A Randomised Control Trial evaluating The GUIDE Cymru: All Wales mental health literacy in Year 9 children in Wales.

by

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Abstract

Adolescent and young people's mental health problems are increasingly prevalent within the United Kingdom (UK), and a lack of mental health knowledge can often lead to negative stereotypes of mental illness. This thesis aims to contribute to the expanding field of Mental Health Literacy (MHL) among adolescents and young people. Chapter 1 outlined the prevalence of mental health problems during adolescence and the need for early intervention. Chapter 2 reviews mental health stigma and details the importance of stigma reduction through improving knowledge and MHL. Chapter 3 introduces the development of a new measure of MHL, known as the Knowledge and Attitudes to Mental Health Scale (KAMHS). Chapter 4 investigates associations between mental health and MHL constructs and assesses the importance of MHL as more than just mental health knowledge, extending to the broader construct of help-seeking efficacy, stigma, and coping mechanisms. Chapter 5 outlines a pilot study in the evaluation of the Guide Cymru through a pre and post-test design. Moreover, Chapter 6 illustrates a cluster randomised control trial used to evaluate a The Guide Cymru within secondary schools across Wales. Chapter 7 reviews the research presented throughout the thesis, considering the broader implications of the findings and recommendations for future research. This thesis, therefore, contributes to the field of MHL by demonstrating that providing teachers with appropriate resources and training to deliver the Guide Cymru can significantly improve the MHL of pupils. The findings provide valuable insights into future research supporting child and adolescent mental health.

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.

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Statement 1

This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used, the extent and nature of the correction is clearly marked in a footnote(s).

Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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All research conducted within this thesis obtained appropriate ethical approval from Swansea University and the NHS. All ethical procedures were followed throughout the research.

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ABBREVIATIONS

Abbreviation	Meaning
AFC	Action for Children
ADHD	Attention Deficit Hyperactivity Disorder
A	Agree
CAMHS	Children and Adolescent Mental Health Services
CFA	Confirmatory Factor Analysis
COVID-19	Coronavirus Disease 2019
CFI	Comparative Fit Index
DF	Definitely False
DT	Definitely True
DWLS	Diagonally Weighted Least Squares
D	Disagree
DK	Don't Know
EFA	Exploratory Factor Analysis
HRQOL	Health-Related Quality of Life
ICC	Intraclass Correlation Coefficient
KMO	Kaiser-Meyer-Olkin
KAMHS	Knowledge and Attitudes towards Mental Health Scale
M	Mean
MHFA	Mental Health First Aid
MHL	Mental Health Literacy
PedsQL	Pediatric Quality of Life Inventory
PF	Possibly False

PT	Possibly True
RCT	Randomised Controlled Trial
SD	Standard Deviation
SE	Standard Error
SPSS	Statistical Package for the Social Sciences
SDQ	Strengths and Difficulties Questionnaire
SA	Strongly Agree
SD	Strongly Disagree
DSM	The Diagnostic and Statistical Manual of Mental Disorders
ICD	The International Classification of Diseases
TLI	Tucker Lewis Index
UK	United Kingdom
V1	Version 1
V2	Version 2
V3	Version 3
US	United States
WHO	World Health Organisation

Glossary of Key Terms

Term	Definition
Adolescence	The transitional period between childhood and adulthood which focuses on growth and development.
Avoidant Coping	Both cognitive and behavioural efforts to avoid a situation or stressful demand that results in avoiding dealing with the demand. Avoiding, denying and minimising are all examples of ways of avoiding the stressor.
COVID-19 Pandemic	An infectious disease caused by the severe respiratory syndrome SARS-CoV-2 virus
Good mental health	The ability to cope and function well with normal everyday stresses, a good state of well-being.
Help-seeking	The action of seeking for or requesting appropriate help from others
Mental Health	An individual's condition relating to one's cognitive, behavioural and psychological well-being.
Mental Health Disorder	A diagnosable condition that can affect your thinking, feeling, mood, and behaviour, which can be occasional or long-lasting (chronic).
Multifaceted measure	A measure which contains many different elements and subscales as opposed to a one-dimensional, single measurement.
Public Stigma	Negative attitudes and thoughts that others have about mental health disorders.
Quality of Life	An individual's perception of their own standard of health and happiness experienced.
Randomised Controlled Trial	An experimental design which involves randomising participants into two groups (Active and Control) in order to measure the effectiveness of a new intervention or treatment. As a result, randomising reduces bias within the experimental design.

Secondary school	Pupils attend secondary education between the ages of 12 and 16 years.
Self-stigma	Negative attitudes, including internalised shame, that people with mental illness have about their own mental health condition.
Social desirability	The tendency for an individual to present themselves in a positive light. Within survey methodology, this is the tendency to answer questions in a manner that will be viewed favourably by others.
Vignette	A short description of a scenario or sketch.

Dissemination of Research

Publications

Simkiss, N. J., Gray, N. S., Malone, G., Kemp, A., & Snowden, R. J. (2020). Improving mental health literacy in year 9 high school children across Wales: a protocol for a randomised control treatment trial (RCT) of a mental health literacy programme across an entire country. *BMC Public Health*, *20*(1), 1-8.- **Protocol for Chapter 6.**

Simkiss, N. J., Gray, N. S., Dunne, C., & Snowden, R. J. (2021). Development and psychometric properties of the Knowledge and Attitudes to Mental Health Scales (KAMHS): a psychometric measure of mental health literacy in children and adolescents. *BMC Pediatrics*, *21*(1), 1-10.- **Chapter 3: Development of the KAMHS**

Simkiss, N. J., Gray, N. S., Kemp, A., Dunne, C., & Snowden, R. J. (2021). A Randomised Controlled Trial evaluating the Guide Cymru Mental Health Literacy intervention programme in Year 9 (age 13-14) school pupils in Wales. *BMC Public Health*, *23*(1), 1062. **Chapter 6: Randomised Controlled Trial.**

Prizes and Awards

2018 First prize for the best oral presentation at the Swansea University Human and Health Sciences Conference.

CONTENTS

Chapter 1: An overview of the prevalence of mental health problems during adolescence and the need for early intervention through an introduction to the Guide Cymru

Defining Mental Health

Mental health plays an integral role in health. "There is no health without mental health" is a globally accepted principle (World Health Organisation, 2013, p.6). This definition recognises that mental health promotion is an integral component of health promotion. Thus, to attain health, improvement of mental health is essential (Sturgeon, 2006). The Mental Health Foundation (2016) compiled attributes associated with mental health, including; the ability to learn; the ability to express and manage a range of positive and negative emotions; the ability to form and maintain good relationships, and the ability to cope. Neither mental nor physical health can exist alone; recognising health as a state of balance between the self, others, and the environment can help us understand and improve mental health (World Health Organisation, 2001).

