. This point is further supported by the definitions of these words; 'explanation' is defined as "the *action* or *process* of explaining something" (Oxford English Dictionary, n.d.-a), whereas 'understanding' is defined as "the *power* or *ability* to understand" (Oxford English Dictionary, n.d.-b). These definitions suggest that an 'explanation' is something that is active (and linked to the person or thing doing the explaining), whereas 'understanding' is more passive (and relates to the experience of the recipient).

In further contrast to the participant definitions, neither the word groups 'Psychological/Psychologically' or 'How' were found to be amongst those most frequently occurring within the academic definitions. However, even in the absence of these word groups, the academic definitions *did* commonly convey the same concept as the participant definitions (i.e., that a formulation should examine the causes and/or development of a person's problems and/or behaviour), but with the use of different terminology. In general, much more complex language was used within the academic definitions to communicate this idea:

*"A narrative that **explains** the underlying mechanism of the **presenting problem**"*

(NOMS & NHS, 2015b)

*"Integrates information about an individual to conceptualise the factors causing and maintaining their current **difficulties**"* (Völlm, 2014)

*“The process or product of gathering and integrating diverse information to **develop a concise account of the nature and etiology of the problems**” (Hart et al., 2011)*

This is likely to be because academic literature is typically written by ‘experts’ in the field, and is often read by those with some existing familiarity or interest in the topic. Jargon is therefore a useful way to quickly convey complex information to knowledgeable readers. Conversely, OPDP staff were not required to write their definitions for a specific audience, and are also more likely to have a ‘practical’ knowledge of case formulation rather than ‘technical’ knowledge. Therefore, there was less need for jargon to be used within these participant definitions.

A second potential reason for these differences in language complexity concerns the required generalisability of these definitions; OPDP staff may have been likely to define formulation only as they have experienced it (i.e., within the OPDP), which would explain why they often used very similar and simple terms. Conversely, academic definitions are often required to be more inclusive, (i.e., encompassing a wider range of different types and methods of formulation), whilst also remaining as succinct as possible. This is therefore likely to have increased the difficulty of the task and in turn the complexity of the language required within these academic definitions.

In sum, although the academic definitions initially seemed very different to participant definitions in this respect, they did in fact commonly describe similar concepts (i.e., that a formulation should develop an understanding/explanation of the causes of a person’s problems and/or behaviour) but with the use of very different terminology. This finding highlights the utility of using both quantitative *and* qualitative methods of content analysis to analyse this type of data, as it has enabled the development of a much broader understanding of these two sets of definitions.

Life History and Development. The remaining two most frequently occurring word groups identified within the participant definitions were ‘History/Background/Past’ (19 occurrences), and ‘Experience/Experienced’ (18 occurrences). These word groups commonly appeared together. Many participants used these words to explain that a formulation should use information about an offender’s *history/past/background* and/or *experiences* in order to create the earlier mentioned understanding of how the offender’s presenting problems may have developed.

*“Consideration of a person’s whole **history**, from early **experiences** and attachments to later life events, that helps us **understand problem** development” (P2)*

*“A way of exploring/explaining why individuals may **behave** in the way they do, taking into account **background** information from their personal **history**” (P12)*

*“It is a way of piecing together **past experiences** and using them to gain a better **understanding** of and to make sense of a current **difficulty**” (P28)*

These examples suggest that from the perspective of OPDP staff, a formulation should create an understanding of each case by examining how the offender’s past experiences may have led to their current difficulties. This finding further confirms that OPDP staff recognise that formulation should not be simply descriptive in nature, but that it should add to what is known about each case by exploring *how* and *why* an offender’s problems may have developed over time.

Academic Comparison. Again, the word groups ‘History/Past/Background’, and ‘Experience/Experienced’ were *not* found to be amongst those most frequently occurring within the academic definitions. Although the academic definitions *did* often mention that information should be gathered and linked together in order to create an explanation of why a

person's problems/behaviour may have developed, there was often no mention of the specific type of information that should be used to do this:

“The process or product of gathering and integrating diverse information to develop a concise account of the nature and etiology of the problems”

(Hart et al., 2011)

“A theoretically based conceptualisation of the salient information of a case in order to make explanatory inferences about causes and maintaining factors of target problems” (Brown & Völlm, 2013)

As the above examples show, rather than focusing on one particular type of information (such as information about a person's past/history/background), the academic definitions often stated that a formulation should consider a *range* of information (i.e., 'diverse' or 'salient' information) in order to create the explanation of the person's problems. On the surface this seems beneficial, as giving weight to a range of information rather than one specific type of information may reduce the chances of important details being missed.

However, this difference between participant and academic definitions may also reflect the fact that all of the OPDP staff members who took part in the survey are responsible for writing formulations as part of their job roles. These participants may therefore have more learned experience of which information is typically most helpful when developing an understanding of why a person's problems have developed (i.e., information about the person's past experiences). This difference between participant and academic definitions might therefore reflect the fact that the participant definitions were written from a much more 'practical' viewpoint in comparison with the academic definitions.

Additional Differences.

Treatment and Intervention. Although not a frequently occurring word group within the participant definitions, the third most commonly occurring word group within the academic definitions was ‘Treatment/Intervention’ (17 occurrences). This word group was often used when referring to the idea that the main purpose or endpoint of a formulation should be to construct a treatment or intervention plan suited to the needs of the individual in question.

*“A process that provides psychological understanding of a person’s difficulties and ideally results in a **treatment** plan to resolve them”* (Brown et al., 2018)

*“Case formulation should lead to a logical **treatment** plan”*
(McMurrin & Bruford, 2016)

*“A practical tool that provides a framework to understand **treatment** needs and develop appropriate plans of **intervention**”* (Brown & Völlm, 2013)

However, from the standpoint of OPDP staff, treatment and/or intervention does not seem to be a particularly important area for a formulation to focus upon. As discussed earlier, this is likely to be because formulations within the OPDP are primarily written to increase OM understanding of each case and to identify strategies that may be particularly effective in *managing* each offender. Instead, formulations written within other services (i.e., clinical services) are typically written to identify appropriate *treatment* plans and interventions to be utilised by clinical staff to reduce the problems faced by the client/patient. This difference identified between participant and academic definitions is therefore likely to be explained by differences in the perceived purpose of formulation across services.

However, the additional absence of any word group related to the *management* of offenders within the participant definitions suggests that either OPDP staff are either not

engaging with formulation in the way expected, or that OPDP staff do not believe that identifying appropriate management strategies *is* a primary purpose of formulation within the OPDP. This suggests that the utility and purpose of formulation within the OPDP may need to be re-examined in future.

Creating a Hypothesis. An additional word group frequently mentioned within the academic definitions but not the participant definitions was ‘Hypothesis/Hypotheses’ (12 occurrences). This word group was typically used within the academic definitions to emphasise that any explanation developed within a formulation is typically provisional and therefore should not be taken as fact:

*“A provisional explanation or **hypothesis** of how an individual comes to present with a certain disorder or circumstance”* (Knauer et al., 2017)

*“Should lead to the generation of some tentative **hypotheses** about what has impacted upon an individual to lead them to behave and function in the way they do”*
(Mapplebeck et al., 2017)

*“It should enable confident **hypotheses** about the drivers for behaviour”*
(Radcliffe et al., 2018)

The discovery that the word group ‘Hypothesis/Hypotheses’ was *not* found to be one of the most commonly occurring word groups within the participant definitions suggests that OPDP staff may not be as aware as academics that the explanation provided within a formulation is typically provisional and therefore subject to change or revision after a period of testing the ideas within it. This is likely to be because formulations within the OPDP are not often revised over time unless an OM specifically requests a review of the case. It is therefore understandable that the word ‘hypothesis’ is not one that comes to mind when OPDP staff members are defining case formulation. However, this does suggest that these staff members

may need to be made more aware that any explanation or understanding developed within a formulation should not be assumed as fact, but instead treated as guide that may change in the future as more information becomes available.

Absent Content. As well as analysing the types of content included within these participant and academic definitions, consideration was given to which types of content were *not* included. This was to gain a better understanding of which elements of formulation may generally be thought of as less essential than those identified.

As earlier discussed, a number of the participant definitions referred to the idea that a formulation should develop a *psychological* understanding of the offender's presenting problems. However, none of these definitions included examples of which specific psychological theories or models should be used to do this. This might indicate that OPDP staff are aware there is no 'ideal' or standard psychological theory or model to use when formulating a case, but that the most appropriate one should be implemented in each situation. Secondly, none of the most frequently identified word groups within the participant or academic definitions included any reference to the structure, style, or length of a formulation, suggesting that these are also elements that can be applied flexibly across situations.

These observations highlight that participants and academics typically define formulation in terms of *what* it should generally contain (i.e., a psychological understanding/explanation of presenting problems) rather than specifics about *how* this information should be interpreted or presented (i.e., by using a particular theory or style). This suggests that it is possible to create a shared understanding of formulation across domains.

Shared Definition. On the basis of the above comparison of participant and academic definitions, a working ‘shared definition’ of case formulation was constructed using the common elements identified:

“Case formulation is the process by which relevant information about an individual is integrated to create a psychological understanding or explanation of the cause of their presenting problems”

To confirm the representativeness of this working shared definition, it was put back into context by comparing it against the full participant and academic definitions. In terms of the participant definitions, it was found that the working shared definition represented these well, regardless of their complexity. A range of examples are provided below to demonstrate this point (definitions presented in their entirety):

“A psychological understanding of a person's difficulties” (P45)

“A psychological understanding of an individual's presenting difficulties underpinned by psychological theory” (P50)

“A psychologically driven explanation or narrative, pulling on theoretical ideas to explain the complexities of problem behaviours” (P9)

“A case formulation is a way of organising information which may come from a variety of sources to produce hypotheses (often using psychological theories) about the function of a particular problem such as a behaviour or way of relating to others and the world” (P26)

Although each of these participant definitions differed slightly in terms of their length and the language used, the working shared definition provides a good summary of these definitions.

Although (as discussed earlier) the academic definitions were wordier and generally

more complex than the participant definitions; the working shared definition was also found to represent these well (definitions presented in their entirety):

“Case formulation is a theoretically based concise explanation or conceptualisation of the information obtained from diverse sources. It offers a hypothesis about the cause and nature of the presenting problems and provides a framework to developing the most suitable management or treatment approach”

(NOMS & NHS, 2015b)

“Case formulation (CF) integrates information about an individual to conceptualise the factors causing and maintaining their current difficulties” (Völlm, 2014)

“Case formulation is a process that provides psychological understanding of a person’s difficulties and ideally results in a treatment plan to resolve them. It is both a process and an outcome, in that it means that collation of information about the individual leads to the outcome of a narrative account of their risks and needs”

(Brown et al., 2018)

“It is essentially a process of understanding individuals and their responses to their idiosyncratic lives. The key features of a case formulation are that it should be individualized and should summarize the service user’s core problems. It should draw on psychological theory to suggest how difficulties may relate to one another and how those problems are triggered and maintained. It should enable confident hypotheses about the drivers for behaviour and indicate a plan of intervention. All formulations should be open to revision and re-formulation”

(Radcliffe et al., 2017)

Aside from the references made to ‘treatment/intervention’ and ‘hypothesis/hypotheses’ (as discussed earlier), these examples show that the shared working definition is also able to

provide a sufficient representation of the core content included within the academic definitions. Overall, this suggests that there *is* a foundation of shared understanding across professional and academic domains, and therefore, that creating a universally shared definition of case formulation is possible.

6.3.2.4 Summary and Conclusion of the Analysis of Case Formulation Definitions

To summarise, the case formulation definitions provided by participants were found to be fairly similar to those developed by academics, suggesting that there *is* a level of shared understanding across professional and academic domains. For example, although different terms were used in some cases to describe certain concepts, both sets of definitions frequently expressed that a formulation should be primarily concerned with understanding or explaining the causes and development of an individual's core problems. Although a few differences *were* highlighted between these two sets of definitions, these differences were understandable due to the unique way case formulation is constructed within the OPDP (i.e., focused more heavily on management rather than treatment and not typically viewed as a hypothesis to be reviewed over time).

These findings suggest that the development of a universally accepted definition of case formulation may indeed be possible (as evidenced by the working shared definition presented earlier), although this definition may need to be quite broad in order to sufficiently account for the various types of formulation performed within different services. In addition, the fact that participant definitions matched academic definitions in a number of different ways also promisingly suggests that OPDP staff *are* generally well aware and informed about what case formulation is and what it should include, regardless of their level of psychological training and knowledge.

However, this analysis has also highlighted some deficiencies in our understanding,

such as what OPDP staff believe the end goal of a formulation to be. This is because neither the words ‘treatment’ *or* ‘management’ were found to be amongst those most frequently occurring within the participant definitions, suggesting that OPDP staff do not believe that constructing an appropriate treatment *or* management plan for the offender is a primary purpose or focus of OPDP formulation.

Aside from this discrepancy, participants *did* typically describe and define case formulation very similarly to how it has been defined and understood throughout the present thesis. This therefore suggests that the responses provided by these participants to the remaining survey questions (and therefore the conclusions made on the basis of these responses) are indeed likely to be highly relevant and applicable to the thesis and compatible with the rest of the research that has been presented within it.

6.3.3 Multiple Choice Questions (Quantitative Data)

6.3.3.1 Method of Analysis

To provide an overview of participant responses to the multiple-choice survey questions (including those regarding case formulation skills, experience, and past formulation training), frequency counts were examined. These will be presented in sub-sections below, organised according to the subject matter of each question.

6.3.3.2 Experiences of Writing Case Formulations

Number of Formulations Written. The number of formulations each participant reported having written varied greatly, from 1 to 1,200 (Mdn = 70). Health practitioners reported having completed the largest number of formulations (Mdn = 400), whereas assistant psychologists reported having completed the fewest (Mdn = 30). This is likely to be

due to time spent in post, as assistant psychologists also reported having held their roles for a fewer number of years on average than staff within other roles.

Level of Formulations Written. As previously described, three different levels of formulation are written within the OPDP, representing different levels of complexity. Level 1 formulations are the least complex, whereas level 3 formulations are often reserved only for the most complex cases. When asked, over 90% of the survey participants indicated that they were currently responsible for writing formulations of level 2 or above. This finding indicates that the majority of staff who responded to the survey are responsible for carrying out formulations of at least moderate complexity as part of their duties. Seven out of the 11 participating offender managers (OMs) were part of this 90%, indicating that even though OMs are likely to have a lower level of psychological expertise as compared to psychologists or therapists, they are also often required to carry out relatively complex levels of formulation within the OPDP. However, level 3 formulations were still most typically carried out by psychologists, indicating that the most complex formulations are reserved for those with most psychological expertise. Please see Table 28 for a full overview of this information.

Table 28

Median Number of Formulations Written and Most Complex Level of Formulation Written by Participants Within Each Job Role

Job Role	Median Number of Formulations Written	Most Complex Level of Formulation Written within Current Role (n & %)		
		Level 1	Level 2	Level 3
Psychologist	100	0 (0%)	6 (23%)	20 (77%)
Assistant Psychologist	30	0 (0%)	3 (33%)	6 (67%)
Offender Manager	50	4 (36%)	6 (55%)	1 (9%)
Health Practitioner	400	0 (0%)	1 (25%)	3 (75%)
Therapist	120	0 (0%)	2 (50%)	2 (50%)
Service Manager	35	1 (100%)	0 (0%)	0 (0%)

6.3.3.3 Quality Assessment of Case Formulations

Quality Tools. In total, 80% of the participants indicated that they had previously used at least one formulation quality tool or checklist to aid them in writing formulations. The most common quality tool used by participants was reported to be the Case and Risk Formulation Self-Auditing Tool (Audit Tool; NOMS & NHS, 2015b), used by 51% of participants, followed by the Case Formulation Quality Checklist-Revised (CFQC-R; McMurrin & Bruford, 2016), used by 20% of participants. 22% of participants additionally indicated that they had previously used a quality tool associated with a specific therapy model to aid them in writing formulations.

However, when participants were asked how *often* they use these tools and checklists to aid them in writing formulations, almost half (47%) of participants indicated that they use

them only ‘occasionally’. In contrast, only 9% of participants reported that they ‘always’ use tools or checklists when writing formulations. These results suggest that the 48 extracted OPDP formulations examined within Chapter 3 of the present thesis may have been of intermediate quality because many staff members do not use these quality tools and checklists on a regular basis to aid them in writing formulations.

Quality tool use was not related to job role in the way that might have been expected (i.e., that those with less expertise use these tools more often), as 50% of the participating psychologists indicated that they use quality tools or checklists at least ‘half the time’, compared with only 18% of participating OMs. This suggests that those with *more* formulation experience are those most likely to use these tools on a regular basis. Please see Table 29 for a full overview of this information.

Table 29*Number and Frequency of Quality Tools Used When Writing Formulations (Split by Job Role)*

Job Role	Median Number of Quality Tools Used	Frequency of Quality Tool Use (n & %)					
		Never	Occasionally	Quarter of the Time	Half of the Time	Most of the Time	Always
Psychologist	1	4 (15%)	8 (31%)	1 (4%)	6 (23%)	6 (23%)	1 (4%)
Assistant Psychologist	1	1 (11%)	6 (67%)	0 (0%)	0 (0%)	1 (11%)	1 (11%)
Offender Manager	1	4 (36%)	5 (46%)	0 (0%)	0 (0%)	0 (%)	2 (18%)
Health Practitioner	1	1 (25%)	1 (25%)	0 (0%)	0 (%)	2 (50%)	0 (0%)
Therapist	1	0 (0%)	1 (25%)	1 (25%)	1 (25%)	1 (25%)	0 (0%)
Service Manager	0	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Other Assessment Methods. When asked about other methods of quality assessment (i.e., feedback within supervision), 38% of participants stated that their case formulation skills were assessed at least monthly. Contrastingly, 16% of participants revealed that their skills had never been assessed at all. Frequency of assessment was found to correspond with the complexity of formulations written, with 75% of those responsible for writing level 3 formulations being assessed at least annually, compared with just 48% of those responsible for writing only level 1 and/or 2 formulations.

When asked about the result of their last formulation assessment, only 20% of participants who reported being assessed stated that this was ‘excellent’, although an additional 76% reported that this was ‘good’. *No* participant reported that the result of their last assessment highlighted a need for improvement. On the surface this is a very encouraging finding, suggesting that the formulation skills of OPDP staff are adequate. However, this finding could also be the result of self-report bias, or a failing on the part of those assessing formulations to inspect them with enough scrutiny. It would therefore be useful for future research to explore this assessment process in more detail. Please see Table 30 for a summary of this information split by job role.

Table 30*Result of Last Formulation Assessment as Reported by Participants (Split by Job Role)*

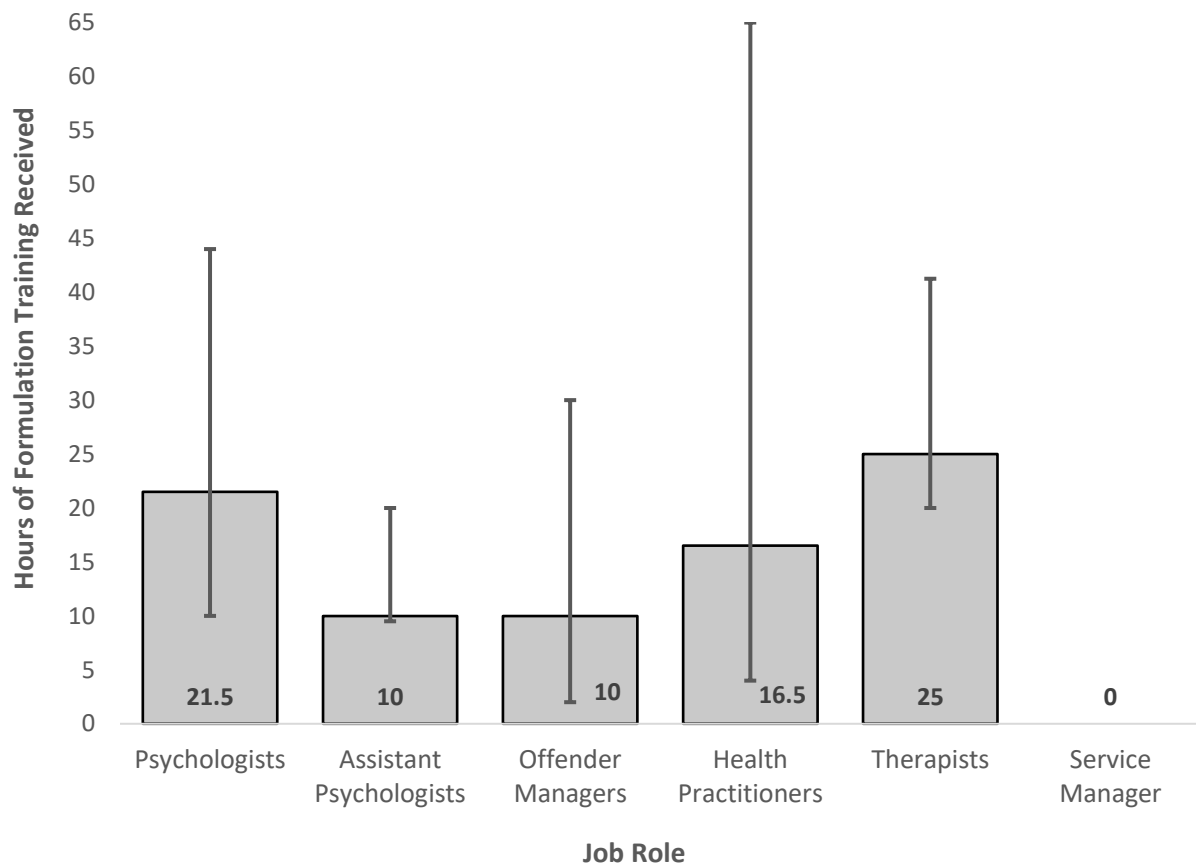
Job Role	Outcome of Last Formulation Assessment (n & %)				
	Never Assessed	Need for Improvement	Fair	Good	Excellent
Psychologist	5 (19%)	0 (0%)	1 (4%)	15 (58%)	5 (19%)
Assistant Psychologist	0 (0%)	0 (0%)	1 (11%)	7 (78%)	1 (11%)
Offender Manager	3 (27%)	0 (0%)	0 (0%)	6 (55%)	2 (18%)
Health Practitioner	0 (0%)	0 (0%)	0 (0%)	3 (75%)	1 (25%)
Therapist	0 (0%)	0 (0%)	0 (0%)	4 (100%)	0 (0%)
Service Manager	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

6.3.3.4 Experiences of Case Formulation Training

Quantity of Training. The quantity of case formulation training participants reported having received varied from 0 to 100 hours (Mdn = 15 hours). Figure 12 shows that therapists reported having received the most training on average (Mdn = 25 hours), whereas the service manager reported having received the least (0 hours). Amount of training was found to correspond with the complexity of formulations carried out, with those writing only level 1 formulations having received the least amount of training (Mdn = 0 hours), and those writing level 3 formulations having received the most (Mdn 20 = hours). Encouragingly, amount of training received corresponded positively with the result attained at last formulation assessment. Please see Figure 13 for an overview of these results.

Figure 12

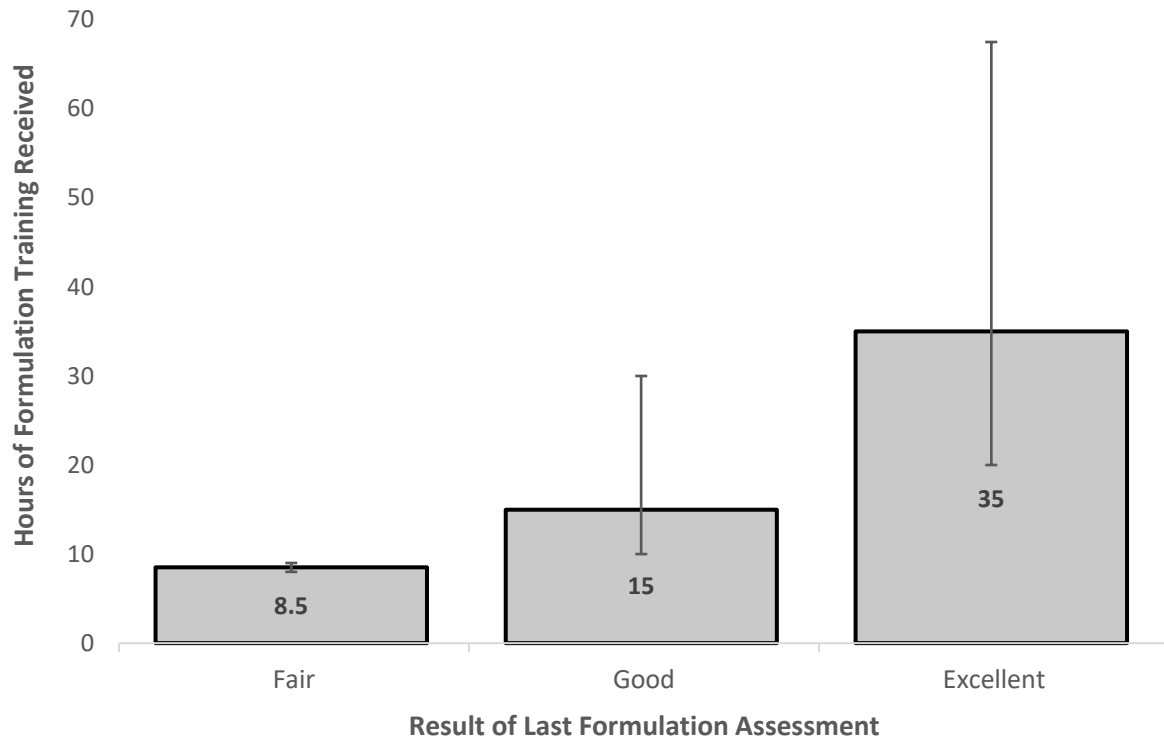
Median Hours of Formulation Training Received by Participants Within Each Job Role



Note. Error bars represent interquartile range.