A significant obstacle for integrating mental health initiatives into global health programmes is the lack of consensus on a clear definition of mental health (Galderisi et al., 2015; Manwell et al., 2015). Traditionally, the field of mental health has focused on the medical model, seeking to identify symptoms and treat illnesses and viewing health as the absence of illness (Antaramian et al., 2010). Moreover, challenges to the medical model have emerged with increasing recognition that the absence of mental illness does not equate to mental health (Keyes, 2005). The World Health Organisation (2004) defines *mental health* as "a state of well-being in which the individual realises his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (p.12). This definition of mental health moves away from viewing mental health as a state of absence of mental illness and identifies well-being

and functioning as critical factors for mental health. The present thesis will adopt the definition from the WHO (2004) that understands mental health as a state of well-being. Furthermore, the present thesis adopts the definition of Mental Health Literacy as the knowledge, understanding and beliefs surrounding mental health disorders that ultimately aid in managing, preventing and recognising mental health disorders (Jorm et al. 1997).

Different terminologies such as mental disorder, mental illness and mental distress are commonly used (Manderscheid et al., 2013). Throughout this thesis, mental disorder and mental illness will be used interchangeably. As it has not yet been possible to categorise mental disorders using pathology or aetiology, mental disorders have been systematised into syndromes based on common signs and symptoms (Clark et al., 2017). The most widely used diagnostic tools for diagnosing a mental disorder are The American Psychiatric Association's, Diagnostic and Statistical Manual of Mental Disorders (DSM), now in its fifth edition (World Health Association, 2013) and the International Statistical Classification of Diseases and Related Health Problems (ICD) now in its 11th revision. These are handbooks widely used by clinicians and psychiatrists to diagnose mental disorders. The DSM and ICD contain descriptions, symptoms and criteria for diagnosing mental disorders. Individuals who fit the criteria for a DSM/ICD mental disorder may have the presence of mental illness plus the absence of mental health (Keyes, 2002).

Prevalence of Mental Health Disorders in the UK

The prevalence of mental disorders is high in the UK, with 1 in 4 people experiencing a mental disorder sometime in their life (Mental Health Taskforce, 2016). A recent follow-up survey in 2022, found that 18% of children aged between 7 and 16 years in England had a probable mental health disorder (Newlove-Delgado et al., 2022). Mental health problems are among the leading causes of the overall disease burden worldwide (Vos et al., 2015). People with mental disorders have elevated mortality compared to the general population, as research has found a much higher burden of mortality at both individual and population levels

(Walker et al., 2015). In particular, mental disorders account for a large proportion of young people's disease burden in all societies (Patel et al., 2007).

Mental health problems can affect anyone at any time. However, mental health problems among adolescents worldwide have increased significantly (Collishaw, 2015). In 2017, 15.3% of adolescents aged 11-19 in England were found to have at least one mental disorder. By July 2020, a follow-up survey revealed one in six young people (17.6%) aged 11–16 years were identified as having a probable mental disorder (Early Intervention Foundation, 2020). This increase is becoming a significant concern in the UK (Pitchforth et al., 2019).

Demand for counselling services and referrals to specialist Child and Adolescent Mental Health Services (CAMHS) has increased significantly over the years (Hagell et al., 2013). Deighton et al. (2019) analysed a large-scale community-based sample of 28,160 adolescents to explore the prevalence of mental health problems in England. Pupils completed the child self-report Strengths and Difficulties Questionnaire (SDQ) (Goodman et al. 1998), which measures mental health difficulties along four problem subscales (emotional symptoms, conduct problems, peer-relationship problems and hyperactivity/inattention problems) and one subscale to measure strengths (prosocial behaviours). These five scales have thresholds for 'borderline' and 'abnormal' scores, which indicate an elevated and high risk of experiencing mental health problems. They found the scale of mental health problems in children across many schools in England is much larger than previous estimates: 18.4% scored above the abnormal threshold for emotional symptoms, 18.5% for conduct problems, 25.3% for hyperactivity and 7.3% for peer-relationship problems.

Pitchforth et al. (2019) investigated mental health trends among children and young people in national health surveys from England, Scotland and Wales. Data were analysed from 140, 830 participants aged between 4 and 24 years in 36 national surveys between

1995–2014. They found that across all participants, long-standing mental health conditions increased in England (0.8–4.8%), Scotland (2.3–6.0%) and Wales (2.6–4.1%). These findings are consistent with the previous evidence of rising mental health diagnoses among children and young people in recent decades (Collishaw, 2015; Fombonne, 1998). This research demonstrates an ongoing increased prevalence of mental health disorders among adolescents in the UK.

Onset of mental health disorders

Identifying the age of onset of different mental disorders is important. However, it can be difficult as periods of low mood and occasional elation are common (Roberts, 2013). Although it is internationally agreed that the diagnostic criteria for depression during adolescence is considered the same as for adults, irritability however is more of a prominent feature. Moreover, it has been shown that adult mental health problems often begin during adolescence (Jones, 2013). Therefore, it can be reasonably argued that to understand adult mental health fully, we need to clearly understand the period of development during adolescence.

Kessler et al. (2005) identified that half of all mental health disorders started by the age of 14 years. More specifically, anxiety disorders (such as phobias and separation anxiety) and impulse-control disorders begin in childhood (median age range 7 to 14 years), whereas other anxiety disorders (such as panic, generalized anxiety and post-traumatic stress disorder), substance disorders and mood disorders begin later in adolescence and young adulthood (Kessler et al., 2007). The age-of-onset distribution of substance use disorders is consistent across countries in that few onsets occur prior to the mid-teens, and cumulative increase in onset is rapid in adolescence and early adulthood (Kessler et al., 2007). However, the range and peak ages at onset for mental disorders are not fully established. Solmi et al. (2022) conducted a large-scale global epidemiological meta-analysis to investigate the age of onset of ICD/DSM mental disorders. They identified that the global onset of the first mental

disorder occurs in one-third of individuals before the age of 14. The peak age at onset was between 14.5 and 18 years across all mental disorders. These findings strongly inform the importance of introducing early intervention and appropriate preventive approaches during this age period.

Period of Adolescence

There is an increasing concern about young people's mental health. Defining adolescence is often a challenge as the adolescent period is captured differently by differing cultures (Chen & Farruggia, 2002). Adolescence is generally recognised as a stage of human development between childhood and adulthood, incorporating psychological, social, and physical changes (Lerner & Steinberg, 2004). However, whilst there are many commonalities across cultures for this stage, there are many differences, such as the length of adolescence and behavioural expectations (Ember, Pitek, & Ringen, 2017). The World Health Organisation (2015) defines adolescence as the age period of 10 to 19 years. This thesis adopts the definition of adolescence of the WHO, ages 10-19 years, with early adolescence 10 to 13, middle 14 to 16 and late 17 to 19 years. Providing this clear age range allows cross-cultural and interdisciplinary comparisons of adolescent data. However, given the substantial changes in behaviour and identity during adolescence makes distinguishing normal development from mental illness difficult (Michaud & Fombonne, 2005; Paruk & Karim, 2016).

Adolescence is a period of physical, emotional, and social transformation (Blakemore, 2012) and increased emotional reactivity (Hare et al., 2008). Although most adolescents develop into healthy adults, the period of adolescence confers significant vulnerability to mental health problems (Blakemore, 2019). Adolescence is a critical period for developing social and emotional habits, which are important for mental health and well-being (World Health Organisation, 2020). During adolescence, there are significant changes in both hormones and the body, as for example, increases in oestrogen and testosterone (Blakemore,

2019). At the same time as the body is changing, so is the brain and ultimately this coincides with an increase in mental health problems (Blakemore, 2019). Along with such bodily changes, there are also significant changes in the social environment. During this particular period, there is often a heightened salience of relationships with peers (Crosnoe & Johnson, 2011). As a consequence, a lack of friendships during this period is often associated with increased depression and a reduction in self-worth (Prinstein & Dodge, 2008). These changes in the social environment can be considered both positive and negative but can also become stressful with emerging independence and separation from the family unit (Sanci, Webb & Hocking, 2018).

It is apparent that adolescence is a period of personal and social identity formation (Erikson, 1950). Much of this formation, is now highly reliant upon social media. Social media is integral aspect of the lives of adolescents and the association between social media usage and mental health is of a particular concern to practitioners (O'Reilly, 2020). Through focus groups with adolescents aged between 11 and 18 years, O'Reilly (2020) addressed the perspectives of adolescents themselves on the relationship between mental health and social media. They found that a clear balance between positive and negative impacts of social media on mental health through the benefits of social media on well-being but also the negative impact low self-esteem and social distancing.

During the period of adolescence, research has begun to demonstrate the negative effects of chronic stress exposure on the emotionality of individuals (Romeo, 2017). As it is known, adolescence is a period of increased biological stress reactivity as compared to childhood and such vulnerability is likely to increase the prevalence of both anxiety and behavioural disorders (Merikangas et al., 2010). In line with this, recent research by Thorsen et al. (2022) argued that adolescents are reporting an increase in symptoms of anxiety and depression and an increase in perceived stress is a plausible explanation for this.

Mental health problems during adolescence can appear in different forms, for example, internalising and externalising problems. They are distinguished as negative behaviours directed internally (e.g., anxiety and depression) or externally into the environment (e.g., aggression and hyperactivity). Internalising problems are emotional problems, and externalising problems are behavioural (Gustafsson et al., 2010). Many studies have evidenced gender differences in psychopathology as females report more internalising symptoms and males generally report more externalising symptoms (Hoffmann et al., 2004). This gender difference emerges in adolescence and continues into adulthood (Nolen-Hoeksema & Girgus, 1994). Although females report more internalising symptoms and males report externalising symptoms, neither symptomology is exclusive to one gender (Hoffmann et al., 2004) and can co-occur at high rates in children and adolescents (Angold et al., 1999). Mental health during adolescence is governed by the interactions between multiple social, psychological and biological factors that either increase the risk of or protect against mental health problems (Patel et al., 2007).

This particular period of adolescence is therefore an important time for enhancing good mental health behaviours and well-being. Enhancing resilience by strengthening protective mental health factors and possible ways of avoiding engagement in risk taking behaviours (World Health Organization, 2018). Adolescents currently have a poor understanding of mental health, engagement and improvement through appropriate interventions should be increased. Given that the prevalence of mental health problems during adolescence, it is important that quality interventions are provided to enhance adolescents' resilience and ability to cope with difficult situations (Seedaket, Turnbull, Phajan, Wanchai, 2020).

Explanations for an increase in mental health problems during adolescence

From a biological perspective, *adolescence* is defined as a time of significant functional development of the social brain (Blakemore, 2008). Multiple factors, including

changes in hormone levels and changes in the social environment, influence social-brain development during adolescence. Peer rejection, school stress and conflicts can contribute to anxiety and depression (Bilsen, 2018). Stressful events and coping efforts during adolescence play essential roles in the onset and maintenance of developing mental health disorders (Compas et al., 1993).