Figure 13

Median Hours of Formulation Training Received by Participants Who Received Fair, Good or Excellent Results During Their Last Formulation Assessment



Note. Error bars represent interquartile range.

Frequency of Training. Just over half (51%) of the survey participants reported that they had received case formulation training within the past year. Inversely however, 6% of the participants reported that they had not received case formulation training for over five years, and 7% reported that they had *never* received any case formulation training. Table 31 shows that assistant psychologists were those most likely to have received formulation training within the past year (78%), whereas psychologists were the least likely to have received formulation training within this time frame⁹⁰ (31%). As was seen in Figure 12 however, psychologists were found to have received many *more* hours of training overall

⁹⁰ Aside from the service manager, who reported never having received any case formulation training.

than assistant psychologists. This suggests that psychologists receive the majority of their formulation training when first becoming qualified, with training after this point (i.e., to update existing knowledge and skills) becoming much less regular. This finding fulfils one of the main aims of the survey, which was to understand whether (and how often) the case formulation skills of psychologists are updated and refreshed over time.

Relating these findings to formulation complexity, 50% of the participants responsible for carrying out level 3 formulations had received training within the past year, compared with only 20% of those responsible for carrying out only level 1 formulations. This suggests that training priority is still most generally given to those who are responsible for formulating the most highly complex cases.

Table 31

Time Since Last Case Formulation Training as Reported by Participants (Split by Job Role).

Job Role	Time Since Last Training (n & %)				
	< 1 Year	1-2 Years	2-5 Years	> 5 Years	No Training Received
Psychologist	8 (31%)	6 (23%)	9 (34%)	2 (8%)	1 (4%)
Assistant Psychologist	7 (78%)	2 (22%)	0 (0%)	0 (0%)	0 (0%)
Offender Manager	7 (64%)	1 (9%)	1 (9%)	0 (0%)	2 (18%)
Practitioner	3 (75%)	0 (0%)	0 (0%)	1 (25%)	0 (0%)
Therapist	3 (75%)	0 (0%)	1 (25%)	0 (0%)	0 (0%)
Service Manager	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)

Sources of Training. Many of the participants who had received case formulation training in the past reported having received this training from a number of different sources.

For example, 51% of these participants reported that they had received formulation training as part of a professional training programme which had partially focused on case formulation, 49% reported that they had received formulation training during a training programme which had been specifically dedicated to case formulation, and 42% reported that they had received formulation training as part of their standard OPDP training. In addition, almost all of the psychologists taking part in the study (92%) reported that they had been trained to write formulations as part of their doctoral programme. On average, participants reported that they had received case formulation training from two different sources (ranging from one to five sources overall).

These findings suggest that most of the formulation training received by staff is provided by outside sources and not by the OPDP specifically. In addition, these findings highlight that even though all participants who responded to the survey are currently responsible for writing case formulations as part of their duties, formulation training was not typically provided as part of their standard job training. This indicates that currently, there is no standardised amount, frequency or source of case formulation training provided to staff working within the OPDP.

Methods of Training. Participants reported that the most common methods used to deliver the case formulation training they had received included classroom-style lectures (84%), case vignettes (81%) and group tasks (69%).

6.3.3.5 Satisfaction with Training

Satisfaction with Quantity of Training. Only 27% of participants reported that they were ‘Very Satisfied’ with the amount of case formulation training they had received. Those who were at least ‘Somewhat Satisfied’ with this amount reported having received more

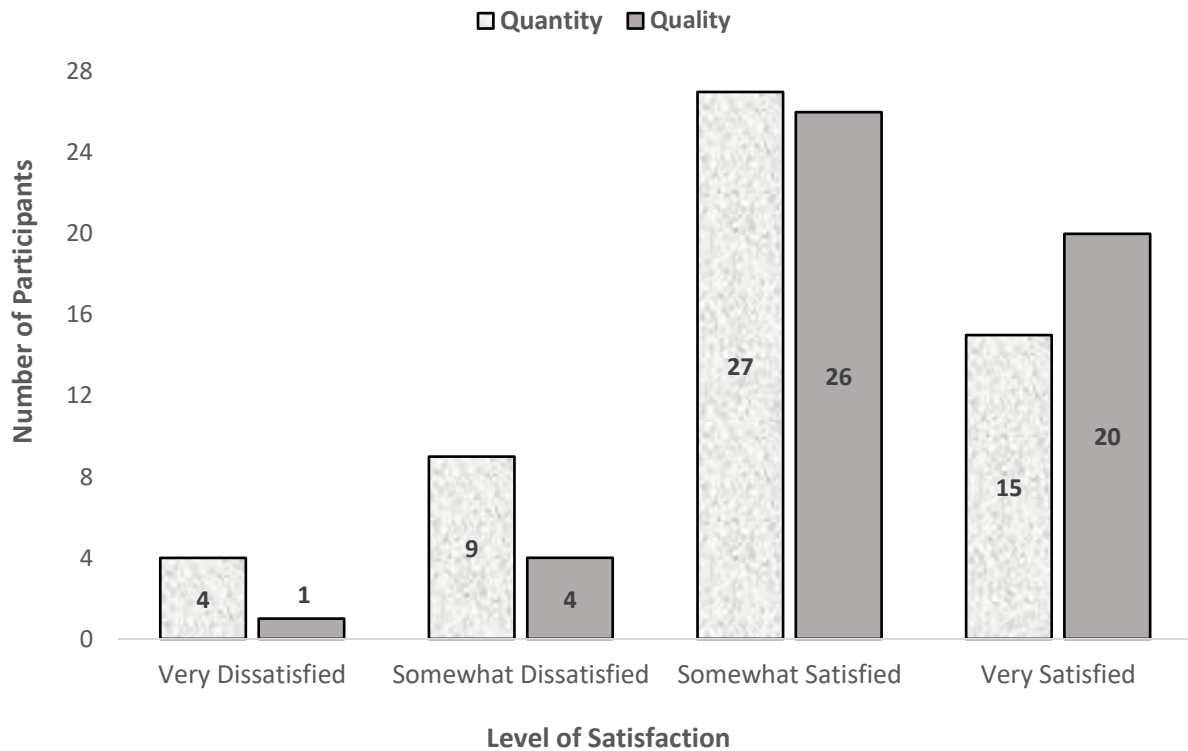
training (Mdn 20 hours) than those who were ‘Somewhat Unsatisfied’ or ‘Very Unsatisfied’ with the amount of training they had received (Mdn 5 hours).

Satisfaction with Quality of Training. The 7% of participants who had never received case formulation training were not asked to respond to this question. Of the remaining participants, less than half (41%) reported that they were ‘Very Satisfied’ with the quality of the formulation training they had received.

Overall Satisfaction with Training. Overall, only 20% of participants indicated that they were ‘Very Satisfied’ with *both* the quantity and quality of case formulation training they had received. This suggests that the case formulation training provided to staff working within the OPDP may need some significant improvements. Please see Figure 14 for a full overview of the results relating to training satisfaction.

Figure 14

Participant Level of Satisfaction with the Quantity and Quality of Case Formulation Training Received



Note. Participants who had never any case formulation training ($n = 4$) provided ‘quantity’ ratings, but not ‘quality’ ratings. Two of these participants were ‘Very Dissatisfied’ with the quantity of formulation training they had received.

6.3.3.6 Confidence in Writing Case Formulations

Only 22% of the participants reported feeling ‘Very Confident’ in their case formulation skills. However, only one participant reported feeling ‘Very Unconfident’, suggesting that most were somewhere in the middle. Table 32 provides an overview of staff confidence in their formulation skills, split by job role.

Table 32*Confidence in Formulation Skills as Reported by Participants (Split by Job Role)*

Job Role	Confidence in Formulation Skills			
	Very Unconfident	Somewhat Unconfident	Somewhat Confident	Very Confident
Psychologist	0 (0%)	1 (4%)	16 (61%)	9 (35%)
Assistant Psychologist	0 (0%)	0 (0%)	7 (78%)	2 (22%)
Offender Manager	1 (9%)	1 (9%)	8 (73%)	1 (9%)
Practitioner	0 (0%)	1 (25%)	3 (75%)	0 (0%)
Therapist	0 (0%)	0 (0%)	4 (100%)	0 (0%)
Service Manager	0 (0%)	0 (0%)	1 (100%)	0 (0%)

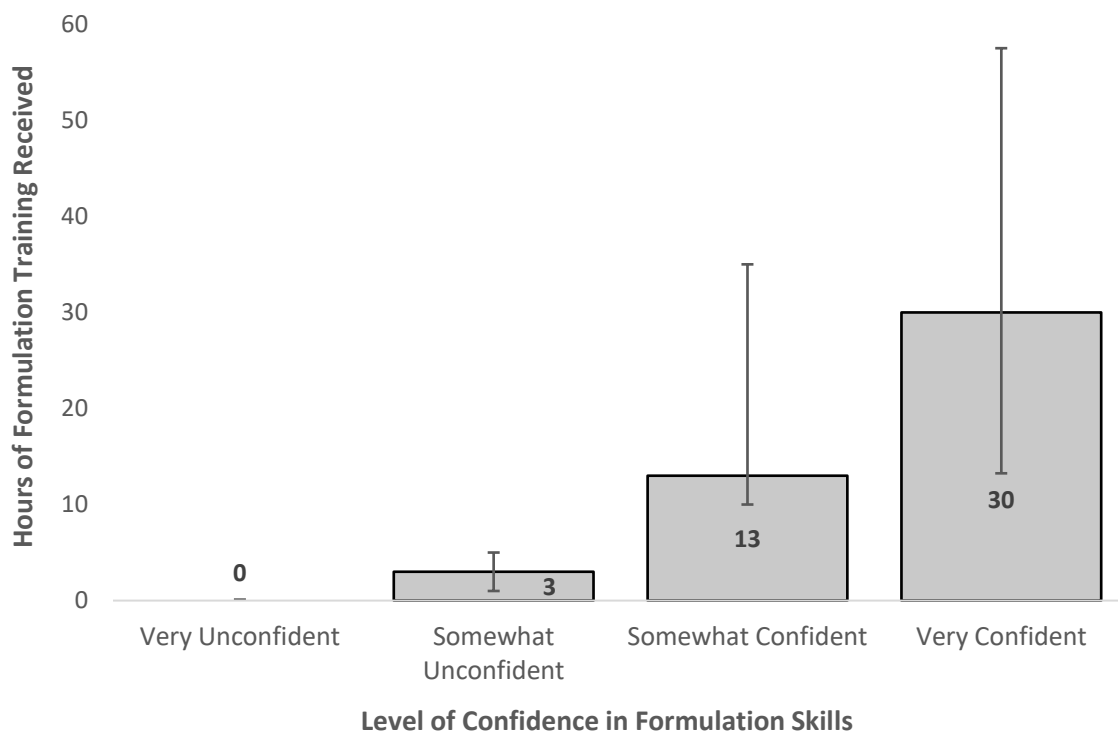
Confidence was found to correspond with the complexity of formulations written, with 28% of those responsible for writing level 3 formulations reporting they were ‘Very Confident’ in their skills, compared with *none* of those responsible for writing only level 1 formulations. This is likely to be related to the earlier finding that those responsible for writing only level 1 formulations had received the least formulation training on average. Figure 15 supports this suggestion, showing that level of confidence in formulation skills was found to strongly correspond with the quantity of case formulation training received. This finding suggests that confidence in writing formulations cannot be sufficiently acquired during practice alone, but that it must be further developed through training where additional skills, knowledge and assistance can be attained.

Level of confidence was also found to correspond somewhat with the *quality* of case formulation training received, with 40% of those who were ‘Very Satisfied’ with the quality of their training also reporting feeling ‘Very Confident’ in their formulation skills, compared

with *none* of those who reported being ‘Somewhat Dissatisfied’ or ‘Very Dissatisfied’ with the quality of their training. This suggests that it is not only the *quantity* of case formulation training received by staff that is of importance for developing confidence, but also the *quality* of this training.

Figure 15

Median Hours of Formulation Training Received by Participants with Different Levels of Confidence in their Formulation Skills



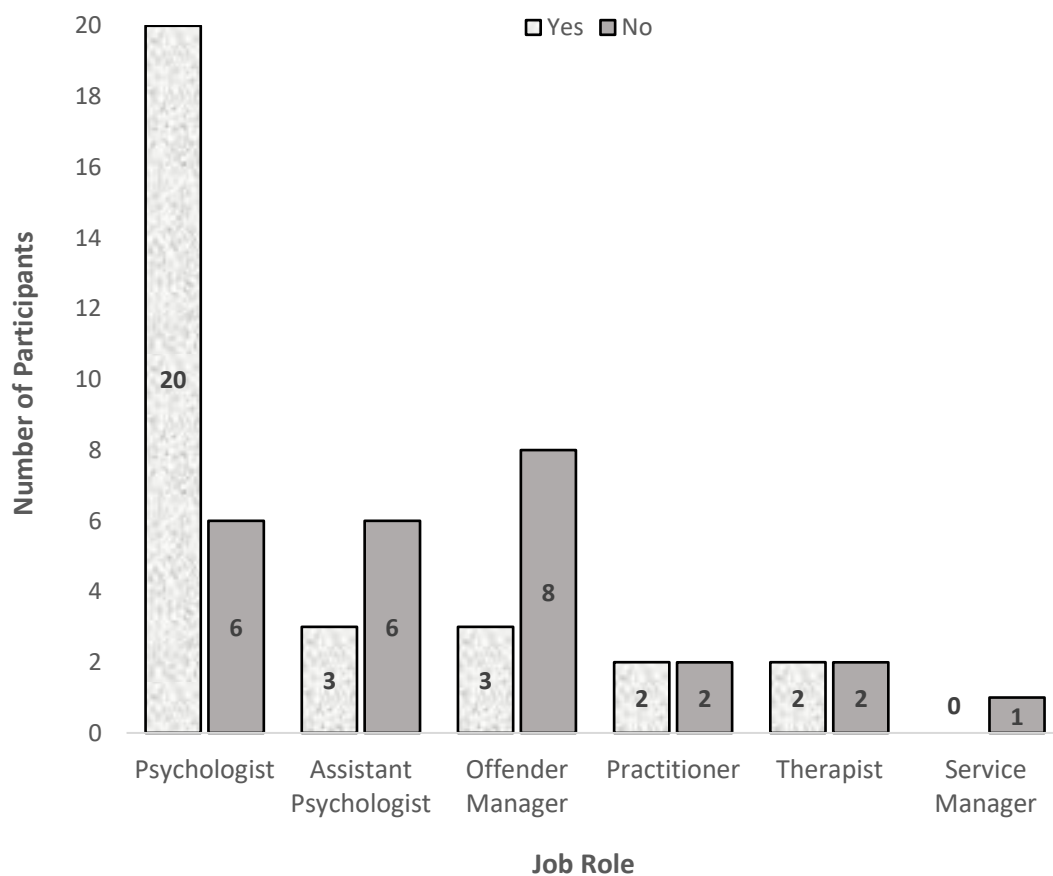
6.3.3.7 Providing Training to Others

Over half (55%) of the participants surveyed reported that they had delivered case formulation training to others in the past. This most commonly consisted of providing informal ‘on the job’ assistance to others (83%), providing semi-formal training during supervision meetings (73%), and/or providing formal training as part of an official training programme (53%). The recipients of this training were most commonly reported to be OMs

(20%), psychologists working outside of the OPDP (20%), and healthcare staff (17%). Figure 16 provides an overview of the number of participants within each job role who reported that they had (or had not) provided case formulation training to others.

Figure 16

Number of Participants Within Each Job Role Who Have Provided Case Formulation Training to Others



When participants who reported that they had provided formulation training to others were asked how they had acquired the skills to deliver this training, 53% indicated that they had been provided with guidance by a supervisor or manager. The other 47% however reported that they had not received any guidance at all. Exploring this last finding in more detail, over half (57%) of the participants who stated they had *not* received any guidance on

how to train others reported that this was because they were a recognised expert within the case formulation field.

To assess whether those who had provided case formulation training to others were confident in their *own* formulation skills, responses relating to confidence levels were re-examined. This examination revealed that only 33% of the participants who reported having provided case formulation training to others also reported being ‘Very Confident’ in their formulation skills (63% reported being ‘Somewhat Confident’ and 3% (one participant) reported being ‘Somewhat Unconfident’). This suggests that some OPDP staff have been required or have found it necessary to train others to write formulations without first being fully confident in their own skills.

6.3.3.8 Summary and Conclusion of Multiple-Choice Responses

The responses provided by participants to these multiple-choice questions have highlighted that some improvements may need to be made to the formulation training provided to OPDP staff. Firstly, in some instances the amount of formulation training provided to each staff member was not consistent with their needs. For example, only 42% of participants reported that case formulation training had been provided to them as part of their standard OPDP training. Allocation of this training did not seem to be based on prior experience as might be expected, as four of the participants who reported *not* having been provided with formulation training by the OPDP (13%) also indicated that they had *never* received any formulation training in the past.

In addition, hours of formulation training received seemed to greatly vary *within*-roles as well as between them. For example, the quantity of training received by OMs was found to vary between 0 and 56 hours. In addition, hours of formulation training received was not always found to correspond with the complexity of formulations being written by these

participants. For example, one OM who had received two hours of formulation training reported being responsible for carrying out level 2 formulations, whilst another OM who had received 10 hours of training reported being responsible for carrying out only level 1 formulations. This suggests that the training provided to OPDP staff could be better standardised to ensure that all those requiring formulation training are provided with it, and that amount of formulation training provided to each staff member better corresponds with the complexity of formulations they are required to write.

Secondly, although psychologists might often be perceived to be equipped with superior formulation skills, the results of these multiple-choice questions suggest this might not always be the case. For example, the amount of formulation training psychologists had received also greatly varied (from 0 to 100 hours), suggesting there may be a lack of consistency within this role too. In addition, 19% of the psychologists surveyed indicated that their formulation skills had *never* been assessed, and only 24% of those whose skills *had* been assessed reported having received ‘excellent’ feedback during their most recent assessment. Furthermore, only 35% of the psychologists surveyed reported feeling ‘Very Confident’ in their own formulation skills, although they were those most likely to have provided case formulation training to others. Together, these results suggest that instead of assuming that the formulation skills of psychologists are superior to others or that psychologists do not require further training in this area, psychologists *should* be provided with regular training to continually update and develop their formulation skills. It is likely that this training would be welcomed by psychologists, as only 27% of the psychologists surveyed reported feeling ‘Very Satisfied’ with both the quantity and quality of formulation training they have received.

In total, only 20% of the participants taking part in the survey reported feeling ‘Very Satisfied’ with both the quantity and quality of formulation training they had received,

suggesting that there is a general need for training improvement across the board. Improving the *quantity* of training may be a relatively easy fix and is also likely to be highly effective (as participants with most hours of training were found to be those most confident in their formulation skills and also those most likely to have received ‘excellent’ feedback at their last formulation assessment). Improving the *quality* of formulation training however may be slightly harder to operationalise. To aid understanding of *how* the quality of training could be improved, participants were next invited to provide any suggestions for how OPDP formulation training could be best improved from their perspective. The qualitative responses to this question are discussed below.

6.3.3.9 Linking Formulation Training to Formulation Quality

As described at the beginning of this chapter, one of the aims of the present study was to investigate whether the quantity and/or quality of formulation training received by psychologists (as reported via multiple-choice questions) has any noticeable impact on the quality of forensic formulations they are able to produce. To do this, the researcher aimed to first identify those psychologists taking part in the present study who had also authored one or more of the OPDP formulations extracted within Study 1a. However, although 12 different psychologists authored the 48 formulations analysed within Study 1a, only two of these 12 psychologists could be identified as having provided responses to the current online survey. Therefore, this part of the study could not go ahead as planned.

6.3.4 Suggestions for Training Improvement (Qualitative Data)

All 55 participants provided at least one suggestion for how OPDP formulation training could be improved in the future. The length of these responses ranged greatly, from 2 to 155 words.

6.3.4.1 Method of Analysis

Thematic analysis was used to analyse these qualitative responses. This method was selected due to its flexibility, as it enables the researcher to identify patterns within qualitative data whilst also remaining inclusive of all participant perspectives (King, 2004). An inductive (rather than deductive) stance was adopted, meaning that the analysis was led by the content of the data itself rather than by any pre-existing theory or framework (Braun & Clarke, 2006). This stance was adopted for a number of reasons; firstly because no pre-existing theory was available (as no previous research had been conducted on this topic), and secondly so that the conclusions drawn from the analysis would represent the full range of responses rather than only a predetermined aspect of them.

To carry out this inductive thematic analysis, guidance provided by Braun and Clarke (2006) was followed. To begin, the participant responses to this question were read several times to gain familiarity with the data and to identify any preliminary patterns within it. These responses were then meticulously ‘coded’ by highlighting all words, details, and concepts relevant to the question asked. Any similar or related codes were then grouped together to form overarching ‘themes’ which represented key patterns within the data. Once this process was completed, each theme was reviewed to ensure that all codes within it were relevant to and supportive of that theme, and that these themes were clearly distinct from each other. Each finalised theme was then given a representative title. This process resulted in the identification of four major themes within the data: ‘Accessibility of Training’, ‘Improving Training Methods’, ‘Improving Training Content’ and ‘Providing Staff Support’. Each of these themes will be discussed in turn to provide the clearest understanding of how OPDP staff believe formulation training within the OPDP could be best improved in the future.

6.3.4.2 1. Accessibility of Training

This theme centred around what staff described as either a lack of access to case formulation training within the OPDP, or a lack of awareness about its availability.

Confirming the results of the multiple-choice questions, some participants highlighted that although they were required to write case formulations as part of their duties, they had never received any case formulation training. In addition, some participants reported that they were not aware that case formulation training was even offered by the OPDP, raising questions about its accessibility. Encouragingly, many of these participants reported that they *would* attend this type of training if it were offered to them, and that they would find it beneficial. This strongly suggests that there is a need either to provide more formulation training within the OPDP, or a need to make the existing training more accessible to all who would like to attend.

“I have not been aware that specific formulation training exists. Attending that may have been helpful prior to completing formulations” (Participant 5)

“If they advertised the training on Kahootz⁹¹ as I have never seen an opportunity to attend case formulation training” (P27)

“I would appreciate formal case formulation training” (P35)

“It would be very helpful for a basic (L1?) package to be developed to deliver to Specialist OMs when they first start on the Pathway as, from experience, this has been the biggest development requirement” (P36)

Importantly, participants who had never received training were not the only ones making these suggestions, as many participants who *had* received case formulation training also

⁹¹ ‘Kahootz’ is an information sharing platform used by OPDP staff.

indicated that additional training would be useful. For instance, it was commonly stated that formulation training should be an ongoing process rather than a one-off occurrence, suggesting that OPDP staff *do* believe that formulation skills should be continually updated to keep them relevant over time.

“I think having more of it on a regular basis” (P12)

“I feel like regular "refresher" training should be available. Like an annual event for those who are writing formulations regularly to go to share good practice, explore issues etc” (P44)

“As part of a rolling programme of training. It would be welcomed and useful to have such training” (P52)

“In my opinion - Training should be ongoing” (P55)

These findings together strongly suggest that OPDP staff should be offered more formulation training opportunities in the future. For instance, as indicated within one of the quotations above, perhaps (after completing their initial training), a short package of ‘refresher’ training could be offered to staff on a regular basis to ensure that they are able to continually develop their formulation skills during their time working within the OPDP. To highlight the value of providing more training (and as previously discussed), data from the multiple-choice questions presented earlier indicated that staff members who had received the most formulation training were also those with the most confidence in their formulation skills and those most likely to have received ‘excellent’ feedback at their last case formulation assessment. Together, these results therefore suggest that providing staff with more formulation training on a regular basis would be highly beneficial.

6.3.4.3 2. *Improving Training Methods.*

The second major theme identified within the data consisted of participants providing suggestions for how formulation training could be improved by altering the *methods* used to deliver it. These suggestions fell into a number of distinct categories and so will be discussed individually as smaller subthemes. A common thread running throughout these subthemes was that the methods used within formulation training should reflect practice as much as possible to ensure that any skills developed within training are relevant and easily transferable to practice.

Real Case Examples. The most common suggestion made by participants in relation to this theme was that training should involve discussing and formulating *real* cases rather than fictitious case vignettes.

“Ensuring that people can bring real anonymised cases in order to apply the training” (P10)

“Using ‘real’ cases from the caseload of the attendees” (P15)

“Using a real-life case who people on the course are aware of” (P17)

“Use of participants’ real case experiences/material – making it ‘live’ and relevant for practice” (P43)

This finding suggests that many OPDP staff do not find fictitious case vignettes to be realistic or useful when used within formulation training. By incorporating the use of real case information, staff would have more opportunity to apply their skills to genuine and complex cases, ensuring that they would be better equipped to deal with these types of cases in practice. It is possible that this method could present some ethical challenges (i.e., relating to the anonymity and confidentiality of personal information). However, the potentially high

value of using this method as communicated by staff suggests that it would be worth exploring possible avenues of overcoming these challenges (such as asking for prior consent from offenders before using their case information within training).