Mental health is known to be protected in adolescents who live in families where they feel valued and supported (Patel et al., 2007). The duration of contact between parent and adolescent decreases, resulting in the need for successful separation from mother and father in adolescence, and young adulthood helps develop psychological, mental and relational health. During this period, the parent-child relationship changes, and identity is formed (Paikoff & Brooks-Gunn, 1991). The social environment changes during adolescence as they spend more time with peers than adults, resulting in more conflict with their parents (Laursen, 1995).

During adolescence, social environments widen, and friendships become increasingly important for social and psychological development (Brent et al., 2014). According to Erikson (1968), adolescents are developing their unique sense of identity, creating meaningful relationships with individuals outside of the family. Research has shown that the structure of adolescents' friendships can substantially impact their health and development (Lamblin et al., 2017). Research has also shown that a formed sense of identity (Dumas et al., 2009) and high-quality, supportive social relationships (Miething et al., 2016) are strongly associated with adolescent mental health and well-being. Simultaneously, less peer acceptance has been found to predict more internalising and externalising symptoms and less global self-worth in two years in a longitudinal sample of young people (Klima & Repetti, 2008). Adolescence is, therefore, a period of significant physical, social and emotional change resulting in a vulnerable period for the development of mental illness.

The importance of early identification

During adolescence, poor recognition and understanding of mental health disorders can lead to disorders remaining untreated, with nearly two-thirds of individuals failing to seek appropriate help and support when needed (World Health Organisation, 2001). Identifying a mental health problem is the first step to obtaining help and support, and mental health literacy (MHL) aids in this initial step (Jorm et al., 1997). MHL is, therefore, the foundation for mental health prevention. MHL has been defined as the knowledge, understanding and beliefs surrounding mental health disorders that ultimately aid in managing, preventing and recognising mental health disorders (Jorm et al., 1997).

MHL is known to consist of several components, for example, (a) the ability to identify and recognise a mental health disorder, (b) an understanding of the risk factors and causes of mental health disorders, (c) understanding and knowledge about help-seeking behaviours, (Jorm et al., 1997). To date, it is widely recognised that the general public has low levels of MHL (Jorm 2018; Furnham & Swami 2018; Angermeyer & Dietrich 2006). More specifically, members of the public fail to recognise specific mental health disorders or different types of psychological distress (Jorm, 2000). It has also been recognised that adolescents and young people also have lower levels of MHL (Jorm et al., 1997; Kelly et al., 2007).

Individuals with higher levels of MHL can understand and recognise a mental health problem accurately, understand where to seek appropriate help and information, and understand that they can access help and support (Tambling et al. 2021). The inability to accurately recognise symptoms of mental health problems in yourself and others around you is a primary concern (Kelly et al., 2007), as low levels of MHL can act as a barrier to accessing early intervention, particularly during the period of adolescence (Tambling et al., 2021). Therefore, understanding mental health problems is important given the high lifetime prevalence of developing a mental health difficulty. The research therefore demonstrates that

improved mental health knowledge in young people is essential for the early identification of mental disorders (Gulliver et al., 2010). Moreover, good MHL in young people may therefore lead to better outcomes for individuals with mental health problems, allowing for early intervention.

The importance of early intervention

The recognition and knowledge of symptoms of mental health disorders is an important factor of MHL as it significantly relates to the early detection of mental health problems (Wright et al., 2007). Gulliver et al. (2010) conducted a systematic review and demonstrated that a perceived lack of knowledge about mental health problems is the most prominent barrier amongst adolescents to seek appropriate help and support. Adolescence is considered both a period of development but also a period of vulnerability. Poor mental health in youth has been strongly associated with negative outcomes in life later on (Birmaher et al., 2004; Gibb et al., 2010). Moreover, longitudinal follow-up studies of adolescents with depression emphasise the increased risk of adult depression (Fombonne et al., 2001). Depression in adolescence is common worldwide. However, it is often unrecognised (Thapar et al., 2012). Moreover, in adolescents, depression is a major risk factor for suicide (Ystgaard et al., 2009). Therefore, early intervention may be able to prevent the later development of severe mental health problems (Harrington & Clark, 1998). As a result, the *timing* of an intervention for a mental health problem is critical to prevent adverse outcomes and to worsen of mental health problems and symptoms (McGorry et al., 2011).

Early intervention aims to help reduce and prevent emotional and behavioural difficulties and potentially serious health conditions (Bates, 2005). It is widely recognised that early intervention is fundamental to the recovery of mental health problems (Pinfold et al., 2005). Appropriate diagnosis of mental health disorders alongside early interventions can lead to better mental health outcomes and positive attitudes towards help-seeking (Milin et al., 2016). Chen et al. (2006) investigated the associations of mental health disorders during

adolescence with quality of life 17 years later. Compared to participants without a history of mental health problems, adolescents with a mental health problem reported poorer physical health and more problematic social relationships. These researchers therefore highlight that mental health disorders during adolescence can have adverse long-term associations with quality of life. It has been suggested that if a mental health problem is recognised and treated early on, this may increase the chances of a better long-term outcome (Jorm et al., 1997). Issues such as these underline the pressing need for early intervention as part of a comprehensive approach to address mental health needs of adolescents.

Prevalence of mental health disorders in Wales

In Wales alone, mental health conditions cost around 7.2 billion a year (Mental Health Research Network, 2009). Moreover, the specialist Child and Adolescent Mental Health Service in Wales (CAMHS) is under more pressure as the last four years have seen a significant increase in demand (Thornton, 2017). A recent survey conducted by Page et al. (2021) identified that almost 2 in 5 (39%) young people reported mental health symptoms, with almost 1 in 5 (19%) reporting 'very high' mental health symptoms as reported on the Strengths and Difficulties Questionnaire (Goodman et al., 2001). Furthermore, mental health symptoms increased with age; 12% of students in year 7 reported a very high level of symptoms, rising to 22% in year 11. Recognising the growing prevalence of mental health problems in young people across Wales, Together for Mental Health in Wales in 2019 put forward a government strategy setting out priorities in improving mental health and mental health services in Wales.

The Guide Cymru aims- Action for Children

Action for Children (AFC) is a third sector UK charity that received funding from the Welsh Government to deliver a MHL programme (The Guide Cymru) to all Year 9 pupils (age 13 to 14 years) in mainstream education throughout Wales. AFC commissioned

Swansea University to evaluate this programme, with the research presented within the thesis forming the basis of this. The Welsh Government provided the funding as a Section 64 grant as part of their Mental Health and Vulnerable Groups workstream. The Guide Cymru is based on an evidence based MHL intervention and resource (The Guide Mental Health Curriculum) aimed at improving knowledge and attitudes towards mental health in adolescent populations (Mcluckie, Kutcher, Wei, & Weaver, et al., 2014). The Guide Mental Health Curriculum was therefore developed into the Guide Cymru. This involved a process of re-writing The Guide to be appropriate for a Welsh Context. My supervisors and I worked closely with AFC in the adaptation of The Guide and with planning the evaluation. This involved amendments to terminology and materials to be suitable for a younger age range of 13 to 14 years, as The Guide was originally developed for grades 9 and 10 in Canada, between approximately 14 and 16 years (Kutcher & Wei, 2016). Adaptations to the Guide Cymru further included simplifying terminology surrounding mental health and mental health problems, providing additional resources for lower-ability pupils, and access to relevant video clips that complemented the materials. The Guide has been piloted in several schools across Canada and has proven to be effective in improving MHL of grades 11 and 12 pupils aged 16-18 years (Milin et al., 2014). This is covered in more detail in Chapter 2.

The Guide Cymru compromises of six modules which include 1) understanding mental health and mental illness, 2) common stigma myths and realities, 3) discussion upon specific mental illnesses, 4) understanding experiences of mental illness, 5) help-seeking and where to find appropriate support, and 6) the importance of positive mental health. The Guide Cymru aims to aid students and their teachers with appropriate resources to improve their mental health knowledge, reduce stigma, and increase help-seeking behaviours. Over the course of 12 to 14 weeks, the programme includes resources to engage the pupils in their learning about mental health. Sessions aim to be interactive, experiential, and stimulate

critical thinking. The Guide Cymru includes printed materials, videos and PowerPoint presentations. The Guide Cymru is to be embedded within existing curriculum and delivered by usual classroom teachers to enhance the MHL of both pupils and teachers.

In order to establish the Guide Cymru effectiveness in the ability to improve MHL of young people, an appropriate evaluation is needed. An evaluation determines whether the expected change within an outcome occurs and whether these changes are in fact attributed to the programme (Harden et al., 2001). An outcome evaluation will therefore examine the impact of the Guide Cymru programme. This evaluation will therefore be the core component of this thesis.

Lay out of the Thesis

The aim of this thesis was to evaluate an evidence-based intervention (The Guide Cymru) in secondary schools across Wales. In Chapter 1, I have given an overview of the prevalence of mental health problems during adolescence and outlined the need for early intervention followed by a brief introduction to the Guide Cymru. Chapter 2 reviews mental health stigma and details the importance of stigma reduction through improving knowledge and MHL. To effectively evaluate the Guide Cymru, a review of current measures of MHL and stigma reduction is considered in Chapter 3. This thesis includes the development of a new measure of MHL, known as the Knowledge and Attitudes to Mental Health Scale (KAMHS) (Simkiss et al., 2021), which presents good psychometric properties within an adolescent sample. Chapter 4 considers the associations between mental health and the multidimensions of MHL. Chapter 5 introduces a pilot study evaluating the Guide Cymru's effectiveness. Based on the preliminary evidence of the effectiveness of the Guide Cymru, a cluster randomised control trial was used to evaluate a MHL programme (The Guide Cymru) within secondary schools across Wales and is presented in Chapter 6. Finally, Chapter 7

discusses the strengths and limitations of the thesis's findings and theoretical and policy recommendations within the research on MHL.

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Chapter 2: Mental health stigma in children and adolescents

Chapter Overview

The current chapter aims to review the conceptualisation of stigma and introduce the various types of mental health stigma such as public and self-stigmas. This chapter also discusses the origin of stigma and provides a brief overview of the theoretical models of mental health stigma relevant to this thesis. Causes and consequences of mental health stigma, such as low self-esteem particularly focused in adolescence, are discussed. This chapter will then cover an introduction to stigma theory, a fundamental theory highlighting the relationship between stigma and a lack of mental health knowledge in adolescents. Finally, ways of improving mental health stigma in adolescents are covered through mental health literacy (MHL) programmes to increase mental health knowledge and attitudes with an overview of the Guide Cymru Mental Health Programme.

Conceptualisation of stigma

The term 'stigma' is an attribute that is often associated with devalued stereotypes (Clair, 2018). Stigma begins with a labelling process (Link & Phelan, 2001). Just as individuals mark others positively in thoughtful and favourable ways, stigmatising reflects this marking in terms of negative labels (Rose et al., 2007). Stigma thus includes marks or signs that can disqualify individuals or groups from social acceptance of society (Goffman, 1963). There are multiple theoretical approaches to the study of stigma. However, the framework Goffman (1963) outlined remains dominant (Tyler & Slater, 2018). Goffman (1963) defined stigma as a “deeply discrediting” attribute, ultimately reducing someone from a whole individual to a “tainted” and “discounted individual”. Based on this definition, stigma refers to negative social meanings assigned to individuals when their attributes are considered either different or inferior to current social norms (Goffman, 1963). Such stigmas exist when a difference is identified and later linked to stereotypes. Some in fact may be

linked to positive stereotypes but generally, they tend to be negative. Link and Phelen (2001) argue that the characteristics that form a stereotype must be undesirable. Stereotyped behaviours however are behavioural acts that often result in separation of "us" versus "them" (Andersen, Varga & Folker, 2022). Goffman further argued that most individuals would experience the role of being stigmatised at least once during their lives. Inherent to this definition is the idea that stigma dehumanises individuals and reduces their social value (Fontesse, Rimez & Maurage, 2021).