‘Hands On’ Practice. Another common suggestion made within this theme was that time should be set aside during training to allow staff to apply their newly learned skills by writing ‘practice’ formulations. In addition, some participants reported that it would be useful to receive feedback on these practice formulations during the training to allow them to further develop their skills. A number of participants explained that they were making these suggestions because the training they had received in the past had tended to be more ‘passive’ rather than interactive. This is supported by the data resulting from the multiple-choice questions, in which participants reported that the most common method of delivery used within their formulation training had been ‘classroom-style lectures’.

“Self-formulation rather than theory/PowerPoint exclusive training” (P31)

“More practical hands on experience of trying to develop formulations” (P42)

“Being provided with the opportunity to write a case formulation and then provided with feedback on this” (P50)

“Make it as interactive as possible please” (P51)

Together, these findings suggest that due to a lack of interaction, staff feel as if they are not gaining as much value from formulation training as they could be. By giving staff more opportunities to write practice formulations and to gain feedback on these during training, staff may be more likely to engage with the training process and further enhance their skills. Therefore, it is highly recommended that these suggestions are taken into consideration when developing any future training.

Expert and Benchmark Formulations. A third suggestion for improving the methods used within formulation training was to involve case formulation ‘experts’ who could demonstrate how to best write formulations, or for the training to involve examples of these ‘gold standard’ formulations:

“I would also like it to involve a benchmarking exercise” (P12)

“Expert demonstration” (P30)

“Examples of gold standard formulations” (P51)

“Use of ‘gold standard’ level three examples” (P50)

Although it *could* be beneficial for these methods to be used within training, it is also problematic to assume that ‘expert’ or benchmark formulations are of a ‘gold standard’ as suggested by these participants. This is because (as discussed within Chapter 2 of the present thesis) research has not yet been able to confirm what a “high quality” formulation objectively consists of. Therefore, it is difficult to verify that formulations deemed to be of a ‘gold standard’ are actually of superior quality. This point is supported by Mumma and Mooney (2007a), who stated that “the extent to which expert clinicians’ formulations are a “gold standard” is unclear” (p. 475).

Although participants did not state who these ‘experts’ could be, it might be reasonable to assume that they were referring to consultant or lead psychologists, as these are the people who are often perceived to have the most superior formulation skills. However, the responses provided by psychologists to the earlier multiple-choice questions suggest that (similar to staff within other roles) psychologists often do not feel ‘very confident’ in their formulation skills or ‘very satisfied’ with the formulation training they have received themselves. Therefore, if ‘expert’ or ‘benchmark’ formulations *were* incorporated into any

future formulation training, it may be wise to use these alongside other training methods to ensure that staff are aware that these types of formulations are not necessarily superior.

6.3.4.4 3. Improved Training Content

A third major theme observed within this data was that staff would also like the *content* of formulation training to be improved in some respects. Two subthemes were identified within this theme: ‘Clarity and Consistency’, which included suggestions for how formulation training content could be improved generally; and ‘Psychological Content’, which comprised of requests for specific types of content to be covered within future formulation training.

Clarity and Consistency. In terms of improving the content of training more generally, many participants indicated that it would be helpful for key questions about OPDP formulation to be better clarified. These questions mainly centred around the different *levels* and *types* of formulation constructed within the OPDP, indicating that staff may feel unsure about these particular aspects of formulation within the OPDP:

“Clear guidelines around what should be included in each level of formulation”

(P14)

“I’d like to better understand the differences between the three levels as this seems to vary” (P33)

“More differentiation of the different levels of formulation (1, 2 and 3), and more clarity about how case formulation differs from risk formulation, and how risk formulation differs from problem formulation” (P49)

Confusion over the differences between formulation levels may partially explain the finding observed within Study 1a (p. 100) that only around half of the OPDP formulations extracted

were assessed by the researcher as being of their intended level. Although it is not yet known whether formulating at a different level than intended has an impact on outcomes, it is important for staff to clearly understand the differences between these different levels (and types) of formulation for a number of different reasons. Firstly, staff need this understanding in order to write formulations which are best suited to the complexity and needs of each offender. Secondly, staff need this understanding as each level and type of formulation is likely to be associated with a different cost to produce in terms of time and resource. Formulating at a different level than intended or required (i.e., producing a formulation of a level 3 standard when only a level 2 standard was needed) could therefore result in excess usage of these valuable resources.

Potentially highlighting the source of some of this confusion, participants stressed that the content of formulation training should be better standardised to ensure that all staff can develop comparable levels of formulation knowledge and skill:

“So everyone was working within the same standards and knew what specific information to put into a formulation” (P13)

“Having a standardised training program would also be helpful to ensure consistency across services within the pathway” (P28)

“Consistent expectations, in practice (not in theory/the book), between OPD teams about what formulations need to contain” (P32)

By standardising the content of formulation training, staff may be able to build a stronger understanding of these commonly misunderstood aspects of OPDP formulation. As well as achieving the benefits discussed above (i.e., better meeting the needs of offenders and reducing resource wastage), this shared understanding would also be likely to improve staff communication and collaboration across teams, which in turn would contribute to one of the

main goals of the OPDP; to improve workforce development. Standardising the formulation training provided within the OPDP would therefore be likely to result in a number of significant benefits.

Psychological Content. This subtheme indicated that there is also a need for future training to include content relating to psychological models and theories and how to go about incorporating these into formulations:

“It would be useful to explore additional models” (P23)

“A general better understanding of the different psychological theories which could be used to help hypothesise a problem” (P26)

“It would be useful to receive some training around different theoretical models”
(P38)

“Use of different psychological models to formulate” (P47)

As reflected within the participant definitions of case formulation analysed earlier, one of the main purposes of formulation within the OPDP (as perceived by staff) is to develop a *psychological* understanding of the causes and development of each offender’s presenting problems. It is therefore unsurprising that OPDP staff would like to develop an improved understanding of the psychological theories and models that can be used to do this.

This finding partially supports the results of some of the studies discussed within Chapter 2 (i.e., Brown et al., 2018; Mapplebeck et al., 2017), which indicated that although OMs were able to successfully carry out the more *descriptive* aspects of formulation, they often had more trouble successfully implementing the *psychological* aspects. Together, these findings therefore suggest that any future OPDP formulation training should include a larger focus on the psychological aspects of formulation to ensure that staff are equipped with the skills necessary to formulate complex cases in practice.

6.3.4.5 4. Providing Staff Support

The final theme extracted from these participant responses highlighted a need for further support to be provided to less-experienced staff during formulation training. Without this support, participants emphasised that some staff members may develop negative feelings towards formulation training and therefore towards case formulation in general:

“I have found that the language we use (even just the term formulation) seems to create anxiety” (P6)

“It can feel intimidating for people when it’s new to them” (P16)

This is concerning, as it suggests that without providing the necessary support, some staff members may be unlikely to attend the training they require. More positively however, participants had a number of suggestions for how these types of issues could be reduced, and how support and assistance could best be provided to these staff members:

“Finding ways to manage this anxiety and helping to increase staff confidence” (P6)

“Methods that allow for all preferences in terms of learning” (P10)

“Drawing on attendees existing strengths in case formulation (even where they might not be aware that they have these!)” (P15)

“Ensuring the language/terminology is accessible to staff of all disciplines” (P31)

These responses indicate that for formulation training to be maximally effective and engaging, it needs to be sensitive to the individual needs of staff. For instance, OMs are typically unlikely to have received much (if any) psychologically-focused training in the past and so may be apprehensive about this type of training. By making staff feel comfortable and supported however, it is likely that they will feel more capable of developing the high-level skills needed to successfully write formulations within the OPDP. Therefore, identifying the

needs of staff and supporting them both before and during this training process is an essential step that should be given priority in the future.

6.3.4.6 Summary and Conclusion of Suggestions for Formulation Training Improvement

This inductive thematic analysis has highlighted a number of different ways in which staff believe OPDP case formulation training can be made more useful and effective in the future. The first is that (as echoed by the multiple-choice responses), much more training should be made available to OPDP staff. This suggestion was made both by participants who had and who had not previously completed training, confirming that more training would be helpful for all.

Secondly, this analysis revealed a number of suggestions for how the content of OPDP case formulation training and the methods used within it could be further improved. Specifically, staff felt strongly that training should be more interactive, should better explain the differences between the various levels and types of OPDP formulations, and should include more psychological content. In addition, participants emphasised that the individual needs of staff should be more fully considered to ensure that future training is accessible for all.

Overall, these findings suggest that with the implementation of some relatively small changes, staff are likely to feel much more satisfied with the quantity and quality of their formulation training. As previously described during the earlier analysis of multiple-choice responses, staff satisfaction in these areas was found to be linked with improved confidence and better formulation assessment results. Therefore, it is likely to be of great benefit for these staff suggestions to be considered when developing or delivering any future OPDP formulation training.

6.3.5 Staff Opinions on the Utility and Effectiveness of Case Formulation (Qualitative Data)

Finally, participants were asked to provide their opinions on whether case formulation is useful or effective. To recap, this question was asked in order to assess general perceptions of formulation, which could provide a measure of how receptive OPDP staff will be to any further formulation training developed. Secondly, this question was asked to facilitate an understanding of what OPDP staff believe the main outcomes of case formulation to be (i.e., if they believe formulation to be useful and effective, *what* is it most useful and effective at doing?). All 55 participants provided a response to this question. The length of these responses again greatly varied, from 2 to 149 words.

6.3.5.1 Method of Analysis

Following the same procedure as for the previous question, inductive thematic analysis was performed on this data. This was done by reading all participant responses thoroughly before meticulously ‘coding’ them by identifying all words, phrases and concepts relating to the question asked. Related codes were then grouped together to form larger themes which represented distinct patterns within the data. Five themes emerged from this process: ‘Improving Understanding’, ‘Facilitating Progress’, ‘Improving Relationships’, ‘Main Offender Outcomes’ and ‘Barriers to Usefulness and Effectiveness’. These themes will be explored in turn.

6.3.5.2 1. Improving Understanding

This theme ran strongly throughout the dataset and represented many instances of staff reporting that they find case formulation to be useful and effective in at least one way; improving understanding. Staff commonly mentioned that case formulation was useful and

effective both in improving staff understanding *and* offender understanding in a number of different ways. In light of this, the ‘Improving Understanding’ theme was broken down into two smaller subthemes to better facilitate analysis:

Staff Understanding. Encouragingly, many participants stated that they found case formulation particularly useful for improving their own or other staff member’s understanding of each offenders’ presenting problems:

“I regularly use it with probation staff to help make sense of offenders' difficulties and feel it can help improve staff understanding” (P6)

“It helps to make sense of behaviours that can otherwise seem confusing” (P33)

“The most useful way of understanding a person's actions” (P37)

This is a positive finding, as building an understanding of an offender’s presenting problems is typically one of the main aims of formulation within the OPDP. This finding therefore suggests that OPDP formulations are meeting this aim well.

In addition to better understanding the ‘presenting problems’ of each offender, participants also indicated that case formulation often allowed them to develop a deeper understanding of each offender as a person.

“It gives a space to understand clients at much deeper level” (P3)

“Makes sense of the person as a whole” (P32)

“Formulation goes beyond the person's problems and puts them in the context of the person him or herself” (P49)

By facilitating this deeper understanding, some participants indicated that case formulation often enables the development of more staff empathy and compassion towards offenders:

“I feel it can help increase staff understanding and empathy towards the service user” (P6)

“It supports a more thoughtful and compassionate approach” (P32)

“It helps improve understanding of clients, increases empathy and results in more positive and compassionate approaches to working with clients” (P47)

These findings are very positive overall, suggesting that case formulation is useful and helpful for staff in a number of different ways (i.e., improving understanding of offenders, developing empathy towards offenders). This finding echoes the conclusions of a number of the studies discussed within Chapter 2 (Knauer et al., 2017; McMullan et al., 2014; Ramsden et al., 2014; Whitton et al., 2016), which identified that forensic case consultation could improve a range of different self-reported staff outcomes such as understanding, empathy, insight and awareness towards offenders.

Although it is not known whether increases in staff understanding and empathy towards offenders can lead to other positive improvements within the OPDP, this may be a possibility. For instance, Shaw et al. (2017; discussed within Chapter 2) found that OMs who completed formulations *collaboratively* with offenders later reported having significantly higher-quality relationships with these offenders than OMs in a non-collaborative condition. Although it was not specifically investigated within the Shaw et al. study, it is possible that increases in staff understanding and empathy towards offenders (resulting from constructing formulations collaboratively with them) is what facilitated these improvements in staff-offender relationships.

Offender Understanding. Participants also commonly reported that case formulation is useful and effective in providing *offenders* with a better understanding of their own presenting problems:

“It helps the service user to spend time thinking about some of their behaviours and start to understand themselves a little more” (P14)

“It helps the individual have a greater understanding of their own behaviour” (P30)

“I think that this can often help individuals to better understand themselves, their behaviour and the problems that they are experiencing” (P42)

“For an offender it can be a lightbulb moment that helps them think about how they have arrived in a certain situation” (P51)

Providing offenders with this type of insight is likely to be a valuable function of case formulation within the OPDP, as it presents an opportunity for these offenders to identify maladaptive patterns in their thinking and behaviour which may then enable them to make steps towards positive change. This supports the idea that formulation should be completed collaboratively with offenders wherever possible so that they can also reap the benefits of this process.

6.3.5.3 2. Improving Relationships

A second way in which staff indicated that case formulation is useful and effective within the OPDP is by improving staff-offender relationships.

“Helps the therapeutic relationship” (P3)

“I believe it can improve relationships” (P6)

“It can be helpful in developing a more therapeutic relationship” (P21)

“Encourages them to forge relationships with their clients” (P51)

This finding is encouraging, as it suggests that (as discussed earlier) improvements in staff understanding and empathy towards offenders as facilitated by the formulation may indeed

lead to other positive impacts such as improvements in staff-offender relationships.

Previous research investigating the effectiveness of *clinical* therapy has shown that clinician-client relationship factors are the strongest controllable predictors of successful therapy outcomes (Asay & Lambert, 1999). In addition (and as previously described), Skeem et al. (2007) found in their U.S.-based study that strength of probation officer-offender relationships (as measured by the DRI-R) could predict recidivism over an average follow-up period of 16 months. The finding that collaborative formulation may improve OM-offender relationships within the OPDP is therefore very encouraging, and provides an indication of how the value of case formulation within the OPDP could be further improved in future.

In light of this, it would be valuable to investigate whether stronger OPDP staff-offender relationships (as facilitated by case formulation) may indeed be associated with more positive offender outcomes such as reduced reoffending risk or improved well-being. Although Shaw et al. (2017) found that OM *perceptions* of offender outcomes did not differ between conditions (even though OMs in the collaborative condition reported stronger staff-offender relationships), the findings discussed here suggest that this topic should be investigated further (e.g., investigating whether there is any link between the strength of staff-offender relationships and *objective* offender outcomes). This type of research is likely to produce a more comprehensive understanding of the utility and value of case formulation within the OPDP.

6.3.5.4 3. *Facilitating Progress*

The third theme identified within the participant responses to this question was that case formulation is useful and effective at facilitating and guiding further progress within each case. Three different ways of facilitating progress were identified, which will be discussed separately within smaller subthemes:

Identifying New Directions for Staff. Staff indicated that one of the main ways in which case formulation allowed them or other staff members to make progress within each case was by identifying new directions to take or new approaches to use when interacting with offenders:

“We often see OM's develop new perspectives of their case” (P8)

“It can really help someone to think outside of the box” (P10)

“Allows us to look at other perspectives” (P16)

These comments indicate that by providing a fresh perspective of each case, formulation often allows staff to move forward with previously ‘stuck’ or difficult cases. This may be an extremely useful function of formulation within the OPDP, as cases screened into the service are often the most complex.

Staff also indicated that by identifying new perspectives and approaches, case formulation often allowed them or other staff members to feel more confident and supported in the ways in which they were working with each offender:

“For the OM's who choose to engage in the pathway, there seems to be a genuine feeling of being supported and seeking help” (P8)

“The process assists OMs to gain confidence in working with OPD clients” (P35)

“It provides reassurance as to the approach you should use with an offender” (P38)

Overall, these findings suggest that case formulation within the OPDP is useful and effective at equipping staff with the knowledge, confidence and support needed to better manage and move forward with difficult cases. These results support those continually identified throughout the present thesis; that case formulation acts as a catalyst within the OPDP, first having smaller and more direct impacts (i.e., improving staff understanding and confidence in

working with offenders), which are then likely to start a chain reaction of larger impacts, potentially resulting in improved ‘ultimate’ outcomes such as reductions in reoffending.

Identifying New Directions for Offenders. As well as providing *staff* with new perspectives and approaches to take in each case, staff also indicated that formulation often allowed *offenders* to identify new and more effective ways of moving forward and making positive changes for themselves:

“The act of clarifying someone’s difficulties and the process helping them to feel listened to, understood and accepted is enough to allow them to move forward again” (P7)

“They feel less judged/labelled, and consequently more motivated/hopeful to address issues within treatment” (P30)

“Has helped them to move forward in a positive way” (P41)

These quotations suggest that by creating an opportunity for offenders to feel more understood and listened to, case formulation can support them to make positive progress for themselves. This is important, as it suggests that case formulation can help both staff *and* offenders to feel more confident and motivated, facilitating further progress in each case.

Basis for Intervention. Thirdly, a number of participants reported that case formulation within the OPDP is often effective at facilitating progress in each case by identifying suitable avenues for intervention and treatment:

“Can usefully change the direction in which a service-user is being managed and the type of intervention being offered” (P24)

“It is particularly useful when deciding which interventions might most effectively meet an individual’s needs” (P33)

“It can also help to focus and direct treatment more effectively” (P42)

As discussed within the earlier analysis of participant case formulation definitions, constructing a treatment/intervention plan for each offender was not typically perceived to be a primary aim of formulation within the OPDP. However, the above quotations suggest that in some cases, staff believe that treatment plans can be helpful. This might suggest that OPDP staff are generally open to the idea of formulations including more of a focus on offender treatment in future rather than simply offender management (which is typically their primary focus presently).

6.3.5.5 4. Main Offender Outcomes

A fourth ‘theme’ extracted from this data represented five participants who stated their opinions regarding the impact of formulation on ‘main’ or ‘ultimate’ offender outcomes such as reductions in reoffending. Although only a small number of participants commented on this issue, it was considered to be an important theme to analyse in order to provide some comparison to the findings of Völlm (2014), who identified that only 40% (12/30) of formulation experts could agree that offenders who receive a case formulation are more likely to achieve a positive outcome.

Three of the five participants who commented on this issue suggested that case formulation may indeed be capable of positively impacting main offender outcomes:

“Potentially reducing recall numbers and further offending” (P19)

“Positive outcome for service user” (P22)

“Has helped them to move forward in a positive way with regards to their risk reduction” (P41)

However, although these comments suggest that some OPDP staff believe that case formulation *can* be effective and useful in this sense, the brevity and sparsity of these comments indicate that it is not likely to be a majority opinion. This finding may be explained by the earlier discussed theory that formulation is likely to be the first ‘step’ in a much longer process, creating initial positive change which then leads to a series of further impacts and outcomes. Therefore, it is likely that staff are currently unclear about its possible impact on main offender outcomes.

Supporting this notion, the other two participants who commented on this issue were more sceptical of any link between formulation and main offender outcomes, referring to the lack of available evidence to support this idea:

“I am aware there is limited evidence supporting the use of formulations on treatment outcomes” (P13)

“It remains to be seen through evaluation studies what the behavioural impact of the approach is” (P23)

The uncertainty demonstrated by these participants is similar to that found within the study conducted by Völlm (2014). These findings together therefore once again highlight the importance of examining the link (if any) between formulation and main offender outcomes. Re-launching the study described within Chapter 4 (Study 2, p. 153) would be valuable in this sense.

6.3.5.6 5. Barriers to Usefulness and Effectiveness

The last theme that emerged from this data reflected the opinion of many participants who indicated that case formulation *can* be useful and effective, but only in specific circumstances or if particular caveats have been met:

“If it is used and updated regularly” (P9)

“I really think the usefulness or effectiveness of the case formulation depends on its quality” (P26)

“I think case formulations are extremely helpful if they are led by what the OMs need” (P44)

“I find case formulations which have been developed only from case records and consultation with the Offender Manager as having very limited use . . . I find formulations which have been developed with the service user over a number of sessions as very useful.” (P55)

These quotations suggest that staff members working within the OPDP have varying ideas about the circumstances under which case formulation can be useful or effective. This may be due to differing experiences, or because it is not yet known which formulations are objectively likely to be most useful or effective (as no validated measure of formulation quality yet exists). This finding therefore suggests that future research should aim to clarify both *if* and *when* (i.e., under which circumstances) case formulation is likely to have a positive impact within the OPDP.

6.3.5.7 Summary and Conclusion of Staff Opinions on the Utility and Effectiveness of Case Formulation

Overall, the responses of all 55 participants indicated that they believe case formulation to be useful or effective in at least one way (i.e., in improving understanding, facilitating progress and/or strengthening staff-offender relationships). This is a very positive result, as it indicates firstly that formulation does have at least some positive impact within the OPDP, and secondly that OPDP staff would be likely to engage with any new formulation training developed (i.e., on the basis of the current research or otherwise), as they do tend to view case formulation in a positive light overall.

However, as discussed, participants were divided in their opinions of whether or not case formulation can contribute to positive main offender outcomes such as reductions in reoffending. This supports the research of Völlm (2014), in which formulation experts cited the lack of available evidence as the main reason for why they could not agree whether offenders who receive case formulations would have more positive outcomes. These findings together strongly suggest that until further rigorous study is conducted to measure the potential impact of case formulation on these larger outcomes, it is likely to remain a hotly debated topic within the formulation field.

The last theme extracted from this dataset revealed that many participants believe that the usefulness and effectiveness of a formulation is dependent on a number of different factors (such as whether it is of high quality, whether it has been constructed collaboratively with the offender, and/or whether it has been updated over time). In fact, 25% of the participants surveyed mentioned that the effectiveness or usefulness of a formulation is likely to depend on one or more of these factors. This highlights that OPDP staff do not believe that all formulations have the same impact, suggesting that it is of importance to continue to explore which formulations have the most positive impact and why.

6.4 Study 4 General Discussion and Conclusion

The present survey has produced a number of useful and interesting findings. Firstly, the comparison of participant and academic definitions highlighted that even though case formulation is performed slightly differently within the OPDP as compared to formulation within other settings (e.g., clinical settings), there does seem to be a good foundation of shared understanding of case formulation across domains. This suggests that OPDP staff do have a good general understanding and knowledge of what case formulation is and what content it should include, regardless of their job role within the service. This is a positive

finding, as it indicates that although (for instance) OMs do not typically have the same level of psychological training and knowledge as psychologists, they have been able to develop a good understanding of case formulation regardless.

However, one negative implication resulting from the analysis of case formulation definitions is that although these participants were often aware that case formulation should be used to develop a *psychological* understanding of an offender's presenting problems (as stated within many of their definitions), many also indicated within their suggestions for training improvement that any future case formulation training should include much *more* psychological content. This suggests that although OPDP staff are generally aware of what a formulation *should* include, some do not feel adequately equipped to put this into practice. Future case formulation training should therefore aim to incorporate more information about different psychological theories/models, and how and when to apply these appropriately in each case. In line with the additional finding that some staff are likely to require extra support during formulation training, this change should be first discussed with OPDP staff to determine how best to incorporate this type of content. The benefits of co-design have also been shown to include higher user satisfaction and a better fit between the needs of the user and the service provided (Steen et al., 2011).

As previously discussed, a second interesting finding resulting from the analysis of participant case formulation definitions is that they did not commonly include the words 'treatment' or 'management'. The absence of the word 'treatment' is more understandable, as creating a *treatment* plan for each offender is not typically a primary aim of formulation within the OPDP. However, one of the main purposes of formulation within the OPDP *is* typically to create a tailored *management* plan for each offender, which can be implemented by the OM to facilitate progress within each case. The absence of the word 'management' within these definitions is therefore noteworthy, potentially suggesting that OPDP staff do

not believe the creation of a management plan to be a defining aspect of OPDP formulation.

Further clouding this issue, some participants later indicated within their responses regarding the usefulness and effectiveness of formulation within the OPDP that *treatment* recommendations are actually often a useful and effective way to facilitate progress in each case. This suggests that staff may be open to more treatment recommendations being made within OPDP formulations alongside management recommendations. Although participants did not frequently use the word ‘treatment’ within their definitions of case formulation, this is likely to be because OPDP formulations do not often include this type of content and so it is not a prominent feature that staff would define it by. To confirm these hypotheses, it would be useful for further research to explore staff views on the utility of both treatment and management recommendations, and to better understand what staff believe the main purposes of OPDP formulation to be.

In terms of the responses to multiple-choice questions, participants who had received most formulation training were also those most likely to report feeling ‘Very Confident’ in their formulation skills and to have received ‘Excellent’ feedback during their last case formulation assessment. This suggests that simply improving the quantity of case formulation training delivered to staff may have significant benefits. A second noteworthy finding resulting from the multiple-choice responses was that although over half of the participants (55%) reported having previously provided case formulation training to others, only 33% of these participants reported feeling ‘Very Confident’ in their own case formulation skills, and only 23% (n = 7) of these participants reported having received ‘Excellent’ feedback during the last assessment of their case formulation skills (7% had never been assessed). This indicates that future research should concentrate on investigating *who* provides case formulation training to others (and how they feel about this), and *when* they are deemed capable of providing this training.