Key to the conceptualisation of how stigmatisation arises is the stigmatisation process outlined by Goffman, who acknowledges that rather than stigmatising attributes being a character of the individual, they are socially constructed. Furthermore, Crocker (1999) proposed that stigmatisation occurs when an individual possesses a devalued attitude within a particular social context. This definition shares the assumption that stigmatised individuals believe they have an attribute that marks them as different from others. Thus, such attributes can be visible or invisible and do not necessarily reside in the individual but within the social context.

Building upon Goffman's original definition of stigma, numerous researchers have aimed to understand the constructs underlying stigma. For example, Jones (1984) identified six dimensions that predict the current strength of a stigma, which included; 1) concealability (the degree to which stigmatising behaviour can be visibly concealed), 2) course (the long-term result associated with the attribute), 3) disruptiveness (the degree to which day to day activities are impeded), 4) peril (the degree to which the behaviour associated is dangerous to others), 5) origin (the degree to which the individual is responsible for the attribute) and 6) aesthetics (the physical appearance of the individual who has the stigmatising attribute). In this definition of stigma, when society attributes perceived behaviours that do not adhere to the expected social norms, discomfort is often created, leading to a generalisation of

abnormal behaviours. This may help explain why society continues to avoid particular individuals (Corrigan et al., 2003). These six dimensions carefully map the qualities associated with mental illness and gear towards understanding the underlying factors contributing to stigma, which has been highly influential to other researchers (Link & Phelan, 2001).

Theoretical understandings of stigma may help explain why much of the current focus has been at the interpersonal level, whilst contextual factors that facilitate stigma have often been neglected. Moreover, Link and Phelan (2006) highlight that the concept of stigma has received criticism for being individually focused and loosely defined. In response to this, these researchers define stigma as the result of a process in which five interrelated components combine to generate stigma. The first component involves labelling, whereby individuals identify and label differences between people. The second component consists of stereotyping, whereby a labelled individual is associated with undesirable characteristics. Following this, a third component separates the labelled individual as 'them' and 'us'. Within the fourth component, stigmatised individuals experience a loss of status; finally, the fifth component is the exercise of power. Power can be observed in situations where lower power groups attempt what is known as ‘reverse stigmatisation’(Link & Phelan, 2006). These authors explain that patients treated for a mental illness may label their clinicians as arrogant and avoid them. The patients lack the social, cultural, and economic power to translate negativity into any significant consequences. Power enables certain cultural beliefs about which characteristics are designated as undesirable to become dominant (negative stereotyping) and produces the conditions for discrimination (Link & Phelan, 2006).

Most individuals currently have some knowledge of a set of stereotypes; however, not all individuals agree and support stereotypes (Jussim et al., 1995). For example, many individuals may recall racial stereotypes against groups of individuals. However, they may

disagree that such stereotypes are valid (Jerald et al., 2017). Furthermore, individuals may believe that a person diagnosed with a mental health problem is violent and dangerous (stereotype) due to a lack of accurate knowledge surrounding the mental health problem (Lai et al., 2001). The belief may induce fear and uncertainty (prejudice) directed towards the individual and elicit social exclusion (discrimination) by refusing to sit next to the individual. Prejudice, which is fundamentally a cognitive and affective response, leads to discrimination, the behavioural reaction (Parker, 2012).

Mental Health Stigma

The individualised understanding of Goffman's definition has made a significant contribution to defining the role of mental health stigma and has led to the development of the social cognitive model of stigmatisation, seeking to provide an in-depth exploration of the components of stigma (Thornicroft et al., 2016). In line with psychological approaches, this model separates the stigmatisation process into three key domains: cognitive, emotional and behavioural. Thornicroft et al. (2007) define stigma theory as including three elements: problems of knowledge (misinformation or ignorance), attitudes (prejudice) and behaviour (discrimination). By separating the process into three sequential parts, the social cognitive model allows for an in-depth exploration of the origin of stigma.

It is essential to conceptualise stigma as it is an evolving concept. It is important to capture the different aspects of stigma over time, as many definitions exist. This is because research on stigma is multidisciplinary and includes contributions from psychologists, sociologists and political sciences. As a result, different frames of reference have resulted in differing conceptualisations of stigma (Link & Phelan, 2001) and the stigma concept we construct has clear implications for understanding stigma research. Stigma theory as defined by Thornicroft et al. (2007), builds upon the understanding of a lack of knowledge or

misunderstanding is a key driver in the formation of stigmas. Therefore, this current conceptualisation of stigma will be used throughout the thesis.

Mental illness has been identified as one of the most stigmatised attributes an individual can have today (Hayward & Bright, 1997). Although stigmatising attitudes are not limited to mental illness, the public often disapproves of individuals with mental disabilities significantly more than individuals with related conditions such as physical illness (Corrigan et al., 2000; Socall & Holtgraves, 1992). The stigma associated with mental illness and poor mental health is widespread (Lauber et al., 2004) and can profoundly affect individuals with mental health problems. Individuals with serious mental illness often struggle with the symptoms and disability resulting from their condition, but also by the stereotypes and prejudice from misconceptions of mental illness (Corrigan & Watson, 2002). Mental health stigma has been identified as a significant issue and concern for people with mental illness.

Rüsch et al. (2005) argue that many of the misunderstandings in society regarding mental health and mental illness often result in stigma. Corrigan (2000) theorised that Weiner's Attributional Theory could partially explain reactions to individuals with mental health disorders. Attribution Theory assumes that individuals are motivated to understand their environment, and individuals begin to understand others by making personal or situational attributions based on their behaviours (Heider, 1958). Therefore, this has become an essential framework for explaining the relationship between stigmatising beliefs and attitudes and discriminatory behaviour (Weiner, 1995).

Accordingly, behaviour is determined by a cognitive, emotional process by which individuals make attributions regarding the causes and controllability of an individual's behaviour, ultimately leading to inferences about their responsibility. Such assumptions lead to emotional reactions such as disgust and anger that affect individuals seeking support. If

such inferences are attributed to factors outside of an individual's control, they are less likely to be judged negatively and held responsible for the causes of their condition. Alternatively, if such inferences are attributed to factors within one's controllability, the individual is likely to be judged responsible, along with negative emotions and behaviours attributed towards them.