Thirdly, it is interesting to note that participant responses to the multiple-choice questions did not often differ depending on job role as might have been expected. For instance, 64% of the OMs taking part in the study reported being responsible for completing moderately complex levels of formulation, and only 35% of the psychologists reported feeling ‘Very Confident’ in their formulation skills. These findings suggest that a number of common beliefs regarding formulation ability (i.e., that OMs may not possess the skills required to write complex levels of formulation or that psychologists have superior case formulation skills in comparison to others) may be incorrect. These findings also emphasise the importance of providing case formulation training to *all* OPDP staff, rather than simply assuming, for example, that OMs do not require as much psychological knowledge as psychologists, or that psychologists do not need regular training to update and develop their formulation skills. On the contrary, it is argued that “in order to fulfil their professional requirements, healthcare professionals need to adopt a practice of life-long learning” (Guillemin et al., 2009, p. 197). This learning is required so that professionals can keep up to date with new developments in the field, and can continue to build the essential skills and knowledge necessary to remain maximally effective in their roles.

All 55 participants reported that they *did* consider case formulation to be useful and effective in at least one way (including improving staff understanding and empathy, improving staff-offender relationships, identifying new avenues to facilitate progress, and (potentially) improving main offender outcomes). As previously suggested, it is important for future research to determine *if* and *how* formulation is indeed able to influence these outcomes, and how these outcomes may be interlinked with each other (i.e., cause-effect-cause patterns, Yin, 2018). Once this type of research is conducted, it is likely that a much fuller understanding of the value of formulation within the OPDP will be achieved.

6.4.1 Study Limitations

Although a relatively small number of participants took part in this survey (N = 55), those who took part worked within a range of different OPDP teams across the UK, held a range of different job roles, and had a variety of different case formulation training experiences. This suggests that the opinions expressed by these participants are likely to be representative of the views of OPDP staff more generally. However, it is recognised that a sample of 55 participants is only a small proportion of the OPDP workforce, and so the conclusions made on the basis of this study should be regarded with that in mind.

Secondly, although the survey did allow for a wide range of both quantitative and qualitative data to be collected, face to face interviews may have resulted in richer data. For example, staff could have been prompted to elaborate on their answers to certain questions to reduce the number of outstanding questions remaining (e.g., in relation to the utility of treatment and management recommendations). However, a survey method was selected primarily to facilitate one of the main aims of the study, which was to identify survey participants who had authored one or more of the OPDP formulations analysed within Study 1a. The purpose of linking this data together was to understand how the quantity and quality of formulation training received by staff members may impact the quality of formulations they are able to produce. A survey method was therefore used to better facilitate this prospective quantitative analysis.

Unfortunately, this part of the study could not be successfully completed as only two of the 12 psychologists who authored one or more of the formulations analysed within Study 1a are known to have taken part in the current survey. There are a number of potential reasons for this, including that six of the psychologists who *did* take part in the current survey chose not to disclose their name, meaning that it was not possible to identify whether they had authored one of the formulations examined within Study 1a or not. In addition, one of the

formulation authors had left the OPDP and another had taken extended leave from the service by the time the current survey was distributed.

Although this aim could not be met, the results and conclusions obtained from the survey data itself were not detrimentally impacted. The majority of participants provided rich responses to the questions asked, allowing for the other aims of the study to be successfully met (i.e., to investigate the adequacy of formulation training provided within the OPDP, to investigate if and how the formulation skills of psychologists are updated over time, to gain staff perspectives of how formulation training could be further improved in future). The findings of this research could therefore usefully shape any future case formulation training developed for use within the OPDP (based on the findings of research within the present thesis or otherwise), ensuring it is of the highest possible quality and best meets the needs of staff.

Chapter 7: Overall Discussion and Conclusion of Thesis

7.1 Summation of Key Findings

7.1.1 Chapter 2: Integrative Literature Review

The aim of Chapter 2 was to gather and synthesise all primary research conducted on the topic of forensic case formulation since Hart et al. (2011) drew attention to the lack of knowledge within this field and constructed an agenda of recommended future research.

The results of the integrative review performed within Chapter 2 emphasised that although some further research has been conducted since 2011, much of this has focused on a limited number of similar issues, such as understanding the impact of consultation and formulation on staff outcomes and measuring the effect of formulation training on the quality of formulations produced by offender managers (OMs).

The conclusion of this integrative review highlighted that future research must answer more varied questions to ensure the development of further knowledge in critical areas of the forensic case formulation field. Specifically, this included developing an empirical understanding of the necessary components of a high-quality forensic case formulation, and understanding the impact of consultation and formulation on offender outcomes.

7.1.2 Chapter 3: Study 1a and Study 1b

The aim of Chapter 3 was to address one of the recommendations for future research generated from the integrative review performed in Chapter 2; to develop an empirical understanding of the necessary components of a high-quality forensic case formulation. Within Study 1a, 48 OPDP formulations were first extracted and coded using the Case Formulation Quality Checklist-Revised (McMurrin & Bruford, 2016), the Case and Risk

Formulation Self-Auditing Tool (Audit Tool, NOMS & NHS, 2015b), and a coding framework developed by the researcher. Using the CFQC-R and Audit Tool, these 48 extracted formulations were found to be of generally intermediate quality as rated by the researcher. Specifically, although these formulations tended to be organised, focused and coherent, they often lacked information about protective factors, did not often make predictions regarding which strategies may be most effective at reducing risk of harm, and tended to be overly descriptive in nature rather than explanatory. In addition, over half (52%) of these formulations were found not to fit the criteria of the level they were intended to be.

Multiple logistic regression was then performed to investigate whether any particular formulation features or scores on quality tool items could significantly contribute to the prediction of offender outcomes (defined as ‘Move On’ or ‘Breach’ from approved premises (AP)). Results of this analysis indicated that in addition to two offender characteristics (‘Number of Treatments Completed’ and ‘Prior AP Breach’), one formulation-related variable was able to make a significant contribution to the prediction of AP outcomes (Audit Tool Standard 3: “The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour”). Higher scores on this Audit Tool standard were found to be associated with more positive AP outcomes.

A small supplementary study (Study 1b) was conducted to enrich the results of Study 1a by implementing an alternative method of variable selection (clinical observation). The main aim of this study was to ensure that all potentially important formulation-related variables were retained for quasi-experimental investigation within Study 2. Within Study 1b, a range of OPDP staff were asked to use their expertise and experience in the field to rate a range of formulation features according to how strongly they believed each of them to be associated with offender outcomes. The use of this method resulted in one additional formulation feature being retained for quasi-experimental investigation within Study 2 (Audit

Tool Standard 4b: “The formulation provides a balanced view about areas of vulnerability *and* areas of strength, including protective factors”).

7.1.3 Chapter 4: Study 2 (Halted Study)

The main aim of Study 4 was to build upon the results of Study 1a and Study 1b to explore the *mechanism* by which Audit Tool Standard 3 and Audit Tool Standard 4b may be capable of influencing offender outcomes. To meet this aim, a quasi-experimental study involving the active participation of both OPDP psychologists and offender managers (OMs) was launched. However, this study had to be halted in its infancy due to the outbreak of COVID-19. The small amount of data collected before the termination of the study was used to form a pilot study with the aim of informing a potential re-launch of the full study in future.

Although formulations could not be allocated into conditions on the basis of their scores on Audit Tool Standard 3 and Audit Tool Standard 4b as planned and ‘final’ offender outcomes were never obtained from HMPPS due to the termination of the study, meaningful data were still collected in the form of intermediate outcomes recorded by OMs via online surveys. All participating OMs reported that the written formulation they had received after attending a consultation meeting had been able to further improve their understanding of the case in question in at least one way, suggesting that formulation can provide value over and above consultation alone. However, the majority of these OMs also reported that they did not completely understand the formulation they had received. This suggests that formulation could have further positive impacts if it were understood more fully.

The first OM recruited into this study was able to complete their participation in full, providing a helpful and detailed account of how formulation can be utilised within the OPDP and how it may have the potential to positively impact both intermediate and final case

outcomes. For instance, this OM described how the written formulation had actively aided them in understanding the offender's behaviour, allowing them to advocate for this offender during wider case discussions with other agencies. However, in other instances the formulation was possibly prevented from having further positive impacts, such as when two of the recommendations made within it proved un-actionable despite the OMs best efforts. This indicated a need for deeper investigation into the recommendations made within each OPDP formulation; for example, whether these recommendations are typically relevant and feasible, how often they are carried out, and whether they are able to have a positive impact on outcomes.

7.1.4 Chapter 5: Study 3 (Multiple Case Study)

In line with one of the findings from Study 2, the main aim of Study 3 was to examine the relevance, feasibility, utility, and impact of the recommendations made within OPDP formulations. To meet these aims, a two-tailed explanatory multiple-case study was performed. A total of 10 cases were examined: five with positive outcomes and five with negative outcomes. Cross-case analysis revealed that more 'highly relevant' and 'highly actionable' formulation recommendations were made in cases with positive outcomes than cases with negative outcomes. Formulation recommendations made in cases with positive outcomes also contained much more proactive language (e.g., OM should *make* referral) than cases with negative outcomes (e.g., OM should *consider* making referral).

A clear pattern of differences was again identified when examining how recommendations were utilised in each case. In cases with positive outcomes, the majority of recommendations rated as highly relevant and feasible were fully completed, and in instances where barriers were faced, these were often overcome with the use of alternative methods. In cases with negative outcomes however, recommendations rated as highly relevant and

feasible were much less likely to be fully completed even in the absence of any identifiable barriers.

In terms of the *impact* of formulation recommendations, stark differences were again identified. In cases with positive outcomes, a number of instances were identified in which completed recommendations could be seen to have likely contributed to the positive outcome of the case. Typically, this was achieved by first improving intermediate outcomes such as offender engagement and/or compliance before then harnessing these initial positive changes to create larger and more meaningful impacts (i.e., taking advantage of increases in offender engagement to complete more offence-focused work). In contrast, it was found that although recommendations completed in cases with negative outcomes often *did* have initial positive impacts, a lack of further follow-up meant that these impacts eventually diminished over time and could not positively contribute to the outcome of the case. This finding therefore suggests that it is not enough for formulation recommendations to be relevant, feasible and actioned, but that the initial outcomes of these actions must also be closely monitored and developed to create further meaningful change.

On the basis of these findings, a provisional logic model was developed to operationalise the process by which formulation recommendations can contribute to positive outcomes. This logic model also specifies where and why this process was commonly interrupted in cases with negative outcomes, negating the intended impact of recommendations made.

7.1.5 Chapter 6: Study 4 (Staff Training)

The main aim of Study 4 was to explore the knowledge, opinions, and experiences of OPDP staff in relation to writing case formulations and of receiving case formulation training. It was expected that the results of this study would provide useful guidance to

inform the development of further case formulation training within the OPDP (i.e., training based on the findings of the present thesis or other research). To fulfil this aim, a range of OPDP staff who write case formulations as part of their duties were asked to complete an online survey. In total, 55 OPDP staff took part in this survey.

Participants were first asked to define formulation in their own words. A comparison of participant versus academic⁹² definitions of case formulation revealed that there is a good level of shared understanding across professional and academic domains in terms of what a formulation is and what it should include. This examination of definitions also confirmed that staff working within the OPDP have a good general understanding of formulation regardless of their level of psychological training and experience.

Participant responses to multiple-choice questions however highlighted that there is currently no standardised amount, frequency or source of formulation training provided to OPDP staff. Possibly reflecting this, only one fifth of the participants surveyed reported that they were 'Very Satisfied' with both the quantity and quality of formulation training they had received, and only one fifth reported feeling 'Very Confident' in their case formulation skills. In addition, although there is a common perception that psychologists are 'experts' in formulation, responses to these multiple-choice questions also indicated that the majority of psychologists surveyed did not feel 'Very Confident' in their formulation skills or 'Very Satisfied' with the training they had received. Making improvements to the formulation training provided to OPDP staff is likely to be worthwhile, as those participants who reported having received the most hours of formulation training were also found to be those most confident in their formulation skills and those most likely to have received 'excellent' feedback during their last formulation assessment.

When asked *how* formulation training could best be improved in future, the main

⁹² Retrieved from the literature on forensic case formulation.

suggestion given was simply that there should be *far more of it*. In addition, staff felt that formulation training should be more interactive, should better explain the differences between levels and types of OPDP formulations, and should include more psychological content. Participants also emphasised the importance of taking individual staff needs into account during the development of any future formulation training to ensure it is accessible to all.

Finally, when asked, *all* participants indicated that they believed case formulation to be useful or effective in at least one way (i.e., in improving staff and/or offender understanding, facilitating progress and/or strengthening staff-offender relationships). This suggests that OPDP staff have a generally positive opinion of case formulation and would therefore be likely to engage well with any new formulation training developed (i.e., on the basis of the current research or otherwise). Many participants stated that the usefulness and effectiveness of a formulation is however dependent on a number of factors, such as whether it is of 'high quality', whether it has been constructed collaboratively with the offender, and/or whether it is regularly updated over time as new information becomes available. Only a few participants commented on the ability of formulation to impact main offender outcomes such as reoffending risk, with no clear consensus reached on this topic.

7.2 Evaluation of Thesis Aims

As described within the introduction to this thesis, the primary aim of the research conducted here was to examine the quality, utility, and value of case formulation within the OPDP. The body of research presented in this thesis has increased understanding of these issues, providing a strong foundation on which to base further study. Key knowledge gained in each of these areas will be explored in further detail below.

7.2.1 Formulation Quality

The OPDP formulations examined within Study 1a were found to be of generally intermediate quality when rated by the researcher using the Case and Risk Formulation Self-Auditing Tool (Audit Tool, NOMS & NHS, 2015b) and 8 items of the CFQC-R (McMurrin & Bruford, 2016). This finding reflects that of Hopton et al. (2018), who identified that 121 risk formulations produced by psychologists within forensic inpatient hospitals were generally of poor to intermediate quality when assessed using the CFQC-R. Although neither the CFQC-R and Audit Tool have been fully validated, the items included within these tools *do* represent our current best understanding of what a forensic case formulation should include to be considered ‘high-quality’. Therefore, the finding that many OPDP formulations do *not* score highly on these tools suggests that some improvements may need to be made in this regard.

As identified within Study 4 (staff training), 11 out of 55 (20%) participating OPDP staff members reported that they ‘Never’ use any type of quality tool to assist them when writing formulations, and a further 21 (38%) stated that they only use these quality tools ‘Occasionally’. Motivating OPDP staff to use these tools more frequently may therefore be a relatively simple way of improving formulation quality as we currently understand it. The poor usage of formulation quality tools within the OPDP might be explained in part by the findings of Völlm (2014), who aimed to gain expert consensus on a number of issues relating to case formulation for personality disordered offenders. Within this study, Völlm found that only *one* of 31 participating formulation experts ‘Strongly Agreed’ that “the quality of formulation for personality disordered offenders can be reliably measured”. In response to this question, some of the experts also provided qualitative comments explaining that there is not yet a validated measure of case formulation quality available. OPDP staff may be aware of this uncertainty around the validity and utility of currently existing quality tools, meaning

that they may not always be inclined to use these within practice. This therefore suggests that it is important for research to continue to explore the validity of currently available formulation quality tools (and to construct new ones if necessary) in order to encourage OPDP staff to use these more frequently.

Study 1a and Study 1b were conducted with the intention of beginning to address these research needs. The combined findings of these two studies indicated that two of the standards included within the Audit Tool (NOMS & NHS, 2015b) may predict offender outcomes (move on or breach from approved premises, (AP)). This finding provides some support for the validity of the Audit Tool. However, no evidence was found to suggest that formulation scores on any of the remaining Audit Tool standards (or total Audit Tool score) could significantly contribute to the prediction of these AP outcomes. In addition, no evidence was found to suggest that formulation scores on any of the eight CFQC-R items examined (nor the total score of these eight CFQC-R items) could significantly contribute to the prediction of these AP outcomes. However, this does *not* necessarily indicate that these remaining quality tool items are not valid (i.e., that they do not measure formulation quality). To continue to explore this issue, further research should be conducted to investigate the validity of the CFQC-R as a whole (i.e., all 10 items), and should seek to understand whether scores on the CFQC-R or Audit Tool can contribute to the prediction of *intermediate* outcomes (e.g., OM understanding of offender, offender motivation to cease offending), which are likely to moderate any relationship between case formulation and ‘main’ offender outcomes such as reductions in recidivism. Study 2 (described within Chapter 4) would have likely provided answers to some of these important questions had it not been halted. Therefore, the re-launch of this study should be facilitated when possible.

7.2.2 Formulation Utility and Overall Value

Many of the findings of this thesis have provided support for the utility and overall value of case formulation within the OPDP. For example, qualitative data collected before the termination of Study 2 (used to form a pilot study) consistently indicated that case formulation could improve OM case understanding to a level over and above that gained from attending case consultation alone. Furthermore, the OM who fully completed their participation in Study 2 before it was halted reported that the case formulation had greatly influenced their management of the offender in question, and had provided a great deal of value over and above case consultation alone. These findings are inconsistent with research conducted by Knauer et al. (2017), in which staff reported significant improvements in their knowledge of the offender, confidence in working with the offender, motivation to work with the offender, understanding of the offender's problem behaviour, and satisfaction with management plans after attending a consultation meeting, but reported no further significant improvement in these areas after receiving a written case formulation summarising the content of this meeting. However, as acknowledged by Knauer et al., the analysis of post-formulation ratings was likely underpowered due to a large amount of attrition occurring between the consultation and formulation assessments. This suggests that further research must be conducted in this area to understand the utility and value of written case formulation over and above case consultation alone. Again, this topic was to be investigated further within Study 2, with OMs being asked to report a range of intermediate outcomes (i.e., understanding of the case, confidence in managing the offender, perceptions of offender compliance) at multiple time points, both before *and* after the case formulation was written. This therefore provides further justification for the re-launch of this study.

Investigation of the recommendations made within OPDP formulations (Study 3) indicated that when the right caveats are met (i.e., relevance, feasibility, utility), it may be

possible for formulation recommendations to have important and positive impacts on outcomes. As demonstrated, the *direct* impacts of actioning these recommendations are likely to be small (i.e., improved offender compliance), but resulting cause-effect-cause patterns (Yin 2018) stemming from these initial impacts are likely to eventually result in larger benefits, such as positive 1-year case outcomes. To explore this finding in more detail, the logic model developed within Study 3 should be validated with (possibly experimental) further study. Once this has been achieved, it would be useful for all staff responsible for writing formulations within the OPDP to be provided with training on how to develop formulation recommendations which are high in relevance, feasibility, and utility. It would also be valuable for OMs to be provided with training on commonly faced barriers to action, and useful methods of overcoming these barriers. The implementation of these suggestions is likely to enhance the overall impact and value of case formulation within the OPDP.

Finally, the responses provided by staff to some of the qualitative survey questions within Study 4 (staff training) also provided an insight into the utility and value of formulation within the OPDP. All participating staff agreed that formulation *is* useful or effective in at least one way, including improving staff understanding of each case, improving offender understanding of their own behaviour, improving staff-offender relationships, and/or facilitating further progress in ‘stuck’ cases. Again, improvements in intermediate outcomes may have the potential to positively contribute to ‘main’ case outcomes such as reductions in reoffending risk. In support of this point, Skeem et al. (2007) found within their U.S.-based study that improvements in probation officer-offender relationships could predict recidivism over an average follow-up period of 16 months. This therefore suggests that it is possible for formulation within the OPDP to have further utility beyond its initial impacts. To explore this topic further, it is recommended that Study 2 (or a similar study) be re-launched in future to develop an empirical understanding of how these

intermediate formulation outcomes might interlink with each other (i.e., cause-effect-cause patterns, Yin, 2018), and how they may each (or in tandem) contribute to main case outcomes. Research such as this is likely to provide a more complete understanding of the overall utility and value of case formulation within the OPDP.

7.2.3 Conclusion Regarding Thesis Aims

Overall, the studies presented here (Studies 1a through 4) have been successful in meeting the main aim of the thesis, providing a good initial overview of the current quality, utility, and value of case formulation performed within the OPDP. Potential opportunities for further enhancing the value of OPDP formulations have been identified, further increasing the utility of this thesis. Although the findings obtained and the conclusions made within this thesis are tentative, this research has provided a solid foundation on which to base further research into the areas explored.

7.3 Strengths of the Thesis

The primary strength of this thesis is that it has focused on an important yet under-researched topic. Since very little was known about the quality, utility, or overall value of forensic case formulation performed within the OPDP prior to the commencement of this research, the findings presented here have added to our knowledge significantly. For instance, the research presented here has begun to explore the validity of commonly used forensic case formulation quality tools, has investigated how the recommendations made within OPDP formulations may impact offender outcomes, and has gained an insight into the benefits of formulation as perceived by OPDP staff. Positively, the findings of these studies have indicated that formulation *does* provide utility and value within the OPDP in a number of different ways.

A second strength of the research presented here is that it has aimed to answer a range

of research questions with the use of a variety of different methods (i.e., cross-sectional exploratory analysis, quasi-experimental research, multiple-case study, online survey). This decision was made to ensure that the research conducted was ‘question led’, with methods being selected to enable this research to progress, rather than the question being shaped by the methodological/analytical preferences of the researcher or on the basis of data which is available or easily collected. This is an improvement over previous research on the topic of forensic case formulation (discussed within Chapter 2), which has tended to be rather homogeneous in terms of the research questions asked and the methods used to address these questions. By expanding upon this prior research within the present thesis, richer and more diverse findings have been obtained.

A third strength of the thesis is that it has combined quantitative and qualitative data to provide an overall picture of the utility and value of conducting formulation within the OPDP. By using quantitative methods such as logistic regression within Study 1a (and the quasi-experimental method planned within Study 2), it was/would have been possible to empirically explore the impact of formulation on a variety of outcomes within the OPDP. However, the results of these studies were greatly enriched by the qualitative findings obtained within Studies 2, 3, and 4, as many of these findings were based upon the input of a range of OPDP staff, including OMs and psychologists. The use of these qualitative approaches has added a great deal of value; for example, by providing a way of analysing outcomes that are more difficult to measure empirically (such as OM confidence or changes in offender motivation). By using both quantitative and qualitative methods, the utility and value of performing case formulation within the OPDP has been explored both from an empirical perspective and from a more human-centred perspective.

7.4 Limitations of the Thesis

The main limitation of this thesis is that due to the outbreak of COVID-19 in early 2020, the scope of some of the research presented here was restricted. This setback was particularly impactful on Study 2, as the original aim of the study (i.e., to understand the mechanism by which Audit Tool Standard 3 and/or Audit Tool Standard 4b may impact case outcomes) could not be met. To retain some of the value of this study however, the original research plan was presented in full, and the small amount of data collected prior to the outbreak of COVID-19 was used to form a pilot study (described within Chapter 4). As this pilot study revealed some valuable initial insights regarding the impact and value of case formulation within the OPDP, it is hoped that the value of re-launching the full study in future has been evidenced.

A second limitation of this thesis is that many of the findings obtained within it were based on relatively small sample sizes. This impacted the analysis of Study 1a in particular, as sparse data caused issues with model convergence, which had to be remedied using a variety of methods. Although the sample size of formulations analysed within Study 1a was small for relatively defensible reasons (i.e., all accessible formulations fitting the inclusion criteria of the study were analysed), this small sample size may have made it more difficult to detect meaningful relationships between CFQC-R scores/Audit Tool Scores/Formulation Features and offender (approved premises) outcomes. Larger-scale studies (perhaps conducted on a national level) should therefore be conducted in future to further validate the findings obtained.

Furthermore, the findings of Study 4 (staff training) may also have been somewhat limited by a relatively small sample size. This is because although the survey link was distributed via official channels, only 55 staff responded in total, which represents only a small percentage of the full OPDP workforce. Moving forward, it would be beneficial to

officially identify how many staff within the OPDP currently write formulations as part of their role (to better understand the generalisability of these results), and also to explore how to better engage OPDP staff in future case formulation research in order to ensure that the full spectrum of staff opinions and experiences are represented.

A third limitation is that (partially due to COVID-19 limiting the scope of some studies) the majority of the findings presented within this thesis were based on self-reported data provided or recorded by OPDP staff. This includes the survey data collected within Study 2 (pilot study), survey data collected within Study 4 (staff training), and also the case study evidence collected in Study 3 which was based on case records typically written by OPDP staff (although this constituted the official record of each case). Although this self-reported data is likely to provide an accurate depiction of how case formulation within the OPDP impacts or provides value for staff *themselves* (i.e., in terms of improvements in staff understanding and confidence in managing complex cases), it may be less accurate in instances where staff were asked to describe their perceptions or opinions of the impact of formulation on offenders and/or their case outcomes.

For instance, although some OPDP staff reported within Study 4 (staff training) that formulation is useful and effective at providing offenders with an improved understanding of their own behaviour and/or improving staff-offender relationships, offenders themselves may have different perspectives of these outcomes. To further confirm these findings, it would therefore be of benefit for future research to concentrate on gaining an *offender* perspective of the impact and value of case formulation within the OPDP. Although in many instances within the OPDP offenders are not aware that a formulation has been written for their case, this type of research could still be conducted by asking offenders to rate their perspectives of various factors both before and after case consultation and formulation has taken place. For example, regardless of their awareness of consultation and formulation, offenders could

provide ratings at different time points regarding how well they feel their OM understands them and their case (i.e., in terms of their difficulties and risks), how strong their relationship is with their OM, and how motivated they feel to cease offending.

7.5 Wider Implications and Future Directions

The findings of this body of research have generally positive implications for the continued use of formulation within the OPDP. This is because many of these findings have indicated that formulation *does* provide utility and value within this service. As Study 2 was halted in its infancy however, it was not possible to empirically assess whether the initial impacts of formulation as identified throughout this thesis (i.e., improved OM understanding, facilitation of case progression via recommendations) do lead to more positive final case outcomes. Understanding the answer to this question is likely to considerably expand our knowledge of the true utility and value of formulation within the OPDP. Therefore, it is important for research to continue to explore this topic, either with the re-launch of Study 2, or with the design of alternative studies with similar aims. In addition, the re-launch of Study 2 is likely to further improve understanding of the possible role of Audit Tool Standard 3 and/or Audit Tool Standard 4b in contributing to these outcomes.

Less positive implications of this research relate to the finding that the 48 OPDP formulations analysed within Study 1a were found to be of intermediate quality overall as rated by the researcher using the CFQC-R and Audit Tool. Even though the validity of these quality tools could not be fully confirmed within the present thesis, it is concerning that formulations written within the OPDP are not always written in accordance with our current best understanding of what a high-quality formulation consists of. However, staff may be more inclined to ensure that their formulations adhere to the standards contained within these tools if these tools are fully validated. Therefore, future research should concentrate on

further validating the CFQC-R and Audit Tool (both as a whole, and also in terms of their individual items).

There are some negative implications arising from the findings of Study 4 (staff training); namely, that the majority of staff surveyed were found not to be highly satisfied with either the quantity or quality of formulation training they have received. Staff with more training were found to have more confidence in their formulation skills and were more likely to have achieved 'excellent' feedback at their last formulation assessment, indicating that formulation training does appear to have important benefits for OPDP staff. The OPDP should therefore consider offering more training to staff on an ongoing basis so that formulation skills can be updated, and confidence in writing formulations can be further developed. It is important that this training is accessible to all staff, as even those who reported having provided training to others were unlikely to report that they were 'very confident' in their own formulation skills. Taking note of the staff suggestions provided within Study 4 (regarding how to best improve the quality of training) will also be important when developing any further formulation training in future, as this is likely to improve staff engagement with this training, maximising the benefits obtained.

Future research should also aim to explore some of the areas of forensic case formulation that were not addressed within the present thesis. For instance, it was beyond the scope of the current thesis to examine the *validity* of formulations constructed within the OPDP (i.e., measuring the accuracy of the hypotheses developed within these formulations). Within the clinical case formulation literature, this topic has been explored in depth by Mumma and colleagues (Mumma, 2004; Mumma & Mooney, 2007b; Mumma & Fluck 2016), who have developed a method of calculating the validity of cognitive-behavioural case formulations. This method involves the statistical analysis of data collected via an individualised questionnaire (completed daily by the client for between 10 days to four

weeks) in order to understand the functional relationships between the distress or dysfunction experienced by this client (e.g., depression) and the variables hypothesised within their formulation to have caused/maintained this distress or dysfunction (i.e., situational triggers or cognitions). By collecting and analysing such data, valuable feedback can be gained regarding the accuracy of the hypotheses made within the formulation (which can then be updated as necessary). To perform this method effectively however, Mumma and colleagues advise that it is best if used in cases where “the client and therapist have the time and motivation to work collaboratively” (Mumma & Fluck, 2016, p. 16), as the individualised questionnaire is typically developed with considerable input from the client.

Therefore, in order to assess the validity of OPDP formulations using this method, it is likely that large adjustments to the method will be needed. This is for a number of reasons: formulations within the OPDP are often not completed collaboratively with offenders; offenders within the OPDP are unlikely to be sufficiently motivated to complete daily questionnaires; and because issues are likely to arise in terms of the accuracy of data recorded by offenders with regard to their offending behaviour and cognitions relating to this. In addition, this method of assessing formulation validity requires considerable time and resource, which may not be feasible within the OPDP due to existing demands. However, it is likely that by devising a method of examining the validity of OPDP formulations, these formulations could be further improved to maximise their utility and value. Therefore, this is an area that should be explored in future to assess its practicability within the OPDP.

7.6 Conclusion of Thesis

In conclusion, the findings obtained throughout this thesis suggest that formulation within the OPDP *does* provide utility and value in a number of different ways. This may include (but is not limited to) improving offender engagement and compliance (through the

use of formulation recommendations), better directing case management, improving staff understanding and empathy towards offenders, improving offender understanding of their own behaviour, improving staff confidence and knowledge, improving staff-offender relationships, and facilitating progression in ‘stuck’ cases. However, the impact of formulation on these outcomes (and potentially also ‘main’ offender outcomes such as reoffending) is likely to depend on a number of factors, such as the relevance, feasibility and completion of the recommendations made within each formulation, the degree to which certain standards on the Case and Risk Formulation Self-Auditing Tool are implemented (i.e., Audit Tool Standard 3 and Audit Tool Standard 4b), and potentially whether each formulation is constructed collaboratively with the offender and/or is kept relevant and updated over time. To further investigate the impact of these factors on both intermediate and main outcomes (and how these interlink), it is recommended that further experimental research be conducted, potentially starting with the re-launch of Study 2 with the assistance of the comprehensive research plan presented within Chapter 4.

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Appendices

Appendix A: Example of Paper Screening Spreadsheet (Integrative Review)

Type	Title	Author	Year	Journal	Reason For Exclusion	Stage Excluded
Journal Article	Overwhelming patients and overwhelmed therapists.	Carsky, M., & Yeomans, F.	2012	Psychodynamic Psychiatry	No specific focus on case formulation.	Abstract
Journal Article	The Current State of Poison Control Centers in Pakistan and the Need for Capacity Building.	Khan, N., et al.	2014	Asia Pacific Journal of Medical Toxicology	No specific focus on case formulation.	Abstract
Journal Article	A study of maladaptive schemas and Borderline Personality Disorder in young people.	Lawrence, K., Allen, J., & Chanen, A.	2011	Cognitive Therapy and Research	No specific focus on case formulation.	Abstract
Dissertation	Discord and ambiguity within youth crime and justice debates.	Adorjan, M.	2011	Dissertation Abstracts International	No specific focus on case formulation.	Abstract
Journal Article	The integrative power of dance/movement therapy: Implications for the treatment of dissociation and developmental trauma.	Pierce, L.	2014	The Arts In Psychotherapy	CF focus. Framework. No primary data collection/analysis of outcomes using recognised	Abstract
Book	Multimethod clinical assessment.	Hopwood, C., & Bornstein, R.	2014		CF focus. Overview/case study. No primary data collection/analysis of outcomes using recognised method.	Abstract
Book	The Wiley Blackwell handbook of social anxiety disorder.	Weeks, J.	2014		CF focus. Overview. No primary data collection/analysis of outcomes using recognised	Abstract
Journal Article	Schematherapie für Cluster-C-Persönlichkeitsstörungen.	Arntz, A.	2011		Not in English.	Abstract
Journal Article	Kratom abuse in Ramathibodi Poison Center, Thailand: A five-year experience.	Trakulsrichal, S., et al.	2013	Journal of Psychoactive Drugs	No specific focus on case formulation.	Abstract
Journal Article	Two suicidal fatalities due to the ingestion of chlorfenvinphos formulations: simultaneous determination of the pesticide and the petroleum distillates in tissues by gas chromatography-flame-ionization detection and gas chromatography-	Martinez, M., & Ballesteros, S.	2012	Journal of Analytical Toxicology	No specific focus on case formulation.	Abstract
Journal Article	A preliminary examination of participant characteristics in relation to patients' treatment beliefs in psychotherapy in a training clinic.	Constantino, M., Penek, S., Bernecker, S., & Overtree, C	2014	Journal of Psychotherapy Integration	No specific focus on case formulation.	Abstract
Book Chapter	The MMPI instruments.	Ben-Porath, Y.	2013		CF focus. Overview/description. No primary data collection/analysis of outcomes using recognised	Abstract

Appendix B: Example of Quality Appraisal and Scoring Method Using the MMAT

Quality scoring of: Minoudis, P., Craissati, J., Shaw, J., McMurrin, J., Freestone, M., Chaun, S., & Leonard, A. (2013). An evaluation of case formulation training and consultation with probation officers. *Criminal Behaviour and Mental Health*, 23(4), 252-262. doi: 10.1002/cbm.1890.

Quantitative Non-Randomised	Yes	Partially	No	Comments
3.1. Are the participants representative of the target population?	20%			Qualified probation officers recruited through probation service – Reflective of target population.
3.2. Are measurements appropriate regarding both the outcome and exposure/intervention?		10%		Outcomes measured using tool which has not been fully validated (CFQC). Paper however partially validates this tool before use. Best available tool at the time.
3.3. Are there complete outcome data?			0%	45% attrition rate between pre and post training formulations.
3.4. Are the confounders accounted for in the design and analysis?	20%			Half of participants received vignette A at baseline and half B. Blind-scoring of formulations.
3.5 During the study period, is the intervention/exposure administered as intended?		10%		100% of participants completed initial training. Participants then completed a number of consultations over the next 6 months within their job roles. Due to a number of uncontrollable factors, some participants received more consultations than others (max 6). However, all participants received at least 4 consultations within this time.

Result = 60% - Moderate Quality

Appendix C: Booklet Completed by OPDP Staff During Study 1b

Which of the following formulation features would you expect to be associated with offender outcomes?

Please rate each item from 1 (I would not expect this feature to be associated with offender outcomes at all) to 10 (I would expect this feature to be very strongly associated with offender outcomes)

	Description	Rating
Case and Risk Formulation Self Auditing Tool (NOMS & NHS, 2015b)	Score on Standard 1: The formulation states clearly what it is seeking to explain (i.e., case/problem/risk and which one specifically) and why (i.e., what is the purpose of this formulation)	
	Score on Standard 2: The formulation includes an indication of the range, depth, and quality of the evidence on which it is based	
	Score on Standard 3: The formulation accounts for the developmental history of the case and/or the patterns of problem behaviour	
	Score on Standard 4a: The formulation <i>organises</i> information relevant to the purpose of the formulation (such as information about attitudes and beliefs, relationships with others, attachments, other situational, social, and cultural factors)	
	Score on Standard 4b: The formulation provides a balanced view about areas of vulnerability <i>and</i> areas of strength, including protective factors	
	Score on Standard 4c: The formulation <i>connects</i> pieces of information about the person or the problem/risk in order to create an explanation for the case or the risk/problem under scrutiny	

	Description	Rating
	Score on Standard 5: The formulation provides a rational basis for <i>decisions</i> about interventions and management and how they should be <i>prioritised</i>	
	Score on Standard 6a: The formulation is expressed in language <i>accessible and appropriate</i> to all those for whom it is intended, and brief enough to be read easily.	
	Score on Standard 6b: The formulation is meaningful, provides a coherent explanation of the case or problem/risk, and adds to what is already known about the service user	
Case Formulation Quality Checklist Revised (McMurrin & Bruford, 2016)	Score on Item 1 (Narrative): The formulation is presented in everyday language that tells a coherent, ordered, and meaningful story	
	Score on Item 2 (External Coherence): The formulation is explicitly consistent with an empirically supported theory	
	Score on Item 3 (Factual Foundation): The formulation is based on relevant information about the case that is adequate in terms of quantity and quality	
	Score on Item 4 (Internal Coherence): The formulation rests on propositions or makes assumptions that are compatible or non-contradictory	

Description	Rating
Score on item 5 (Completeness): The formulation has a plot that ties together as much of the relevant information as possible	
Score on Item 6 (Events Understood Over Time): The formulation ties together information about the past, present, and future of the case	
Score on Item 7 (Simplicity): The formulation is free from unnecessary details	
Score on Item 8 (Predictive): The formulation goes beyond description, statement of facts, or classification to make detailed and testable predictions. The key predictions are those about which strategies will be most effective in treating and managing harmful behaviour	
Score on Item 9 (Action Oriented): The formulation prioritises and plans treatments	
Score on Item 10 (Overall Quality): The formulation is comprehensive, logical, coherent, focused, and informative.	
Other Formulation Features	
The <u>number</u> of recommendations made	
The type of recommendations made (e.g., treatment recommendations/management recommendations/further information requests)	

Description	Rating
The certainty of the recommendations made (e.g., are they firm or potential)	
The psychological model or theory used (CAT, schema, attachment theory etc)	
The structure of the formulation (e.g., 5Ps)	
The style of the formulation (e.g., narrative/diagrammatic/mixed)	
Whether the formulation is of the level it was intended to be (e.g., does a level 2 formulation adhere to level 2 guidelines)	
The type of formulation (e.g., case/risk/problem)	
The total length of the formulation	
The length of the problems/symptoms information	
The length of the predisposing factors information	
The length of the precipitating factors/triggers information	
The length of the perpetuating/maintaining factors information	
The length of the protective factors information	
The length of the inferred mechanism section	

Description	Rating
The length of the recommendations section	
The length of 'other information' which does not fit into any of these previous categories	

Appendix D: Participant Information Sheet Study 2 (Psychologists)

Participant Information Sheet



You are being invited to take part in some important research. Before you decide whether to participate, please consider the following information

What is the purpose of the research?

The main aim of the research is to examine the potential impact of formulation on a variety of different outcomes (including service user outcomes).

What does taking part involve?

Taking part simply involves writing formulations as you typically would do. Outcomes will be collected from a range of sources including OMs, who will be asked to complete a series of 5 questionnaires over a 6-month period. These questionnaires will ask OMs about a particular service user on their caseload and about the formulation that has been written for them. To facilitate this, you will be asked to recruit OMs at the end of case consultation meetings by simply providing them with a study information sheet, consent form and the first 2 questionnaires. OM recruitment will be ongoing for a period of 2 months. Each time you complete a formulation for a recruited OM, you will be asked to notify the researcher. This OM will then be sent further questionnaires directly. Later in the study, you *may* be asked to utilise some formulation guidance provided by the researcher which will ask you to focus on particular features within your formulations. The study is concerned primarily with level 2 and level 3 formulations.

Why should I take part?

Due to a lack of research, the benefits of case formulation within the OPD Pathway remain largely unproven. By taking part, you will therefore be contributing to an important piece of research which will allow us to better understand the benefits of formulation and how to maximise these benefits. Higher rates of participation are likely to lead to more valid and accurate results, meaning that your participation is of great importance and will be highly valued.

Will my data be identifiable?

Your data will not be identifiable to anyone except the researcher. All data will remain completely confidential and secure. The researcher will need to know your identity *only* to keep in contact with you throughout the study. At the end of the data collection period, all personal information (i.e. your name) will be destroyed. At this point, your data will not be identifiable even by the researcher. This means that your data will not be identifiable in any analyses, findings or reports. The research is concerned with group level data and is not interested in any particular individual.

How will my data be stored and destroyed?

All collected data will be stored securely on a password-protected computer or in a locked filing cabinet at Swansea University. Any personal data (i.e. your name) will be permanently deleted/destroyed immediately after data collection has finished. Anonymised data will be kept until the research has been completed and all publications/disseminations relating to the data

have been finalised. This is expected to be October 2021. Anonymised data will then also be permanently deleted/destroyed.

How will the data be used?

The anonymised group data will form part of a PhD thesis and may be presented to interested parties and/or published in scientific journals and related media. The findings may also have implications for how case formulation is used within the OPD Pathway in the future.

Who is carrying out the research?

The research is being carried out by Victoria Wheable, a PhD researcher within the Department of Psychology at Swansea University, under the supervision of Professor Jason Davies and Doctor Ruth Horry. The research is jointly funded by Swansea University and the OPD Pathway and has been approved by HMPPS National Research Committee.

What if I have other questions?

If you have further questions about this research, please do not hesitate to contact the researcher, Victoria Wheable, at Vicky.Wheable@justice.gov.uk.



Appendix E: Participant Consent Form Study 2 (Psychologists)

Swansea University
Prifysgol Abertawe

<u>Consent Form</u>	Participant initial
1. I confirm that I have read and understood the participant information sheet dated 10 th October 2019 and have had the opportunity to contact the researcher to ask questions.	
<p>2. I understand that my roles within the research will be:</p> <p>A. <u>To recruit OMs into the study at the end of case consultation meetings</u> by providing them with a study information sheet, consent form and the first two questionnaires. These will be provided to me by the researcher in due course.</p> <p>B. <u>To inform the researcher</u> each time I complete a formulation for an OM I have recruited.</p> <p>C. (If asked later in the study) To implement guidance provided by the researcher which will ask me to <u>focus on particular features within my formulations</u>.</p>	
3. I have been informed that <u>my data will not be identifiable to anyone except the researcher</u> and that all my data will <u>remain completely confidential and secure</u> . After data collection ends, my personal information will be <u>permanently destroyed</u> . This means that my data will <u>not</u> be identifiable in any findings, reports or publications resulting from this research.	
4. I understand that my participation is entirely voluntary and that I am free to withdraw at any time during the study by contacting the researcher at Vicky.Wheable@justice.gov.uk. I understand that once the study is completed it will not be possible for me to withdraw due to the <u>anonymisation of all data</u> .	
5. I agree to take part in this research.	

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Researcher	Date	Signature

Appendix F: Instructions on How to Introduce the Study to OMs (for psychologists)

How to Introduce the Study

“You have been invited to take part in some research which is being jointly funded by the OPD Pathway and Swansea University. The research aims to understand the benefits of case formulation within the OPD Pathway. Amongst other things, the findings of this research may be used to improve the service we provide to OMs. Taking part simply involves completing 5 questionnaires which will ask you about the service user we have discussed today and about the formulation that I will be writing about this service user. These questionnaires are anonymous, and I will never see your answers. If you are happy to take part, you can fill out the first 2 questionnaires now. The last 3 questionnaires will be sent to you directly over the next few months. Here is an information sheet that explains more about what I have just told you. If you are happy to take part, please let me know and I will give you a consent form to sign”.

Appendix G: Participant Information Sheet Study 2 (OMs)



Participant Information Sheet

Swansea University
Prifysgol Abertawe

You are being invited to take part in some important research. Before you decide whether to participate, please consider the following information.

What is the purpose of the research?

The purpose of the research is to understand the benefits of case formulation within the OPD Pathway (including benefits to OMs and service users). The results of this research are likely to improve the case formulation service provided to OMs in the future.

What does taking part involve?

Taking part simply involves completing 5 short questionnaires over a period of 6 months. These questionnaires will ask you about your experiences of managing a particular service user on your caseload and will also ask about your experiences of using the formulation written for this service user. The first 2 of these questionnaires will be provided to you to complete today.

Why should I take part?

By taking part in the research, you will allow us to develop a better understanding of the benefits of case formulation within the OPD Pathway and how to maximise these benefits. This is likely to lead to an improved case formulation service for OMs in the future. Higher rates of participation are also likely to lead to more valid and accurate results, meaning that your participation is of great importance and will be highly valued.

Will my data be identifiable?

Your data will not be identifiable to anyone except the researcher. The researcher will need to know your identity *only* in order to provide you with the relevant questionnaires throughout the study. All of your data will remain completely confidential and secure. At the end of the data collection period, all personal information (i.e. your name) will be destroyed. At this point, your data will not be identifiable even by the researcher. This means that your data will also not be identifiable in any analyses, findings or reports. The research is concerned with group level data and is not interested in any particular individual.

Is participation voluntary and what if I wish to later withdraw?

Your participation is entirely voluntary, and you will be free to withdraw at any point during the study simply by contacting the researcher at Vicky.Wheable@justice.gov.uk. Please note that once the study is completed it will not be possible to withdraw due to the anonymisation of all data.

How will my data be stored and destroyed?

All collected data will be stored securely on a password-protected computer or in a locked filing cabinet at Swansea University. Any personal data (i.e. your name) will be permanently deleted/destroyed immediately after all 5 questionnaires have been linked together. The anonymised questionnaire data will be kept until the research has been completed and all publications/disseminations relating to the data has been finalised. This is expected to be October 2021. At this point, this anonymised data will also be permanently deleted/destroyed.

How will the data be used?

The anonymised group data will form part of a PhD thesis and may be presented to interested parties and/or published in scientific journals and related media. The findings may also have implications for how case formulation is used within the OPDP in the future.

Who is carrying out the research?

The research is being carried out by Victoria Wheable, a PhD researcher within the Department of Psychology at Swansea University. It is supervised by Professor Jason Davies and Doctor Ruth Horry. The research is jointly funded by Swansea University and the OPDP and has been approved by HMPPS National Research Committee.

What if I have other questions?

If you have further questions about this research, please do not hesitate to contact the researcher, Victoria Wheable, at Vicky.Wheable@justice.gov.uk.

Appendix H: Participant Consent Form Study 2 (OMs)



Swansea University
Prifysgol Abertawe

<u>Consent Form</u>	Participant initial
1. I confirm that I have read and understood the participant information sheet dated 10th th October 2019 and have had the opportunity to ask questions.	
2. I understand that my role within the research is to complete a total of <u>5 questionnaires over a 6-month period</u> , with the first 2 of these questionnaires being provided to me today. The purpose of these questionnaires is to examine the benefits of case formulation within the OPD Pathway and to improve the case formulation service provided to OMs.	
3. I have been informed that <u>my data will not be identifiable to anyone except the researcher</u> and that all my data will <u>remain completely confidential and secure</u> . After data collection ends, my personal information will be <u>permanently destroyed</u> . This means that my data will <u>not</u> be identifiable in any findings, reports or publications resulting from this research.	
4. I understand that my participation is entirely voluntary and that I am free to withdraw at any time during the study by contacting the researcher at Vicky.Wheable@justice.gov.uk. I understand that once the study is completed, it will not be possible for me to withdraw due to the <u>anonymisation of all data</u> .	
5. I agree to take part in this research.	

Name of Participant

Date

Signature

Name of Researcher

Date

Signature

Appendix I: OM Demographic Survey Study 2



Swansea University
Prifysgol Abertawe

Thank you very much for agreeing to take part in this research. This questionnaire will ask you about yourself and about your experiences of working with personality disordered service users.

Please read each question carefully and answer as **openly and honestly** as you can. There are **no incorrect answers**. Your responses will remain completely **confidential and secure** and your data will **not** be identifiable in any analyses, findings, or reports.

1. My memorable word is _____ and my memorable number is _____

2. Please indicate your age: _____

3. Please indicate your gender: _____

4. What is the highest level of education you have completed?

No Formal Education | GCSE or NVQ Level 1 or 2 | A-Level or NVQ Level 3

First Degree (e.g. BSc, BA, BEd) or NVQ Level 4

Higher Degree (e.g. MSc, MA, MBA, PGCE, PhD) or NVQ Level 5

Other Qualification (please specify) _____

5. What is your job role? _____

6. How long have you held this job role? _____ years _____ months

7. Do you work full time or part time in this role?

Full Time | Part Time | Other (please specify) _____

8. Which team do you work within? (e.g., Swansea) _____

9. How many service users are currently on your caseload? _____

10. Aside from the standard training provided to you when starting your job role, have you attended any training courses to develop the skills or knowledge that you use within your role? (If yes, please provide details. If no, please write 'N/A').

--

11. Please rate each of the following statements using the scale provided. For each statement, please circle the option that is generally true for you. There are no incorrect answers, so please answer as openly and honestly as possible.

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1. I feel that I have a good knowledge of the diagnosis of personality disorder	1	2	3	4	5
2. I feel that I do not have enough knowledge about the nature and clinical characteristics of this client group	1	2	3	4	5
3. I feel that I have a good understanding of how clients may develop a personality disorder	1	2	3	4	5
4. I feel that I have a good understanding of why clients harm themselves or behave in self-destructive ways	1	2	3	4	5
5. I have a good understanding of psychological models of personality disorder	1	2	3	4	5
6. I feel that I do not have the necessary clinical skills to work with this client group	1	2	3	4	5
7. I feel confident that I can make a positive impact on the care of this client group	1	2	3	4	5
8. I feel able to apply psychological models in my work	1	2	3	4	5
9. I feel understanding towards personality disordered clients	1	2	3	4	5
10. I feel interested in personality disordered clients	1	2	3	4	5
11. I feel able to help personality disordered clients	1	2	3	4	5

12. I feel pessimistic about personality disordered clients	1	2	3	4	5
13. I feel frustrated with personality disordered clients	1	2	3	4	5
14. I feel that clients with this diagnosis often engage in self-harming behaviour as a way of manipulating other people	1	2	3	4	5
15. I often feel overwhelmed by the problems that clients with personality disorder have	1	2	3	4	5
16. This organisation provides important support and care for people with personality disorder	1	2	3	4	5
17. Our staff are well trained to respond to the special needs of people with personality disorder	1	2	3	4	5
18. I often feel that there must be something more that I could do to help clients with personality disorder	1	2	3	4	5
19. I understand how personality disorder can be linked to offending	1	2	3	4	5
20. I understand the relationship between personality disorder and risk of violent and sexual offending	1	2	3	4	5
21. I feel able to access specialist support for personality disordered offenders	1	2	3	4	5

Appendix J: Survey 1 (Pre-Formulation)



Thank you very much for agreeing to take part in this research. This questionnaire will ask you about the service user discussed within the present case consultation meeting and about your opinions on managing this case. You should **not** have read this service user's formulation prior to completing this questionnaire.

Please read each question carefully and answer as **openly and honestly** as you can. There are **no incorrect answers**. Your responses will remain completely **confidential and secure** and your data will **not** be identifiable in any analyses, findings or reports.

1. My memorable word is _____ and my memorable number is _____

2. How long has this service user been on your caseload? (Please circle the answer that best fits)

Less Than 1 Week	Between 1 to 4 Weeks	Between 1 to 3 Months	More Than 3 Months
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3. How well do you feel you understand this case overall? (i.e., the causes of the service user's offending, triggers to their offending, how their offending behaviour could be reduced).

Do Not Understand the Case at All	Somewhat Understand the Case	Mostly Understand the Case	Completely Understand the Case
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4. **To your knowledge**, has this service user engaged in any **risk-taking behaviour** in the **past month**? *Note: For the purposes of this questionnaire, risk taking behaviour is defined as “engagement in an activity that has the potential to be harmful or dangerous to oneself or others” (e.g., illegal substance misuse, engaging with anti-social peers, displaying offence paralleling behaviour).* Please use your background knowledge of the service user to answer this question to the best of your ability.