Corrigan's model clearly outlines various components of stigma towards individuals with mental illness. This tripartite conceptualisation proposes three interrelated constructs: stereotypes, prejudice and discrimination (Corrigan & Watson, 2002). Stereotypes are beliefs that are held about members of a particular social group. Such beliefs allow individuals to categorise others and form impressions of individuals that belong to that particular social group (Corrigan et al., 2003). Prejudice however is the preconceived opinion, agreement and endorsement of the negative stereotypes (Silke, Swords & Heary, 2016). Finally, discrimination is the behavioural component, a behavioural response that may result in potential harm towards individuals with that particular group as for example social exclusion (Corrigan & Wassel, 2008). Although, there is limited research which has tested this model in adolescents. Research by Silke, Swords and Heary (2016) aimed to develop a model of stigma toward depression within adolescents to examine whether stigma is composed of three dimensions as outlined by Corrigan, that being Stereotypes, Prejudice and Discrimination. Adolescents were asked to complete a self-report measure of stigmatising attitudes towards Depression. They found through conducting confirmatory factor analysis upon the factor structure that was identified, seven factors loaded onto one of the three separate constructs, demonstrating that these factors are separate and distinct aspects of stigma. It is therefore proposed that stigma comprises separate cognitive, affective and behavioural aspects.

Different types of mental health stigma

Public stigma

Mental health stigma manifests itself in many ways, including public and interpersonal reactions to individuals with a mental health problem (Link et al., 2004), and stigma has been identified as a fundamental social determinant of various public health inequalities (Hatzenbuehler et al., 2013).

Public stigma is the most prominent type of stigma observed and studied, as it represents both the prejudice and discrimination directed at a group by the larger population (Corrigan & Rao, 2012). Public stigma manifests in how the population reacts to mental health problems (Corrigan et al., 2002). Public stigma of mental illness can be viewed as essentially a form of prejudice, as it lies within cognitive, affective, and behavioural reactions (Watson & Corrigan, 2005). Cognitive reactions to an individual with a mental health problem include stereotypical beliefs that the individual is dangerous (Watson & Corrigan, 2005) and is a significant barrier to seeking the appropriate mental health treatment among young adults (Pedersen & Paves, 2014).

Anticipated stigma

Although stigma may be experienced in several different ways, researchers need to understand the extent to which individuals living with a mental health problem anticipate stigma (Earnshaw et al., 2015). Anticipated stigma is the extent to which people are anxious and worried regarding negative interpersonal reactions from others if they are to disclose their mental health problems (Quinn et al., 2015). Anticipated stigma has often been linked to negative health outcomes such as increased psychological distress and reduced well-being, particularly among students (Quinn & Chaudoir, 2009). Anticipated stigma involves expecting to experience prejudice, discrimination, and stereotyping from others in the future (Quinn et al., 2015). Individuals with chronic illnesses who anticipate stigma expect others

will devalue them based upon their chronic illness. Research by Earnshaw et al. (2012) has found that individuals with anticipated stigma from friends and family experienced a lower quality of life. However, Earnshaw et al. (2012) found that anticipated stigma from healthcare workers, which was associated with lower quality of life was mediated by stress. This relationship can be explained partly by higher stress and lower support systems. This research finding suggests that individuals living with chronic illnesses do not have to experience enacted stigma (experiences of discrimination or prejudice) to suffer the severe outcomes of stigma as they can anticipate the consequences in the future.

Self-stigma

Whilst the role of societal processes involved in stigma creation has been acknowledged, internal and behavioural processes also play a part and result in social isolation (Phelan & Link, 2008). Individuals who live with conditions such as schizophrenia or depression are also vulnerable to endorsing stereotypes about themselves, otherwise known as self-stigma (Corrigan & Rao, 2012; Margetić et al., 2010). Self-stigma can be defined as the internalised psychological impact of possessing a stigmatising characteristic (Corrigan & Rao, 2012). Once an individual has internalised negative stereotypes, they can often produce negative emotional reactions. Individuals who experience self-stigma can also experience a loss in self-esteem and self-efficacy (Corrigan et al., 2006). The emotions of shame, fear, embarrassment, and alienation are central to self-stigma (Link et al., 2004). Self-stigmatisation diminishes an individual's self-worth. For example, hope in achieving goals is undermined and can result in poor health outcomes and quality of life (Corrigan et al., 2006). When seeking mental health support is viewed as weak and inferior, individuals are more likely to perceive it negatively (Bayer & Peay, 1997). Furthermore, self-stigma has often been linked to decreased intentions and willingness to seek appropriate help and support for a mental health problem (Mullen & Crowe, 2017; Pattyn et al., 2014; Vogel et al., 2013).

Lannin et al. (2016) examined the link between self-stigma and the decision to seek help and support for a mental health problem. They aimed to examine whether self-stigma and attitudes negatively impact decisions to seek information about mental health concerns and available support. In 370 undergraduates, they found that self-stigma negatively predicted decisions to seek help and advice for mental health problems. Among individuals experiencing higher distress, those with high self-stigma were less likely to seek appropriate support and help than those with low self-stigma. This research highlights the importance of interventions targeting self-stigma to improve help-seeking behaviours.

Research however has noted that adolescents experience of the effects of stigma are in fact similar to that of adults as for example, feelings of shame and secrecy (Kranke, Floersch, Townsend & Munson, 2010, Moses, 2009), however, very little is known upon the effects of self-stigma in adolescents. Research by Kranke, Floersch, Kranke and Munson (2011) conducted semi structured interviews to address the perceptions of 27 adolescents between the ages of 12 and 17 who took psychiatric medication for a mental health diagnosis. They found several indicators of self-stigma amongst the adolescents through stereotypes and protection through keeping medication use a secret to protect themselves.