No Risk-Taking Behaviour at All	Low Level of Risk-Taking Behaviour	Moderate Level of Risk-Taking Behaviour	High Level of Risk-Taking Behaviour
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5. **Please provide a brief description of this risk-taking behaviour** (i.e. type, amount). Please leave this question blank if you answered “No Risk-Taking Behaviour at All” for the previous question.

6. **To your knowledge**, has this service user engaged in any **purposeful activity** within the **past month**? *Note: For the purposes of this questionnaire, purposeful activity is defined as “any activity or constructive interaction which promotes citizenship, develops learning and employability skills, builds life skills and resilience or addresses well-being” (e.g., employment, education, pro-social activity, skill development).* Again, please use your background knowledge of the service user to answer this question.

7. Please provide a brief description of this purposeful activity (i.e., type, amount). Please leave this question blank if you answered “No Purposeful Activity at All” for the previous question.

8. **To your knowledge, have any significant life events happened to the service user within the past month?** *Note:* For the purposes of this questionnaire, a significant life event is defined as “any major change in a person’s circumstances that disrupts that person’s usual activities” (e.g., marriage, divorce, death of a loved one, gaining or losing a job, major illness, or injury). Please use your background knowledge of the service user to answer this question to the best of your ability. If no significant life events have occurred to your knowledge, please write ‘N/A’.

9. In your opinion, how **compliant** has this service user been with their **pathway plan** over the **past month?** (If they have been on your caseload less than 1 month, how compliant do you feel they have been with their sentence plan since you have been managing them?).

Not Compliant at All	Somewhat Compliant	Mostly Compliant	Completely Compliant
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10. How **motivated** do you believe this service user is to **cease offending?**

Not Motivated at All	Somewhat Motivated	Mostly Motivated	Completely Motivated
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11. How confident do you feel in managing this case?

Not Confident at All	Somewhat Confident	Mostly Confident	Completely Confident
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12. Please briefly describe your reasons for this confidence rating (i.e., what has increased or decreased your confidence in managing this case?)

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13. How motivated do you feel in managing this case?

Not Motivated at All	Somewhat motivated	Mostly motivated	Completely Motivated
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14. Please briefly describe your reasons for this motivation rating (i.e., what has increased or decreased your motivation in managing this case?)

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Appendix K: Survey 2 (Immediately Post-Formulation)



Swansea University
Prifysgol Abertawe

Thank you very much for your continued participation in this research, your time and effort is greatly appreciated!

This questionnaire will ask you about a specific service user on your caseload and the formulation that has been written for them (details provided via email). **Please do not complete this questionnaire until you have read this formulation.**

Please read each question carefully and answer as **openly and honestly** as you can. You may recognise some questions from the previous questionnaire, but please answer these according to how you feel at the **present time**. Your responses are completely **confidential and secure** and will **not** be identifiable in any analyses, findings, or reports.

1. My memorable word is _____ and my memorable number is _____

2. How well do you feel you understand this case overall? (i.e., the causes of the service user's offending, triggers to their offending, how their offending behaviour could be reduced). Please circle the answer that best fits.

Do Not Understand the Case at All	Somewhat Understand the Case	Mostly Understand the Case	Completely Understand the Case
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3. How well do you feel you understand this formulation?

Do Not Understand the Formulation at All	Somewhat Understand the Formulation	Mostly Understand the Formulation	Completely Understand the Formulation
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4. Please briefly describe any parts of the formulation that have particularly increased your understanding of this case:

5. Please briefly describe any parts of the formulation that have particularly decreased your understanding of this case:

6. Please give any suggestions for how the formulation could be improved to further increase your understanding of this case:

7. According to the formulation, what are the causes of the service user's offending **behaviour**? (Please give a brief description. If the formulation does not include this information, please write 'N/A').

8. According to the formulation, how might the service user's risk of reoffending be reduced?

(Please give a brief description. If the formulation does not include this information, please write 'N/A').

9. Please briefly outline the recommendations made within the formulation (e.g., recommended treatment interventions, management strategies, requests for further information). If the formulation does not include any recommendations, please write 'N/A').

10. How well do you feel you understand these recommendations? (If no recommendations were made, please leave blank).

Do Not Understand the Recommendations at All	Somewhat Understand the Recommendations	Mostly Understand the Recommendations	Completely Understand the Recommendations
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11. **To your knowledge, has this service user engaged in any risk-taking behaviour since the last time you completed this questionnaire?** *Note: For the purposes of this questionnaire, risk taking behaviour is defined as “engagement in an activity that has the potential to be harmful or dangerous to oneself or others” (e.g., illegal substance misuse, engaging with anti-social peers, displaying offence paralleling behaviour). Please use your background knowledge of the service user to answer this question to the best of your ability.*

No Risk-Taking Behaviour at All	Low Level of Risk-Taking Behaviour	Moderate Level of Risk-Taking Behaviour	High Level of Risk-Taking Behaviour
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12. **Please provide a brief description of this risk-taking behaviour** (i.e., type, amount). Please leave this question blank if you answered “No Risk-Taking Behaviour at All” for the previous question.

13. **To your knowledge, has this service user engaged in any purposeful activity since the last time you completed this questionnaire?** *Note: For the purposes of this questionnaire, purposeful activity is defined as “any activity or constructive interaction which promotes citizenship, develops learning and employability skills, builds life skills and resilience or addresses well-being” (e.g., employment, education, pro-social activity, skill development). Again, please use your background knowledge of the service user to answer this question.*

No Purposeful Activity at All	Low Level of Purposeful Activity	Moderate Level of Purposeful Activity	High Level of Purposeful Activity
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14. Please provide a brief description of this purposeful activity (i.e., type, amount). Please leave this question blank if you answered “No Purposeful Activity at All” for the previous question.

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15. To your knowledge, has the service user experienced any significant life events since the last time you completed this questionnaire? *Note: For the purposes of this questionnaire, a significant life event is defined as “any major change in a person’s circumstances that disrupts that person’s usual activities” (e.g., marriage, divorce, death of a loved one, gaining or losing a job, major illness, or injury).* Please use your background knowledge of the service user to answer this question to the best of your ability. If no significant life events have occurred to your knowledge, please write ‘N/A’.

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16. In your opinion, how compliant has this service user been with their pathway plan since the last time you completed this questionnaire?

Not Compliant at All	Somewhat Compliant	Mostly Compliant	Completely Compliant
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17. How motivated do you believe this service user is to cease offending?

Not Motivated at All	Somewhat Motivated	Mostly Motivated	Completely Motivated
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18. How confident do you feel in managing this case?

Not Confident at All	Somewhat Confident	Mostly Confident	Completely Confident
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19. Please briefly describe your reasons for this confidence rating (i.e., what has increased or decreased your confidence in managing this case?)

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20. How motivated do you feel in managing this case?

Not Motivated at All	Somewhat Motivated	Mostly Motivated	Completely Motivated
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21. Please briefly describe your reasons for this motivation rating (i.e., what has increased or decreased your motivation in managing this case?)

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Appendix L: Survey 3 (One-month post-formulation)



Swansea University
Prifysgol Abertawe

Thank you very much for your continued participation in this research, your time and effort is greatly appreciated!

This questionnaire will ask you about a specific service user on your caseload and the formulation that has been written for them (details provided via email).

Please read each question carefully and answer as **openly and honestly** as you can. You may recognise some questions from the previous questionnaire, but please answer these questions according to how you feel at the **present time**. Your responses are **completely confidential and secure**, and your data will **not** be identifiable in any analyses, findings, or reports.

1. My memorable word is _____ and my memorable number is _____

2. How well do you feel you understand this case overall? (i.e., the causes of the service user's offending, triggers to their offending, how their offending behaviour could be reduced). Please circle the answer that best fits.

Do Not Understand the Case at All	Somewhat Understand the Case	Mostly Understand the Case	Completely Understand the Case
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3. Have you referred back to the formulation since first reading it?

Not at All	Once or Twice	Three to Five Times	More Than Five Times
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4. How well do you feel you understand this formulation?

Do Not Understand the Formulation at All	Somewhat Understand the Formulation	Mostly Understand the Formulation	Completely Understand the Formulation
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5. Please briefly describe any parts of the formulation that have particularly increased your understanding of this case since the last time you completed this questionnaire:

6. Please briefly describe any parts of the formulation that have particularly decreased your understanding of this case since the last time you completed this questionnaire:

7. Please give any suggestions for how the formulation could be improved to further increase your understanding of this case:

Please look back at the [recommendations](#) and/or [suggested actions](#) that were discussed within the formulation (i.e. recommended management strategies, treatment interventions, requests for further information)

8. How well do you feel you understand these recommendations? (If no recommendations were made, please leave blank).

Do Not Understand the Recommendations at All	Somewhat Understand the Recommendations	Mostly Understand the Recommendations	Completely Understand the Recommendations
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9. Please give a brief description of the recommendations that have been carried out and in which order these were carried out.

10. Please give a brief description of any recommendations that have not been carried and the reasons for this. *Note.* Your answers are completely confidential.

11. Please give a brief description of any other recommendations that have been carried out which were not discussed within the formulation.

12. To your knowledge, has this service user engaged in any risk-taking behaviour since the last time you completed this questionnaire? *Note:* For the purposes of this questionnaire, risk-taking behaviour is defined as “engagement in an activity that has the potential to be harmful or dangerous to oneself or others” (e.g. illegal substance misuse, engaging with anti-social peers, displaying offence-paralleling behaviour). Please use your background knowledge of the service user to answer this question to the best of your ability.

No Risk-Taking Behaviour at All	Low Level of Risk-Taking Behaviour	Moderate Level of Risk-Taking Behaviour	High Level of Risk-Taking Behaviour
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13. Please provide a brief description of this risk-taking behaviour (i.e., type, amount). Please leave this question blank if you answered ‘No Risk-Taking Behaviour at All’ for the previous question.

14. To your knowledge, has this service user engaged in any purposeful activity since the last time you completed this questionnaire?

Note: For the purposes of this questionnaire, purposeful activity is defined as “any activity or constructive interaction which promotes citizenship, develops learning and employability skills, builds life skills and resilience or addresses well-being” (e.g., employment, education, pro-social activity, skill development). Again, please use your background knowledge of the service user to answer this question.

No Purposeful Activity at All	Low Level of Purposeful Activity	Moderate Level of Purposeful Activity	High Level of Purposeful Activity
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15. Please provide a brief description of this purposeful activity (i.e., type, amount). Please leave this question blank if you answered 'No Purposeful Activity at All' for the previous question.

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16. **To your knowledge, has the service user experienced any significant life events since the last time you completed this questionnaire?** *Note: For the purposes of this questionnaire, a significant life event is defined as "any major change in a person's circumstances that disrupts that person's usual activities" (e.g., marriage, divorce, death of a loved one, gaining or losing a job, major illness or injury). Please use your background knowledge of the service user to answer this question to the best of your ability. If no significant life events have occurred to your knowledge, please write 'N/A'.*

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17. In your opinion, how compliant has this service user been with their pathway plan since the last time you completed this questionnaire?

Not Compliant at All	Somewhat Compliant	Mostly Compliant	Completely Compliant
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18. How motivated do you believe this service user is to cease offending?

Not Motivated at All	Somewhat Motivated	Mostly Motivated	Completely Motivated
----------------------	--------------------	------------------	----------------------

19. How confident do you feel in managing this case?

Not Confident at All	Somewhat Confident	Mostly Confident	Completely Confident
----------------------	--------------------	------------------	----------------------

20. Please briefly describe your reasons for this confidence rating (i.e., what has increased or decreased your confidence in managing this case?)

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21. How motivated do you feel in managing this case?

Not Motivated at All	Somewhat motivated	Mostly motivated	Completely Motivated
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22. Please briefly describe your reasons for this motivation rating (i.e., what has increased or decreased your motivation in managing this case?)

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Appendix M: Survey 4 (Three-Months Post-Formulation)



Swansea University
Prifysgol Abertawe

This is the final questionnaire of the study. Thank you for your ongoing participation and support, it is highly appreciated.

This questionnaire will ask you about a specific service user on your caseload and the formulation that has been written for them (details provided via email).

Please read each question carefully and answer as **openly and honestly** as you can. You may recognise some questions from the previous questionnaire, but please answer these questions according to how you feel at the **present time**. Your responses are **completely confidential and secure**, and your data will **not** be identifiable in any analyses, findings, or reports.

1. My memorable word is _____ and my memorable number is _____

2. How well do you feel you understand this case overall? (i.e., the causes of the service user's offending, triggers to their offending, how their offending behaviour could be reduced). Please circle the answer that best fits.

Do Not Understand the Case at All	Somewhat Understand the Case	Mostly Understand the Case	Completely Understand the Case
--------------------------------------	---------------------------------	-------------------------------	--------------------------------------

3. Have you referred back to the formulation since first reading it?

Not at All	Once or Twice	Three to Five Times	More Than Five Times
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4. How well do you feel you understand this formulation?

Do Not Understand the Formulation at All	Somewhat Understand the Formulation	Mostly Understand the Formulation	Completely Understand the Formulation
--	---	--------------------------------------	---

5. Please briefly describe any parts of the formulation that have particularly increased your understanding of this case since the last time you completed this questionnaire:

6. Please briefly describe any parts of the formulation that have particularly decreased your understanding of this case since the last time you completed this questionnaire:

7. Please give any suggestions for how the formulation could be improved to further increase your understanding of this case:

Please look back at the [recommendations](#) and/or [suggested actions](#) that were discussed within the formulation (i.e. recommended management strategies, treatment interventions, requests for further information)

8. How well do you feel you understand these recommendations? (If no recommendations were made, please leave blank).

Do Not Understand the Recommendations at All	Somewhat Understand the Recommendations	Mostly Understand the Recommendations	Completely Understand the Recommendations
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9. Please give a brief description of any recommendations that have been carried out since the last time you completed this questionnaire and in which order these were carried out.

10. Please give a brief description of any recommendations that have not yet been carried and the reasons for this. *Note.* Your answers are completely confidential.

11. Please give a brief description of any other recommendations that have been carried out since the last time you completed this questionnaire which were not discussed within the formulation.

12. To your knowledge, has this service user engaged in any risk-taking behaviour since the last time you completed this questionnaire? *Note:* For the purposes of this questionnaire, risk-taking behaviour is defined as “engagement in an activity that has the potential to be harmful or dangerous to oneself or others” (e.g., illegal substance misuse, engaging with anti-social peers, displaying offence-paralleling behaviour). Please use your background knowledge of the service user to answer this question to the best of your ability.

No Risk-Taking Behaviour at All	Low Level of Risk-Taking Behaviour	Moderate Level of Risk-Taking Behaviour	High Level of Risk-Taking Behaviour
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13. Please provide a brief description of this risk-taking behaviour (i.e., type, amount). Please leave this question blank if you answered ‘No Risk-Taking Behaviour at All’ for the previous question.

14. To your knowledge, has this service user engaged in any purposeful activity since the last time you completed this questionnaire?

Note: For the purposes of this questionnaire, purposeful activity is defined as “any activity or constructive interaction which promotes citizenship, develops learning and employability skills, builds life skills and resilience or addresses well-being” (e.g., employment, education, pro-social activity, skill development). Again, please use your background knowledge of the service user to answer this question.

15. Please provide a brief description of this purposeful activity (i.e., type, amount). Please leave this question blank if you answered 'No Purposeful Activity at All' for the previous question.

No Purposeful Activity at All	Low Level of Purposeful Activity	Moderate Level of Purposeful Activity	High Level of Purposeful Activity
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16. To your knowledge, has the service user experienced any significant life events since the last time you completed this questionnaire? *Note: For the purposes of this questionnaire, a significant life event is defined as "any major change in a person's circumstances that disrupts that person's usual activities" (e.g., marriage, divorce, death of a loved one, gaining or losing a job, major illness, or injury).* Please use your background knowledge of the service user to answer this question to the best of your ability. If no significant life events have occurred to your knowledge, please write 'N/A'.

17. In your opinion, how compliant has this service user been with their pathway plan since the last time you completed this questionnaire?

Not Compliant at All	Somewhat Compliant	Mostly Compliant	Completely Compliant
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18. How motivated do you believe this service user is to cease offending?

Not Motivated at All	Somewhat Motivated	Mostly Motivated	Completely Motivated
----------------------	--------------------	------------------	----------------------

19. How confident do you feel in managing this case?

Not Confident at All	Somewhat Confident	Mostly Confident	Completely Confident
----------------------	--------------------	------------------	----------------------

20. Please briefly describe your reasons for this confidence rating (i.e., what has increased or decreased your confidence in managing this case?)

--

21. How motivated do you feel in managing this case?

Not Motivated at All	Somewhat motivated	Mostly motivated	Completely Motivated
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22. Please briefly describe your reasons for this motivation rating (i.e., what has increased or decreased your motivation in managing this case?)

--

23. Do you feel that the formulation has influenced the way you have managed this service user?

Has Not Influenced This at All	Has Influenced This A Small Amount	Has Influenced This A Moderate Amount	Has Influenced This A Large Amount
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24. Please describe any other factors that had an influence on the way you managed this service user (i.e., reports from other sources, advice from others, communication with service user).

--

25. In your opinion, did the written case formulation provide any additional benefit over and above the case consultation alone?

No Additional Benefit at All	A Small Amount of Additional Benefit	A Moderate Amount of Additional Benefit	A Large Amount of Additional Benefit
---------------------------------	---	---	---

26. Please describe what additional benefit the written case formulation provided over and above case consultation alone: (*Note*. Please leave this question blank if you answered 'No Additional Benefit at All' for the previous question).

--

27. Finally, how do you believe case formulation could be improved to help you better manage service users in the future?

--

Appendix N: Debrief Statement Study 2



Swansea University
Prifysgol Abertawe

Thank you so much for your time and effort in completing the study! It has been much appreciated.

Purpose: The main purpose of this research was to confirm the results of our previous study, in which several formulation features were found to be associated with positive service user outcomes. To do this, we aimed to:

- A) Examine whether formulations including these features lead to more positive service user outcomes.
- B) Explore *how* formulations containing these features can positively impact service user outcomes.

Method: Within the current study, four groups of formulations containing different combinations of these features were compared. To create equal numbers of formulations in each of these four groups, some psychologists were provided with guidance on how to incorporate certain features into their formulations.

OMs were tasked with completing online questionnaires throughout the study period to understand *how* formulations containing certain features may positively impact service user outcomes. These questionnaires allowed us to track the possible impact of different formulations over time. This type of research is likely to provide us with a better understanding of the benefits of case formulation within the OPDP.

We are currently in the process of analysing all collected data and should have some interesting results soon! If you would like to receive a summary of these results when they are available, please e-mail the researcher at [REDACTED] to register your interest.

Thank you once again for all your time and assistance.

Appendix O – Case Study Protocol (Study 3)

Part A – Overview of case study objectives. Consider purpose, research questions, hypotheses, propositions, theoretical framework, and selection of cases.

Main Study Aims

- 1. Gain an in-depth understanding of the recommendations made within OPDP formulations; whether these are explicitly relevant to each case and are feasible to implement, whether recommendations are typically actioned or not, what the common barriers are to completing recommendations, and ultimately, if/how these recommendations have an impact on case outcomes.**
- 2. Compare these findings across cases; those cases with ‘positive’ outcomes, versus those cases with ‘negative’ outcomes. Any differences observed between these two sets of cases may provide useful information regarding how best to generate and implement formulation recommendations in the future.**

Study Rationale – The purpose of the study will be to examine *if* and *how* OPDP formulations can impact offender outcomes. The main focus of the analysis will be on the recommendations made within formulations (i.e., the quality of these, whether they are actioned and identifying any common barriers to action). Within Study 1a, it was found that the *number* and *type* of recommendations made within the 48 formulations studied did *not* significantly contribute to case outcomes. It was concluded that a deeper investigation was needed to fully understand this finding (i.e., whether this was due to recommendations not being completed). This investigation will provide a better understanding of the utility of formulation in the OPDP by identifying whether recommendations generated from these formulations are able to positively impact outcomes if actioned appropriately.

Method: Explanatory Case Study - Aims to answer ‘how’ or ‘why’ questions when the researcher has little control over occurrence of events. These type of case studies focus on phenomena within the contexts of real-life situations (Business research methodology). Yin (2006) states that exploratory case studies can be used to explore cause-effect relationships, and/or how events happen.

Theoretical Framework – A *multiple* case study will be utilised so that both literal and theoretical replications can be made (Yin, 2018, p.59). Companion cases may supplement findings or fill a gap in findings. This will be a ‘two tailed’ design whereby multiple cases of each extreme (i.e., extremely good and extremely bad outcomes) will be deliberately chosen. Conclusions resulting from ‘good’ cases can be further strengthened by showing the opposite in the ‘bad’ cases. Most multiple case studies are likely to be stronger than single case studies (Yin, 2018, p. 24). Goal is to build a general explanation that fits each case even though cases will vary in detail.

Case Selection - Cases will be chosen based on those that will most likely illuminate the research questions asked (Yin, 2018, p.26). A large number of candidates (i.e., >12) warrant a two-phased screening procedure (Yin, 2018). The first should consist of collecting relevant quantitative information about the entire pool from some archival source (i.e., databases or records; Yin, 2018). Once obtained, inclusion criteria (outlined below) should be used to reduce the number of candidates. *The goal is to reduce the number of candidates to 12 or fewer.*

- The number of cases to select should be based on the number of replications required for the study (both literal and theoretical). This is a discretionary choice, not a formulaic one (much like the 0.5 significance cut off point in statistical analysis). However, for a high degree of certainty, aim for 5 or 6 literal replications (Yin, 2018, p. 59).

- For two tailed designs, at least two individual cases should be examined within each subgroup so that theoretical replications *across* subgroups are complemented by literal replications *within* each subgroup (Yin, 2018). For two-tailed designs, *selecting suitable cases requires prior knowledge of the outcome of each case.*

- On the basis of the above guidance, a total of 10 cases will be selected for examination – five in the ‘positive outcome’ subgroup and five in the ‘negative outcome’ subgroup. It will be anticipated that cases within-subgroup will show similar results (literal replication), whereas cases between-subgroup will predict contrasting results (theoretical replication). If these replications are made, these 10 case studies in the aggregate will provide compelling support for the arguments made.

-To select these 10 cases, all cases in the file provided by the Research and Evaluation Officer will first be randomised (as this file is expected to contain a large amount of cases). Each case will then be assessed for suitability in line with the following inclusion criteria:

1. Must have a level 2 (L2) OPDP formulation on file (L2 is of interest in present study due to level of detail, number completed and ease of access)
2. L2 formulation must have been completed between 2018-2019 (to ensure these are current whilst avoiding any formulations that may have been unduly impacted by the effects of the COVID-19 outbreak.
3. L2 formulation must score highly (≥ 3) on both Audit Tool Standard 3 and Audit Tool Standard 4b (as the results of Study 1a suggested that scores on these standards may significantly contribute to outcomes. Reducing variability in these standards across the formulations selected will therefore reduce the chances of findings being influenced by this. Will also show (in the negative cases) what might go wrong even when these standards are high (i.e., barriers to completing recommendations).
4. Outcome (five positive and five negative over the 1-year period post formulation). ‘Negative’ outcome will be judged as a recall to prison. Positive will be judged as no breaches or warnings given during this period (outcomes from both extremes). The first five positive and five negative cases identified from the file (which fit all the above inclusion criteria) will be selected for examination.

Part B – Data collection procedures. Consider likely sources of data, ethics and consent, logistical considerations such as access, who to contact in case of issues.

Data Sources - nDelius and OASys will be used as main sources of data. nDelius contains contact report – all contacts with offender are recorded here. Important documents are also uploaded, including the formulation itself.

Types of Evidence to be Collected – Documentation evidence will be the primary type of evidence collected due to research restrictions in consideration of COVID-19 (Any one source of evidence can be the sole basis for an entire case study, Yin, 2018). Documentation evidence can include things such as emails, memoranda, letters, diaries, calendars, notes, reports of events, progress reports, formal evaluations etc. (Yin, 2018). Documentation evidence is stable and can be viewed repeatedly. Has not been created for purposes of case study. Can contain exact details of an event and can span long range of time. However, can contain unknown bias of author and must be carefully used – may not be literal recordings of events. Understand that documentation will have been written for a purpose other than the case study – may have other objectives and written for a different audience. Keep in mind what the objectives may be.

Access - Researcher has existing access to both nDelius and OASys via secured NPS laptop. In case of issues, Research and Evaluation Officer is available and happy to assist.

Ethics and Consent – Consent has been sought and granted by HMPPS National Research Committee and Swansea University Ethics Committee.

Part C – Protocol questions. Consider the specific questions the researcher should keep in mind during the course of each case study and likely sources of evidence that may assist in answering these questions.

General/Background Questions

1. What is the general background of the case? (i.e. offender age, offence history, historical presenting problems/issues) – [Sources of evidence: OASys record](#)
2. What was the index offence? – [Formulation, nDelius, OASys](#)
3. What was the outcome of the case? – [nDelius and OASys \(view all entries within 1-year post-formulation to identify any warnings given or breaches committed\)](#)

Case Events

4. What were the case proceedings in the 6 months before formulation? [View all nDelius and OASys entries and make notes in evidence database.](#)
5. What were the case proceedings in the 12 months after the formulation? [View all nDelius and OASys entries and make notes in evidence database.](#)

Formulation Content

6. When did the case consultation take place? [Look for the relevant nDelius entry.](#)
7. When was the formulation written? [Formulation](#)

8. What was the reason for consultation/formulation? **Formulation, examine entries recorded on nDelius before the consultation took place.**

9. What is the primary focus of the formulation? - **Formulation**

10. What types of information are included within the formulation? – **Formulation**

11. Does the formulation include all pertinent information? – **Cross-reference formulation with past OASys reports and nDelius records (looking for information relating to present risk and need).**

12. If not, what information is missing from the formulation? **Cross-reference formulation with past OASys reports and nDelius records (looking for information relating to present risk and need).**

13. Is any inaccurate or contradictory information included within the formulation? **Cross-reference formulation with past OASys reports and nDelius records.**

14. Does the formulation contain any new information not mentioned in other sources? **Cross-reference formulation with past OASys reports and nDelius records.**

Formulation Recommendations

15. How many recommendations are made within the formulation? – **Formulation**

16. Are the recommendations a logical product of the formulation? – **Formulation**

17. Are the recommendations specifically relevant to the case? – **Cross reference with knowledge of case collected within evidence database (from nDelius and OASys entries).**

18. Do the recommendations address all relevant areas of risk and need? – **Formulation, Cross reference with nDelius and OASys entries before formulation was written.**

19. How ‘actionable’ are the recommendations? (i.e. are they actions to complete or simply “things to consider”? Are they detailed or vague? Are there any immediate barriers to action?) – **Formulation**

20. What evidence is there that the recommendations made within the formulation were implemented or actioned? – **post-consultation/formulation nDelius entries (i.e. content of probation appointments, referrals made, correspondence with other staff or agencies about offender), OASys reports.**

21. How are these processes recorded? (i.e. documenting progress of recommendations, record of completed recommendations) – **nDelius entries, OASys reports.**

22. Are there any identifiable barriers that prevented action in each case? Were these barriers overcome? **nDelius entries, OASys reports.**

22. What differences are there in the relevance, feasibility and implementation of formulation recommendations between cases with positive versus negative outcomes? What might be the reasons for these differences? **Compare all evidence collected about relevance, feasibility and implementation.**

Impact of Consultation/Formulation

21. For recommendations that were carried out; Do formulation recommendations have an impact on case progression? If so, how? If not, why? – *order nDelius and OASys entries chronologically (use evidence database, flowcharts and visual aids to identify any changes that occurred based on formulation recommendations. Did these changes influence other outcomes?)*.

22. What evidence is there that the formulation recommendations influenced the OMs management of the offender? – *nDelius entries (comments made by OM that reference formulation content, changes in management style or focus pre versus post consultation/formulation)*.

24. What evidence is there of rival explanations? (i.e. factors external to the formulation that may be responsible for the findings identified) – *Actively look for these throughout data collection*.

25. Overall, how can/do formulation recommendations aid the progression of OPDP cases? How could this be maximised in future? – *Summation of all evidence. Development of logic model*.

Part D – Tentative plan for the case study report. Consider how the data will be formatted and presented.

Cross Case Analysis – The report will contain the findings of the final cross-case analysis. Evidence from single cases will be used to back up each finding. However, individual case studies will not be described in detail for the purposes of preserving anonymity. For each of the major questions (i.e., the relevance, feasibility, and utility of recommendations), findings from the cross-case analysis of cases with positive outcomes will be presented first before being compared with findings from the cross-cases analysis of cases with negative outcomes. After each comparison, low-level conclusions will be made. Then, after all sections have been presented, an overarching discussion and conclusion will bring all findings together.

Structure - The chapter will be structured in a Linear-Analytic style. This is a classic style which starts with identifying the problem at hand before discussing methods, data collection, analysis, findings, conclusions, and implications (Yin, 2018).

Data Analysis Method – Will use a combination of the following methods:

- *Explanation Building* – This involves gradually building an explanation of each case to explain ‘how’ and ‘why’ a certain outcome was achieved. Identifying causal sequences by first making a tentative conclusion and continuously updating this as new information is examined. This results in an all-encompassing explanation of the data.

- *Logic modelling* - Can be used to operationalise a complex chain of events over an extended period of time, trying to show how a complex activity, such as implementing a programme, takes place (Yin, 2018). Events are staged in repeated cause-effect-cause-effect patterns whereby an outcome (event) at an earlier stage can become the stimulus (causal event) for the next stage, in turn producing another outcome that can become yet another stimulus. It is useful to arrange the data in chronological order before using this technique as “the basic

sequence of a cause and its effect cannot be temporally inverted” when examining events chronologically (Yin, 2018, p.184).

Checking for Plausible Rivals - Throughout data collection, there will be a focus on *plausible* rivals. The typical hypothesis would be that the findings observed are the result of the activity that has been the main subject of study. The most direct rival hypothesis would be that the observed outcomes were in fact the result of some other influence and not the intervention or activity. Data collection should therefore include attempts to collect evidence about these plausible ‘other influences. To reject these plausible rivals, it must be satisfied that such threats cannot account for patterns across different case studies (p.177).

Appendix P: Example of Flowchart Used to Aid Impact Investigation (Study 3)

Case 3 - Impact Investigation

Recommendation 1

9 form recommendations -
 Ordered by priority
 - 7 highly relevant
 - 8 highly actionable

Recommendation

1. OM to share form with AP + discuss what worked well in engaging offender (as she is the only person he engages well with).

Longer-Term Outcomes

Engaging with housing leads to offender securing own tenancy. ^(13.02.19) Described by OM on home visit as 'bright and clean' with furniture. Engaging well with new OM and CPN

Action

→ Before AP release, OM calls allocated AP worker to share info and advises will send over form. (3/10/18)
 - When offender has problems
 → In first week of AP, OM describes in detail what works well to engage him. AP keyworker puts this into practice + spends a lot of time with offender. (31.10.18)

Initial outcome

→ AP staff are very knowledgeable about the offender's needs. Previously would only talk to OM, but after OM passes on useful techniques to engage him and what works well for him, engages much more with staff. Was feeling suicidal + anxious previously but now attending many AP activities (i.e. men's health group, newspaper group) (i.e. would not leave room). ^(9.11.18) (31.10.18)

Intermediate outcome

→ Able to engage with AP keyworker to complete mindfulness - 20.11.18 sessions. Monitoring suicidal ideation (linking in with recommendation 4). Offender said he is glad he can now 'open up to staff'. Engages with other services with staff support, such as housing. (14.12.18)

→ Link in with impact of additional recommendations to gain overall picture

Appendix Q: Case Formulation Training Questionnaire (Microsoft Word Version)

Demographic Information

1. Please indicate your gender:

Male

Female

2. Please indicate your age:

Sliding Scale (18-80)

3. How many years have you worked within your profession in total?

0-1 Year

1-2 Years

2-5 Years

5-10 Years

10-15 Years

15-20 Years

Over 20 Years

4. How many years have you worked within the Offender Personality Disorder Pathway?

0-1 Year

1-2 Years

2-5 Years

Over 5 Years

5. What is your current job title?

Text Box

6. Which area of the country do you work in?

Text Box

Participant Screening

7. In your own words, please provide a brief definition of case formulation:

Text Box

8. Do you write case formulations as part of your current job role?

Yes

No (If no, proceed to end of survey)

9. Approximately how many case formulations have you ever written?

Text Box

10. Approximately how many case formulations have you written when working with the Offender Personality Disorder Pathway?

Text Box

11. Which levels of case formulation do you write as part of your current role? (select all that apply)

Level 1

Level 2

Level 3

Case Formulation Training

12. Approximately how many hours of case formulation training have you ever received?

Sliding Scale (0-100 hours)

13. (If >0 hours selected for Q12) In which situations have you ever received case formulation training? (select all that apply)

It was part of my training to become a psychologist

It was part of my training to become a probation officer

It was part of the training for my current role

It was a standalone training course specifically about case formulation

It was part of the training for a specific therapy/intervention

It was part of the training for another tool (e.g. HCR-20)

Other

14. (If 'other' is selected for Q13) What other form of case formulation training have you received?

Text Box

15. (If >0 hours selected for Q12) What methods were used within the case formulation training you have ever received? (select all that apply)

Classroom style lectures

Group tasks

Structured role-play

Vignettes

Video footage

Expert demonstrations/benchmark formulations

Other

16. (If 'other' is selected for Q15) What other methods were used within this case formulation training?

Text Box

17. (If >0 hours selected for Q12) When did you last receive any form of case formulation training?

- Within the past 6 months
- Between 6-12 months ago
- Between 1-2 years ago
- Between 2-5 years ago
- More than 5 years ago

Satisfaction with Training

18. How satisfied are you with the *amount* of case formulation training you have ever received?

- Very Satisfied
- Somewhat Satisfied
- Somewhat Dissatisfied
- Very Dissatisfied

19. (If >0 hours selected for Q12) How satisfied are you with the *quality* of the case formulation training you have ever received?

- Very Satisfied
- Somewhat Satisfied
- Somewhat Dissatisfied
- Very Dissatisfied

20. How confident are you in your case formulation skills overall?

- Very Confident
- Somewhat Confident
- Somewhat Unconfident
- Very Unconfident

Case Formulation Assessment

21. How often are you assessed or given feedback on your case formulation skills? (e.g., in supervision)

- Weekly
- Monthly
- Quarterly
- Bi-Annually
- Annually
- Less often
- Never

22. (If any option other than 'never' is selected for Q21) What was the result of the most recent feedback or assessment of your case formulation skills?

- Excellent
- Good
- Fair
- Requires some improvement

23. Do you ever take specific cases to supervision or consultation meetings in order to help you with the construction of a formulation?

- Regularly
- Semi-Regularly
- Occasionally
- Never

24. (If any option other than 'never' selected for Q24) How do you usually decide which cases to take to supervision or consultation meetings?

Text Box

25. Do you ever use any of the following guidelines or checklists to assist you with writing case formulations? (select all that apply)

- Case and Risk Formulation Self Auditing Tool (OPDP Audit Tool)
- Case Formulation Quality Checklist-Revised (CFQC-R)
- A tool associated with a specific therapy model
- Other
- I do not use guidelines or checklists

26. (If 'other' selected for Q26) Which other case formulation guidelines or checklists do ever use to assist you with writing case formulations?

Text Box

27. (If any option other than 'I do not use guidelines or checklists' is selected for Q25) How often do you use guidelines or checklists to assist you with writing case formulations?

- Always
- Most of the time
- About half the time
- About a quarter of the time
- Occasionally

Training Others

28. Have you ever provided case formulation training to someone else?

- Yes, many times (10+ people)
- Yes, a moderate amount of times (5-9 people)
- Yes, a few times (1-4 people)
- No, never

29. (If any option other than 'No, never' selected for Q28) Who have you provided case formulation training to? (select all that apply)

- Psychologists working within the OPDP
- Probation officers working within the OPDP
- Other psychologists (not OPDP staff)
- Other probation officers (not OPDP staff)
- Healthcare staff
- Others

30. (If 'Others' selected for Q30) Who else have you provided case formulation training to?

Text Box

31. (If any option other than 'No, never' selected for Q28) In what situations have you provided case formulation training to someone else? (select all that apply)

- Formal on the job training (e.g., supervision)
- Informal on the job training (e.g., giving assistance)
- A standalone case formulation training programme
- As one part of a larger training programme
- Other

32. (If 'Other' is selected for Q31) In what 'other' situation have you provided case formulation training to someone else?

Text Box

33. (If any option other than 'no, never' selected for Q28) What guidance were you given on how to provide case formulation training to someone else? (select all that apply)

- Attended a course or programme about how to provide case formulation training to others
- Was given guidance from a supervisor or manager about how to provide case formulation training to others
- Received other form of guidance
- Received no guidance but am a recognised expert or authority in case formulation
- Received no guidance

34. (If 'Received other form of guidance' selected for Q33) What other form of guidance did you receive on how to provide case formulation training to someone else?

Text Box

Overall Opinions

35. In your opinion, what would make case formulation training more useful or effective?

Text Box

36. Do you have any further comments or suggestions to make in relation to case formulation training in general?

Text Box

37. In your opinion, do you think case formulation itself is effective or useful? (e.g., do you think it has a positive impact on outcomes?) Please briefly explain the reasoning behind your answer.

Text Box

38. Do you have any further comments or suggestions to make in relation to this questionnaire?

Text Box

Appendix R: Participant Information Sheet Study 4



You are being invited to take part in some important research. Before you decide whether or not to participate, please consider the following information

Am I eligible to take part?

You are eligible to take part in the research if you work within the Offender Personality Disorder Pathway and if you write case formulations as part of your role.

What does taking part involve?

Taking part simply involves completing this **15-minute** questionnaire. The questionnaire will ask about the case formulation training you have received in the past and your opinions about this training. You will also be invited to provide your name at the beginning of the questionnaire. Please read further for more information.

What is the purpose of the research?

The first purpose of the research is to examine the quality and quantity of the case formulation training received by each professional working within the OPDP. The second purpose of the research is to explore the impact of differences in this case formulation training on the quality and outcomes of case formulations.

Why should I take part?

The findings of this research may be used to improve case formulation training within the OPDP. This could lead to higher quality case formulations which in turn may positively impact offender outcomes. Your participation would therefore be of great value.

Is the questionnaire anonymous?

You will be invited to provide your name at the beginning of the questionnaire. With your consent, your name may be used by the researcher to link your questionnaire data with case formulations that you have written in the past. This will enable the researcher to explore the impact of differences in case formulation training on the quality and outcomes of case

formulations. If you do not wish to provide your name, you can complete the questionnaire anonymously.

Will my data be identifiable?

No. The research is concerned with group data only. Your personal data will remain completely confidential and secure. Only the researcher will be able to link questionnaire responses with case formulation data. After this link has been made, all personal information will be deleted. This means that your data will **not** be identifiable in any analyses, findings, or reports.

Is participation voluntary and what if I wish to later withdraw?

Your participation is entirely voluntary. You will be free to withdraw at any point during the questionnaire by simply exiting the webpage before submitting your answers. Please note however that because the data will be made anonymous soon after collection, it may not be possible to identify and remove your data after you submit your answers.

How will my data be stored and destroyed?

Personal data will be securely stored on an encrypted hard drive in a secured building at Swansea University. Personal data will be permanently deleted immediately after questionnaire responses and case formulation data have been linked together. The anonymised data will be kept until the research has been completed and all publications/disseminations relating to the data have been finalised. This is expected to be October 2021. At this point, the anonymised data will be destroyed.

What if I do not wish to provide my name?

Providing your name is the only way to allow the researcher to directly investigate the impact of differences in case formulation training on the quality and outcomes of case formulations. This means it would be extremely valuable to the research if you were able to provide it. If however you still **do not wish to provide your name**, you can answer the questionnaire **anonymously**. Simply proceed with the questionnaire as normal but select 'no' when asked if you are happy to provide your name.

How will the data be used?

The **anonymised** group data will form part of a PhD thesis and may be presented to interested parties and/or published in scientific journals and related media. Findings from this research may be used to make improvements to case formation training if needed.

Who is carrying out the research?

The research is being carried out by Victoria Wheable, a PhD researcher within the Department of Psychology at Swansea University. The research is supervised by Professor Jason Davies and Doctor Ruth Horry. The research has been approved by the HMPPS National Research Committee and Swansea University Ethics Committee.

What if I have other questions?

If you have further questions about this research, please do not hesitate to contact the researchers at [REDACTED]
or [REDACTED]

Appendix S: Participant Consent Form Study 4



Swansea University
Prifysgol Abertawe

- I confirm that I have read and understood the participant information sheet and have had the opportunity to contact the researchers to ask questions.
- I understand that my participation is entirely voluntary and that I am free to withdraw at any time without penalty by simply exiting the questionnaire **before** submitting my answers.
- I understand that it will not be possible to withdraw from the study **after** submitting my answers due to anonymisation of the data. If I wish to withdraw, I will need to do so before submitting my answers at the end of the questionnaire.
- I have been informed that the confidentiality of the information I provide will be safeguarded.
- I understand that I will be asked to provide my full name as part of the questionnaire, but that I also have the option to complete the questionnaire anonymously.
- I agree to take part in the research.

Please select 'Yes, I consent' if you agree with the statements provided. If you do not wish to take part in the research, please simply exit this page.

Yes, I consent

Appendix T: Study 4 Participant Case Formulation Definitions (Raw)

P1: The process of organising information about a person to create a meaningful narrative or picture of their experiences and how these have contributed to their thoughts, feelings, and behaviours.

P2: Consideration of a person's whole history from early experiences and attachments to later life events; that helps us understand problem development (including offending), and patterns of thinking, managing emotions, behaviours and relationships. This may then help us direct interventions or tailor approaches, to support a person in making change or to appropriately monitor or supervise.

P3: It is a live document that captured a client's history, current behaviours/problems and thinks about how they have come to where they are in life. It predicts future risk and gives recommendations to other workers involved.

P4: An understanding of how childhood experiences impacted on someone's personality functioning and risk

P5: A theory-based narrative looking to find links between an individual's history and their current difficulties, identifying maintaining factors and ways to move forwards.

P6: A narrative that helps to make sense of a person and their presentation, or a specific aspect of the person.

P7: Formulation can be considered a framework for integrating thinking and feeling and is centrally about personal meaning. Formulation can form a bridge between the professional and the service user as a way of creating an agreed way forward together. Formulation can also be an intervention in itself. Sometimes the act of clarifying someone's difficulties and in the process helping them to feel listened to, understood and accepted is enough to allow them to move forward again.

P8: Case formulation acts to offer a way of understanding an individuals' way of presenting (i.e. behaviour, thoughts, beliefs, attitudes) based on the various information available regarding the persons earlier experience and known responses to situations. A case formulation may aim to explain a single presenting problem or to understand a person more as a whole.

P9: A psychological driven explanation or narrative, pulling on theoretical ideas to explain the complexities of problem behaviours.

P10: A case formulation creates a theoretical understanding of a specific behaviour or overall presentation in a person through drawing links and building understanding from knowledge about their background, their past and current presentation, and experiences of them from others they come into contact with.

P11: Telling and explaining the current behaviour and life story of an offender

P12: A case formulation is a way of exploring/explaining why individuals may behave in the way they do, taking into account background information from their personal history

P13: A collaborative explanation of a client's behaviour between the staff and the client including the factors that made them vulnerable for the behaviour occurring what triggered that behaviour, what keeps the behaviour going and what can prevent the behaviour reoccurring.

P14: A way of using Psychological theory to link previous experiences with current presentations and make predictions regarding what may be supportive in the future

P15: Telling the story for how a certain aspect of someone's behaviour or presentation may have developed over time and become maintained, often through their use of available coping strategies.

P16: An understanding of a person's problems, and how difficulties relate to each other based on their childhood and life experiences. It's a hypothesis and subject to change or revision.

P17: A formulation is an understanding of a person based on the information we have about their life, their offending history, their personality and their risks and protective factors.

P18: A narrative of an individual's experiences, what has shaped them as a person, a hypothesis of why things are, an understanding of someone's life and difficulties, what are the triggers, the maintaining factors.

P19: A hypothesis about someone's problems and behaviour, how they have developed and what maintains them, to help inform intervention and treatment. Also helpful to understand what motivates and underpins offending behaviour.

P20: A narrative of a problem and use of psychological theories to understand this problem and inform meaningful risk management.

P21: A hypothesis using materials from someone's history and present difficulties that allows the development of a shared understanding of a problem

P22: Case formulation is a psychologically informed narrative of an individual's presenting problem/story/life course/experience to support the understanding of an individual's position/risks/needs and required treatment/intervention/approach going forwards.

P23: Gathering information on a person's life experiences which, when taken together within a recognised theoretical framework, allow for a hypothesis as to why they may behave the way they do.

P24: Making inferences about some of the links between someone's past experiences and how they have learnt to cope with these on the basis of their current patterns of thinking, emotions and behaviour. A formulation can then make some predictions about future behaviours and how to tailor any future interventions.

P25: A narrative understanding of presenting problems that uses psychological theory to link developmental experiences and patterns of behaviour, to provide an understanding, describe problems and strengths and inform future planning.

P26: A case formulation is a way of organising information which may come from a variety of sources to produce hypotheses (often using psychological theories) about the function of a particular problem such as a behaviour or way of relating to others and the world.

P27: It is a narrative that is guided by the formulation principles which is accessible and easy to follow from professionals across an array of disciplines. The narrative helps to explain to others the underlying mechanisms of a presenting behaviour. It identifies early experiences of the individual, the triggers, maintaining of the presenting problems with the hope of increasing staff understanding of the presenting behaviour to enable them to manage them in a more effective way. Overall, one main purpose of the formulation is to facilitate change.

P28: It is a way of piecing together past experiences and using them to gain a better understanding of and to make sense of a current difficulty (e.g. violent offending, voice hearing or behavioural presentation).

P29: A complete overview of the client and how their experiences throughout their lives have led to their current presentation

P30: An explanation or hypothesis of the origins of an individual's presentation and difficulties, and how these are maintained. Also offers suggestions for treatment that would best address these issues.

P31: A summary of key factors which impact on (e.g.) a problem behaviour or a person's presentation, and how these factors link together to maintain distress. Ideally developed in collaboration with the person and with multi-disciplinary input, always informed by psychological theory. Formulations can increase a person's insight into their problems, and guide interventions.

P32: The process we engage in to understand and explain complex behaviour so that we can respond (not react) with more compassion and thought, to enable us to effectively engage with those who have had difficult lives and to manage their risks properly by having a psychological understanding of the function and origins of problem/risky behaviours.

P33: A process whereby background information about the individual is used to make sense of their current presentation through application of a psychological framework

P34: Is a way of linking present problematic behaviour to past behaviour, identifying triggers, attachments and how these impact on the individual and their interpersonal relationships. It can identify poor coping mechanisms and how to support the individual moving forward.

P35: A compilation of relevant information that provides background history, current situation, highlights positive factors to carry forward, blockages or obstacles to progress and offers resolutions and potential pathways to progress people through the OPD Pathway. It is to encourage, support and motivate OM's to work more effectively with OPD clients

P36: Using all available information about a person's biological, social and psychological development to create coherent hypotheses which seek to explain their functioning.

P37: Narrative account to try to explain, understand and account for a person's relationships to others and their functioning in the context of their history and past experiences.

P38: A formulation is used to create a hypothesis about an offender's presentation and problems and to determine the most appropriate approach to working with them.

P39: A narrative that provides an explanation for a particular behaviour or aspect of functioning, that considers a range of contributory factors relating to the individual and their environment.

P40: A way of understanding someone's behaviour, difficulties and or presentation with the aim of being able to work with them differently and hopefully developing a positive relationship.

P41: A case formulation is a psychological understanding of the key features in someone's background that has contributed to how they view themselves, the world and others and how this links to their offending patterns and current behaviour being displayed in custody.

P42: A way of trying to understand an individual and the factors that have led them to develop into the person they are and make sense of how different aspects of their life have fitted together. Specifically in custody with a focus on risk and the way factors and aspects of their life, personality and presentation have impacted on their offending.

P43: A theoretically informed way of understanding and organising information about a person's development and life history such that meaning and explanation can be suggested for presenting problems. A case formulation should guide treatment or management for individuals in ways that are individually relevant for them.

P44: An understanding of a person, their presentation, a problem that they present with and a holistic look at where these problems may have come from, exploring their early life experiences.

P45: A psychological understanding of a person's difficulties

P46: A summary of biopsychosocial knowledge and theory, gained through a process of assessment, about one's presenting problems or presentation more generally. Usually with the aim of informing treatment and intervention and predicting response and outcome.

P47: A hypothesis about a person that helps us to better understand them

P48: Producing a narrative that attempts to explain underlying mechanisms of presenting problems.

P49: A formulation should expose the underlying mechanism of a person's presenting problem or problems in order to generate hypotheses to facilitate change. A formulation should link assessment findings to a detailed plan of action to alleviate the problems experienced.

P50: A psychological understanding of an individual's presenting difficulties underpinned by psychological theory.

P51: A psychological approach to understanding how a person has come to present with difficulties in their life. What has caused this to happen and what protective factors they have to desist from engaging in difficult behaviour in the future.

P52: A psychologically informed written assessment usually written in a collaborative capacity within OPDP

P53: A summary of an individual's core problems, reflecting how difficulties may relate to one another, how they may have developed and how they are maintained by drawing on psychological theories and principles. Formulation should indicate a plan of intervention and be open to revision and re-formulation.

P54: A psychological overview of the development and maintenance of offence-related behaviour.

P55: A narrative for understanding the development, function, and maintenance of a person's personality difficulties through the forming of hypothesis based on psychological theories.

Appendix U: Study 4 Academic Definitions of Case Formulation (Collected from the Literature on Forensic Case Formulation)

1. A formulation is an organisational framework for producing (generally) a narrative that explains the underlying mechanism of the presenting problem and proposes hypotheses regarding action to facilitate change **(NOMS & NHS, 2015b)**.
2. Case formulation is a theoretically based concise explanation or conceptualisation of the information obtained from diverse sources. It offers a hypothesis about the cause and nature of the presenting problems and provides a framework to developing the most suitable management or treatment approach **(NOMS & NHS, 2015b)**.
3. Case formulation is defined as a statement of understanding about the whole person, explaining and connecting many aspects of their life experiences to this point in time (likely to include personality, behaviour and risk). A problem formulation is defined as a statement of understanding explaining the underlying mechanism of a particular problem/offence as opposed to the whole person (likely to include a detailed analysis of behaviour, but less far reaching than a case formulation). A risk formulation is defined as a type of problem formulation where the focus is the potential for future harmful behaviour(s) towards self or others.' **(NOMS & NHS, 2015b)**.
4. Case formulation (CF) is a process that provides a psychological understanding of a person's difficulties and results in an intervention plan to address them **(Brown & Völlm, 2013)**.
5. Case formulation (CF) can be understood as a theoretically based conceptualisation of the salient information of a case in order to make explanatory inferences about causes and maintaining factors of target problems (Sim et al., 2005). CF is a practical tool that provides a framework to understand treatment needs and develop appropriate plans of intervention, facilitates predictions and aids communication between clinicians, and between clinicians, and their clients. It may be of particular relevance in complex cases (Tarrier, 2006) such as in those with severe personality disorder (PD) who present a risk of harm to others **(Brown & Völlm, 2013)**.
6. CF has thus far mainly been used by psychologists and psychiatrists to examine the 'causes, precipitants and maintaining factors' (Young, O'Carroll, & Rayner, 2008) of an individual's (offending) behaviour, and culminates in the production of a psychologically informed formulation of how an individual's treatment should proceed **(Brown & Völlm, 2016)**.
7. Case formulation in this context is a process that provides psychological understanding of a person's difficulties and ideally results in a treatment plan to resolve them (Hart et al., 2011). It is both a process and an outcome, in that it means that collation of information about the individual leads to the outcome of a narrative account of their risks and needs **(Brown et al., 2018)**.

8. Formulation is defined as an organization framework for producing a narrative that explains the underlying mechanism and proposed hypotheses regarding action to facilitate change (Hart & Logan, 2011). Information gathered (most commonly using structured professional judgement tools such as the HCR-20 (Version 3; Douglas, Hart, Webster, & Belfrage, 2013) and RSVP (Hart et al., 2003)) is synthesized so as to produce a narrative understanding or hypothesis of how and why factors contribute to the risk (**Hopton, Cree, Thompson, Jones, & Jones, 2018**).

9. Formulation has been defined as ‘a provisional explanation or hypothesis of how an individual comes to present with a certain disorder or circumstance at a particular point in time’ (Weerasekera, 1996, p. 4). It involves two main components, an explanation of the underlying mechanism of the presenting problem (i.e. how a problem developed and has been maintained), and hypotheses about change that guide the intervention. One of the primary aims within forensic work is to reduce the risk of reoffending. Thus, a good forensic formulation needs to identify suitable interventions to modify an individual risk to others, drawing on theory, research and evidence-based practice (**Knauer et al., 2017**)

10. Formulation explicitly links an individual’s past experience to their present and seeks to explain difficult behaviour as ways of coping (**Mapplebeck et al., 2017**).

11. Engagement with a process of formulating should lead to the generation of some tentative hypotheses about what has impacted upon an individual to lead them to behave and function in the way they do (**Mapplebeck et al., 2017**).

12. Case formulation may be defined as the organisation of information about the client and his or her problems to explain the origins and maintenance of those problems (Eells, 2007; Johnstone and Dallos, 2006). Case formulation should lead to a logical treatment plan. Case formulation has long been a core feature of a clinical psychological approach to understanding an individual’s problems and working to ameliorate them (Division of Clinical Psychology, 2011) (**McMurrin & Bruford, 2016**).

13. It provides a framework for conceptualising the developmental, triggering and maintaining factors of problems and a foundation for planning treatment. It is particularly useful in complex cases where a single treatment is insufficient and treatment failures and impaired responsivity may be anticipated (e.g. Hart et al., 2011). In forensic mental health settings, where such presentations are common, case formulation is also fundamental to risk assessment and management, and especially for making the conceptual link between personality disorder and violence (Logan and Johnstone, 2010) (**Minoudis et al., 2013**).

14. It is essentially a process of understanding individuals and their responses to their idiosyncratic lives. The key features of a case formulation are that it should be individualized and should summarize the service user’s core problems. It should draw on psychological theory to suggest how difficulties may relate to one another and how those problems are triggered and maintained. It should enable confident hypotheses about the drivers for behaviour and indicate a plan of intervention. All formulations should be open to revision and re-formulation (Johnstone and Dallos, 2013) (**Radcliffe, McMullan & Johnstone, 2017**).

15. These range from identifying triggers and patterns of problematic/offending behaviours, (level 1), to linking current problematic/offending behaviours to developmental background (level 2), to a more comprehensive understanding, anchored in psychological theory and directing more sophisticated interventions (level 3) (**Shaw et al., 2017**).

16. Case formulation (CF) integrates information about an individual to conceptualise the factors causing and maintaining their current difficulties. (**Völlm, 2014**).

17. Case formulation (CF) is a theoretically based conceptualisation of the ‘causes, precipitants, and maintaining influences of a person’s psychological, interpersonal and behavioural problems’ (Eells, 2001). CF facilitates the integration of diverse information about the client, provides a hypothesis about the causes of presenting problems, creates a mutual understanding between the client and the clinician, aids the communication between professionals and guides the selection of the most appropriate intervention. As a hypothesis, a formulation can be tested empirically and revised as new information becomes available (**Völlm, 2014**).

18. CF is a core clinical skill (e.g. British Psychological Society Professional Practice Board, 2008; Royal College of Psychiatrists, 2009a) and can be developed at a number of different levels (biological, psychological and social) and from a number of theoretical perspectives, such as medical, cognitive, behavioural, systemic and psychodynamic. Despite various approaches to CF, some broad categories of information are contained in most methods (e.g. Kuyken, 2006), including a definition of the problem and a desired alternative (therapy endpoint), precipitating factors (i.e. the proximal internal and external factors that trigger the problem), perpetuating factors (maintaining the problem), predisposing factors (i.e. distal internal and external factors that increase the individual’s vulnerability to the problem), protective factors (which help the individual to cope with or recover from the problem) and an explanatory model that links those factors to the individual’s problems (**Völlm, 2014**).

19. Wolpe and Turkat (1985) define it as; “A hypothesis that relates all of the presenting complaints to one another, explains why these difficulties have developed and provides predictions about the patient’s condition”. Denman (1994) extended this definition by describing a good case formulation as being embedded in theory, sensitive to the patient, and that the “essence” of the case should be captured. The hypotheses are drawn from psychological theory (Johnstone and Dallos, 2006), and its roots lie within the behavioural approach (Brunch, 1998) (**Whitton et al., 2016**).

20. Formulation is the process or product of gathering and integrating diverse information to develop a concise account of the nature and etiology of the problems affecting a person’s mental health to guide idiographic treatment design and other decision-making (**Hart, Sturmey, Logan & McMurrin, 2011**).

Appendix V: Participant Suggestions for Improving Case Formulation Training (Raw)

- P1. More focus on how to construct a formulation with the person so that it is meaningful for them.
- P2. To be more aware of the theory behind formulation writing (have recently applied for KUF module)
- P3. When a different template/model is used, half a day training on the new way of using it would be helpful
- P4. Real cases and written examples
- P5. The training I received was part of a wider CPD training event, and then further discussion in supervision. I have not been aware that specific formulation training exists. Attending that may have been helpful prior to completing formulations.
- P6. It depends on the audience, but with police and probation staff I have found that the language we use (even just the term formulation) seems to create anxiety. Therefore, finding ways to manage this and helping to increase staff confidence.
- P7. Formulating provides a space for thinking, and for processing feelings. It would be useful to have more practice as teams to formulate.
- P8. I find the 5-P approach is useful for the OM's and is well received - the formulation training could use more examples of how the hypotheses or formulatory statements could be incorporated into probation documents and used in real practice.
- P9. More regular and in supervision, peer supported, more feedback
- P10. Use of more interactive methods that allow for all preferences in terms of learning. Also, ensuring that people can bring real anonymised cases in order to more easily apply the training and embed learning.
- P11. Live cases and case studies
- P12. I think having more of it on a regular basis. I would also like it to involve a bench marking exercise to see how we arrive at the eventual conclusions
- P13. So everyone was working within the same standards and new what specific information to put into a formulation.
- P14. If there was training specific to the OPD Pathway with clear guidelines around what should be included in each level of formulation. Also if there was a clear process for sharing formulations across somebody's journey through the pathway and clear processes regarding how these should be amended and developed to reflect this journey
- P15. Using 'real' cases from the caseload of the attendees. Making case formulation relevant to their specific role as opposed to something standalone or 'extra' Drawing on attendees

existing strengths in case formulation (even where they might not be aware that they have these!)

P16. It can feel intimidating for people when its new to them. Looking at how a formulation applies to clinical practice so it is used more often rather than a one off piece of work

P17. Using a real-life case who people on the course are aware of. For example, using a real-life person on our unit when training staff on the unit.

P18. Different models

P19. Different perspectives and models

P20. Case examples

P21. I think there needs to be outcome that is seen as beneficial, such as how this can be used to inform Risk Assessment, how we can work more effectively with the person, how it can be used to identify treatment needs.

P22. More of it

P23. I am concerned that some models are over-used in formulations notably attachment theory. It would be useful to explore additional models but I acknowledge that if I worked for a health provider I would have had more supervision and training in this area. In my interim OPD role I have felt more comfortable as a forensic psychologist to undertake case broader consultations rather than focussing on formulation alone. I also think there are ethical issues about undertaking a case formulation without the subjects knowledge or consent.

P24. If workers are trained in how to make formulations more accessible, concise and with practical applications. This should be foundation training for all staff working within the OPD pathway.

P25. Making it more applicable with more standardised examples and refreshers

P26. Exploring different methods of organising information exploring when different psychological theories may be more useful in making hypotheses about certain problems/functions a general better understanding of the different psychological theories which could be used to help hypothesise a problem. I think more training needs to be given in general to forensic psychologists and on training routes to become a forensic psychologist. Further specific training on case formulation therefore would be useful.

P27. If they were put on or if they advertised the training on Kahootz as I have never seen an opportunity to attend case formulation training.

P28. Learning about different checklists/tools, so that the professional can decide which is the most appropriate for a case. Having a standardised training program would also be helpful to ensure consistency across services within the pathway.

P29. Unsure as I haven't had any specific training

P30. Case studies, expert demonstration, regular revisiting of formulations with colleagues

P31. Using case examples or self-formulation rather than theory/powerpoint exclusive training. Ensuring the language/terminology is accessible to staff of all disciplines. It can be highly valuable, but both the quality and quantity vary substantially.

P32. Feedback on formulations produced via proper mechanisms. My probation managers being trained in case formulation and having experience of this so that they are equipped to support me in developing my case formulation work. Or managers being trained in audit processes even if they do not do formulations themselves. Better supervisory processes across discipline so psychology/health empowered to feedback to probation, constructively, about developing formulation practice. Similarly psychology/health increasing understanding of the criminal justice context of how the formulation is received and understood by CJS stakeholders i.e. parole boards, prison officers, the subject of the formulation who generally has not been able to have any input. Consistent expectations, in practice (not in theory/the book), between OPD teams about what formulations need to contain as a minimum for each level. The KUF case formulation training is good but needs more focus on the psychological theories. These were covered minimally but are a key element of formulations.

P33. I'd like to better understand the differences between the three levels as this seems to vary.

P34. It being co-delivered with Probation Staff. I think sometimes it is too psychologically focused and not balanced with how to embed that knowledge into probation practice. The use of experts by experience would also be hugely beneficial as I think some OMs have concerns about how to have PD related discussions with their offenders and this would help support them.

P35. We are currently without a Psychologist, hence my needing to step in to cover. However, I am self taught having been provided with the 5P's process of case formulation. I would appreciate formal case formulation training to increase my understanding of the process and confidence in providing written formulations. I am heavily involved in case consultations and it seems to me that writing formulations is the natural progression.

P36. Formulation training is not routinely provided to staff when joining the OPDP team. It would be very helpful for a basic (L1?) package to be developed to deliver to Specialist OMs when they first start on the Pathway as, from experience, this has been the biggest development requirement. It may then be helpful to have some more detailed sessions over subsequent months based around specific therapeutic interventions - this would be helpful for both Specialist OM staff and psychologists.

P37. More available, part of regular supervision for staff

P38. Being offered training in general would be of some use. It would be useful to receive some training around different theoretical models i.e. schema theory

P39. Giving concrete examples to illustrate points; ensuring the purpose of formulation is clear; providing guidance on how to review and update formulations based on new information and observations

P40. Opportunity to have formulations that I have written audited or feedback provided.
Opportunity to watch case formulations in action.

P41. Sharing case formulations for complex cases and being able to bring cases and develop a formulation collectively. I think it would be helpful to have refresher training.

P42. More practical hands of experience of trying to develop formulations. Case examples/studies to watch and try to develop what we think. More exploration of how to write these up and the literature to support with this.

P43. Use of participants real case experiences/material - making it 'live' and relevant for practice. I think mixed methods approaches to training are particularly helpful. A way of embedding learning after a specific training event is helpful e.g learning sets, case formulation submissions and individualised feedback.

P44. I have undertaken specific training on the theoretical model we use in our area, as well as case formulation training, I feel like these need to be combined more. The formulation training I did was with participants who aren't regularly writing formulations; some hadn't even seen one. Most people in the room used a different theoretical model which was also slightly unhelpful. Whilst it's good to have awareness of the different models, it meant a big chunk of the training wasn't necessarily applicable to me. So despite being interesting, a lot of the training felt a bit generic, basic and not necessarily easy to apply to my day to day work. I feel like regular "refresher" training should be available. Like an annual event for those who are writing formulations regularly to go to share good practice, explore issues etc, dissect specific complex formulations etc.

P45. Examples and opportunity to try out the skills

P46. A combination of close working between experts and non-experts, clinical and peer supervision, and formal and informal training.

P47. Case vignettes/practice, seeing completed formulations, use of different psychological models to formulate

P48. More practical training.

P49. More recordings of formulation in practice; more differentiation of the different levels of formulation (1, 2 and 3), and more clarity about how case formulation differs from risk formulation, and how risk formulation differs from problem formulation more generally.

P50. Use of 'gold standard' level three examples. Being provided with the opportunity to write a case formulation and then provided with feedback on this. Greater provision of training around, and discussion of, level 3 formulations.

P51. Case studies and examples of gold standard formulations. Make it as interactive as possible please

P52. As part of a rolling programme of training. It would be welcomed and useful to have such training

P53. Case examples and formulations that are based in psychological theory and evidence. Formulations must be shown to add value.

P54. Use of real life case examples and videos. There is little formal OPDP training on this, as it tends to be "on the job" training. A formal training programme would be useful.

P55. In my opinion - Training should be ongoing - Service User experience/perspective of formulation included - The content of training needs to be improved - content is currently based on quality standards which in my opinion do not acknowledge: - the dynamic nature of formulating (tends to view it more as a static document rather than a process) - the need for service users to be able to understand and own the formulation (tends to be written in language that the service user is unlikely to understand)

Appendix W: Study 4 Participant Opinions on the Usefulness and Effectiveness of Case Formulation (Raw)

P1. I think it is useful, but that its effectiveness might be overestimated in the PD pathway, particularly a 5 p's style of formulation which doesn't have as much room to explore the links.

P2. Yes, so long as it is tailored for the person/client group that will read it (and in event of subject reading it) to help understand why a person may have developed certain ways of being; and to identify intervention options

P3. It gives a space to understand clients at much deeper level and helps the therapeutic relationship by helping clients understand themselves more.

P4. Yes. It is really useful in clinical practice and all service users I have worked with found the process helpful and thought provoking

P5. Yes. In my experience it helps an individual and the team around them understand more about them and their difficulties/presentation.

P6. Yes - I regularly use it with probation staff to help make sense of offenders' difficulties and I feel it can help increase staff understanding and empathy towards the service user and helps ensure approaches and pathway plans are specific to the individual rather than generic. I believe it can improve relationships and can also help the service users themselves to help understand their behaviour and therefore provide a way of hope around ways to address it.

P7. Creating shared understandings with highly distressed service users, doing so sensitively and reflectively, while drawing on a large basis of theory and clinical experience and framing it in a way that is useful to them and to the professionals who support them, is one of the most challenging aspects of our work. However, the act of clarifying someone's difficulties and in the process helping them to feel listened to, understood and accepted is enough to allow them to move forward again.

P8. I feel that CF is useful during the consultation - we often see OM's develop new perspectives of their case during the discussion and give immediate feedback that they had not thought about things that way before. For the OM's who choose to engage in the pathway, there seems to be a genuine feeling of being supported and seeking help and using the space not just for formulation but also for supervision and to validate their current practice.

P9. If it is used and updated regularly.

P10. Yes - it can really help someone to think outside of the box and look at the unique individual to consider pertinent needs, approaches and pathways. This can often help them to feel a little less 'stuck' with a case. It can also help professionals to understand the whole person rather than, for example, focusing upon their horror at an offence and responding emotionally to that individual. Additionally, it can help someone to consider the need for them to get their own support with cases, etc., connecting with how difficult what they deal with can be.

P11. Yes, it is a fantastic way for non-clinical staff to see reasons and patterns in behaviour.

P12. I enjoyed my training as it helped me shorten the length of my write ups, helping me to provide a more succinct summary and allowing the OM to hold the information in mind rather than feel overloaded.

P13. Although I am aware there is limited evidence supporting the use of formulations on treatment outcomes, in practice I feel that it helps staff and clients to understand themselves in a manner in which they often have not done before. It helps focus treatment on individual needs rather than what comes out of a questionnaire.

P14. I think it definitely has a positive impact; it helps the service user to spend time thinking about some of their behaviours and start to understand themselves a little more (therefore possibly starting to reduce feeling as though they are controlled by their emotions, and the helplessness that comes with that) and it also supported staff when developing relationships with people and again feeling as though they better understand different presentations, possible feeling more equipped when working with them. I think there are, however, ethical considerations to be made when using case formulation solely as an intervention - I think there needs to be plans in place to support someone to manage their difficulties as opposed to simply identifying them. If you identify someone's coping strategies as being 'bad' but don't offer any alternatives then that can increase feelings of vulnerability and helplessness.

P15. Yes, I think it helps practitioners to empathise with their clients, and can inform robust and responsive risk assessment, risk management and treatment plans. However, I think it is important to emphasise that they are only tentative hypotheses that should be regularly reviewed and subject to change, particularly where the client has had little or no input into its creation

P16. Yes as it allows us to look at other perspectives, be objective, and show compassion and understanding of case

P17. Yes, particularly on our unit which is a PIPE in a custodial setting

P18. Useful in terms of empowerment for the individual, that everyone can buy into, no wrong or right, containing no blame.

P19. Yes, I think it is very useful in helping staff to work effectively with the individual and also helping to inform appropriate interventions. Working within the OPD pathway, the formulations have been helpful for both offender management staff and AP staff to use to help understand behaviour and consider approaches to working with the individual. I think this has helped staff to manage boundaries more effectively, avoid getting pulled in to perpetuate unhelpful patterns, improving relationships, engagement and potentially reducing recall numbers and further offending.

P20. Yes, useful to consider psychological approaches to risk management and identifying appropriate interventions.

P21. I think it engenders empathy and is a useful way of organising information into easily accessible chunks. It can be helpful in developing a more therapeutic relationship which in

turn can impact on other relationships the client has. I am not yet convinced that a Level 3 formulation is any more effective than a Level 2 formulation

P22. Yes.. helps promote thinking, reduces anxiety, positive outcome for service user

P23. I think it is useful in assisting probation staff to understand more about the psychological functioning of people they work with. It remains to be seen through evaluation studies what the behavioural impact of the approach is.

P24. I believe CF to be useful as I have received feedback on how a formulation can useful change the direction in which a service-user is being managed and the type of intervention being offered. Without CF workers can tend to rely upon common-sense approaches which may include logical errors about the needs of that individual. Alternatively, workers may make recommendations on the basis of offending types or diagnoses.

P25. Yes. It helps people to think, provides a theoretical underpinning and gives a reflective place to go back to in times of high anxiety

P26. Yes if written in a way which is easily understood and free from psychological jargon. I think formulations which are written as a narrative and which are clear in terms of the questions / problem it is seeking to hypothesize are most useful. I really think the usefulness or effectiveness of the case formulation depends on its quality. Case formulations which are written in collaboration with service users are also more useful I think.

P27. Yes. I believe it is helpful to both staff and service users which I have had verbal confirmation from both suggesting this is the case.

P28. Yes, I think it is helpful as a way of understanding a difficulty, particularly a behavioural presentation. This can then be disseminated to other professionals involved in the individual's case. It can also be useful for an individual to gain a better understanding of how their past experiences link to their current presentation. I have also heard from service users that it is a way of them feeling listened to, which may aid the therapeutic relationship.

P29. It gives very good in depth knowledge of the client so I think it is positive

P30. Yes. It helps the individual have a greater understanding of their own behaviour, feel less judged/labelled, and consequently more motivated/hopeful to address issues within treatment. Also helps teams to have a shared understanding to be able to work through the challenges, and have greater empathy

P31. Yes - it is at the core of our treatment model (individualised, formulation driven intervention).

P32. It is my opinion that it is. It allows practitioners to put the information together in a coherent way that makes sense of the person as a whole, rather than just detailed analysis of their worst offences without a meaningful context. It supports a more thoughtful and compassionate approach, maintaining a clear focus on risk, public protection and duties to safeguard, whilst also remembering that supporting people to change and learn to function better also meets those aims (and is the long term solution compared to the short term, high

cost, defensive, control options). It provides a legitimate reason to care and provide some support to individuals who really need it. This had been stripped from practice in some ways, as 'resources follow risk' and therefore need and diversity were side-lined as it they were not all part of the same overall make-up of that person and their problems.

P33. I find it most useful when it helps to make sense of behaviours that can otherwise seem confusing. I also think it is particularly useful when deciding which interventions might most effectively meet an individual's needs. I have definitely found it to be effective in supporting individuals to access services in the PD pathway.

P34. It is extremely useful and within our area case formulations have proved to be very useful in helping 'stuck' cases and improving relationships with OMs and providing a balanced view of an offender.

P35. I believe that case formulations provide clear and concise information to OMs for progressing OPD clients through the appropriate pathways. The process assists OMs to gain confidence in working with OPD clients, whilst increasing their knowledge/understanding of personality types, difficulties and behaviours. It also assists them to increase their knowledge of resources and pathways that they can utilise to support the clients to progress. It is my belief that Case Formulation is instrumental in the effective management of service users experiencing personality difficulties.

P36. Yes. I think it is an underused tool that is also slightly misunderstood. In this climate where 'tasks' are seen as the primary objective, the concept of understanding our cases seems to have been lost. I think that a basic understanding or hypothesis is essential in performing subsequent tasks with each offender. It would be helpful to shift the understanding of formulations so that OMs regard it as a process of understanding on which all subsequent actions can be based, rather than a belief that it will solve problems in and of itself.

P37. Yes, the most useful way of understanding a person's actions, breaks away from illness model, accessible for all professionals and the client

P38. Very useful - it helps to get things clear in your mind and allows time for reflective practice. It provides reassurance as to the approach you should use with an offender.

P39. Yes - it helps massively in a wide range of situations. Useful for helping understand problematic behaviour we might see in service users or in colleagues - helps reduce our potentially unhelpful emotional response to others if we can understand the function of others' problematic behaviour.

P40. I do think that case formulation can help people to think differently about clients however it is not clear how this learning is retained.

P41. Yes, I have found the men I have worked with have found level 3 formulations very helpful in developing their understanding of their own behaviour and has helped them to move forward in a positive way with regards to their risk reduction and future management.

P42. Yes - I think that this can often help individuals to better understand themselves, their behaviour and the problems that they are experiencing. It can also help to focus and direct treatment more effectively.

P43. I believe it definitely can but maintenance and application of learning post training "events" is harder to achieve

P44. I think case formulations are extremely helpful if they are led by what the OMs need. I also think they need to feel accessible in terms of length and language. For me, use of bullet points and use of underlining can be really effective as opposed to lengthy, wordy paragraphs. We also need formulations to be read and utilised and therefore I feel we need strong management buy in. For example, SPOs should be asking about formulations within supervision and be exploring how these are being used (or not).

P45. Yes, but evidence would suggest that it is most effective if people receive ongoing support with this

P46. Absolutely, it underpins our understanding of one's presenting issues, and it provides the basis of risk assessment, intervention, and response predictions.

P47. Yes. It helps improve understanding of clients, increases empathy and results in more positive and compassionate approaches to working with clients.

P48. I believe case formulation is effective and useful. I have had positive feedback from those that I have worked with expressing that they have felt benefit from the case consultation and formulation and feel they may understand the individual that they're working with more.

P49. Yes. Formulation goes beyond the person's problems and put them in the context of the person him or herself. Formulation contextualizes the issues being faced by the person so that interventions of any kind thereafter are meaningful to the whole person rather than just one aspect of how they are at the time.

P50. Yes, definitely.

P51. Yes, it is useful for the offender and OMs who I am providing consultancy for. It helps understanding, allows empathy and encourages them to forge relationships with their clients. For an offender it can be a lightbulb moment that helps them think about how they have arrived in a certain situation.

P52. Yes, very useful and valued by OMs. Practical information and working collaboratively are key. They need to be succinct and in the vast majority of cases short.

P53. I think it offers a way of pulling information together and making a coherent narrative. Basing it in psychological knowledge adds depth and meaning.

P54. In some cases it does, as OMs are often too busy to have the time to take a "step back" and think about things from a psychological perspective. I've had several OMs report back that it's been helpful for that exact reason and has allowed them to work with the offender in

a more productive way. Other people can be less psychologically minded so less inclined to take the formulation on board.

P55. I find case formulations which have been developed only from case records and consultation with the Offender Manager as having very limited use. When you share these formulations with the service user they often find it difficult to own as they were not involved in the process. I find formulations which have been developed with the service user over a number of sessions as very useful in that the service user is likely to accept the formulation and use it as a basis for their pathway plan. The exception is problem formulations where the Offender Manager has a particular problem with managing a case which cannot be shared with the service user for example staff being split or the service user refusing to engage.