Moreover, research by McKeague, Hennessy, O'Driscoll and Heary (2015) investigated the experiences of self-stigma in young adults diagnosed with ADHD or depression before their 18th birthday. Through open-ended interviews, they found that the young adults were aware of the negative attitudes surrounding them and although some may not have endorsed the stigmatising views they experience from peers, they responded with negative self-evaluation and particularly self-blame. Such findings reinforce the need for anti-stigma interventions during this age period to eliminate both stigma and self-stigmas attached to mental health.

Experienced stigma

The severity of self-stigma may also depend on whether the associated public stigma is only anticipated or is experienced through discriminatory actions and demeaning attitudes (Corrigan & Rao, 2012). Individuals with noticeable or disclosed stigmatised conditions typically encounter a range of degrading and discriminatory actions from others, including being treated as less competent, being told to lower their life expectations, being shunned or avoided, and being denied employment (Wahl, 1999). Individuals living with a mental health problem can experience a number of disadvantages along with living with the symptoms of a mental health problem (Kondrat et al., 2018). Individuals generally tend to move away from understanding stigmatising mental health stereotypes to believing that these stereotypes are accurate. However, research has found that less experienced stigma is reported by those who can conceal and hide a mental health condition (Quinn & Chaudoir, 2009).

Causes and consequences of mental health stigma

While it is clear that the various types of stigmas can negatively impact individuals with mental health problems, research is limited in how one or more of these different types of stigmas can influence or affect each other. While stigma can present itself in different ways, it has been proposed that certain types of stigmas will present before others. Link et al. (2004) theorised that public stigma might lead individuals with a mental health problem to develop self-stigma, which can potentially cause detrimental effects. Further, Kao et al. (2016) examined the mediating role of self-stigma within the relationship between public stigma and psychosocial outcomes. Using a cross-sectional design, a sample of 251 participants with and without psychotic disorders completed questionnaires addressing stigma, self-esteem, depression, and quality of life. They found that self-stigma mediated the effects of public stigma on psychosocial outcomes such as self-esteem, depression, and quality of life among patients with and without psychotic disorders. This research highlights

the differing impacts of self-stigma, and the internalisation of mental illness stigma mediates public stigma as the effect of public stigma on psychosocial outcomes.

Worldwide, mental health problems are one of the leading contributors to disease and cause of disability as stigma, and discrimination attached to a mental health condition, impairs a person's ability to engage in work, leisure, and social activities and may also affect their family and support networks (WHO, 2001). Individuals with mental health problems often struggle with multiple issues. Firstly, such individuals cope with the symptoms of mental health problems. Secondly, they often deal with the stigmatic views attached to a diagnosed mental health problem. These symptoms can make it difficult for someone with a mental illness to work, live independently or achieve a satisfactory quality of life. Below are several causes of the consequences of mental health stigma.

Barriers to help-seeking behaviour

Mental health stigma can often act as a barrier to seeking appropriate support and help (Clement et al., 2015). Three of the most common barriers to seeking appropriate mental health support are experiencing stigma associated with help-seeking, not recognising one has an illness, and not knowing where to go for appropriate support and help (Davidson & Manion, 1996). Stigmatisation can potentially lead to a lack of recognition that problematic behavioural patterns are a symptom of a mental disturbance (Heflinger & Hinshaw, 2010). This may ultimately lead to the problems being attributed to weak personal and appropriate support and not accessing help. Alternatively, individuals may feel a strong sense of shame, ultimately preventing them from seeking appropriate support and treatment for their problem. Evidence suggests that experienced stigma can lead individuals to misunderstand their illness and believe that their treatment is possibly stigmatising or harmful (Corrigan, 2005). Although it is essential to acknowledge that stigma is not the only barrier to treatment, it can

reduce an individual's willingness to comply and engage in appropriate treatments (Pescosolido & Boyer, 1999).

Despite the increased awareness of mental health services in previous years, recent research has found that only 22.5% of individuals with mental health problems seek any form of help or treatment (Doll et al., 2021). Thus, having a mental health diagnosis and seeking appropriate support and treatment appear to be stigmatising (Ben-Porath, 2002).

The evidence of mental health stigmas directly impacted upon treatment seeking has been mixed over previous years. For example, Bathje and Pryor (2011) examined how awareness and endorsement of public stigma may influence self-stigma and their relationship to attitudes and intentions to seek help for a mental health problem. Mental health stigma was significantly associated with both attitudes and intentions to seek appropriate support and help. They found that having greater sympathy towards an individual with a mental illness was predictive of self-stigma. While both public and self-stigma were independently related to attitudes towards seeking help, identifying different aspects of stigma may play different roles in influencing attitudes to seek appropriate support and treatment. In addition, Mojtabai et al. (2002) found that participants who reported feelings of embarrassment associated with mental health support and treatment were less likely to perceive a need for help or seek appropriate support. Furthermore, Barney et al. (2006) found that both self-stigma and perceived public stigma negatively predicted help-seeking attitudes.

Alternatively, many researchers have found limited or no significant relationships between mental health stigma and help-seeking behaviours (Golberstein et al., 2008). In a longitudinal community-based study in Australia, Jorm (2000) found no correlation between perceived public stigma and mental health service use. These conflicting results may reflect several factors. For example, most research on mental health stigma is conducted through

self-report measures, and many respondents may understate their true personal stigma level due to high social desirability levels; stigma research is often compounded by social desirability as surveys generally tend to be self-administered (Nederhof, 1985).

Consequences of a failure to seek appropriate mental health support

Many individuals with mental health problems do not seek professional help (Kohn et al., 2004). Untreated mental health problems are becoming a growing concern for mental health services (Stolzenburg et al., 2019). Kisley et al. (2006) investigated the effect of the duration of untreated symptoms on 1-year outcomes in primary care in 351 individuals. At one year follow-up, they found that longer duration was associated with worse psychiatric outcomes. This suggests that the outcome and response to treatment for common psychiatric disorders such as anxiety and depression are inversely proportional to their chronicity. Elaboration of this finding indicates that inadequate intervention may lead to the persistence of symptoms (Andrews, 2001). Research has often suggested that one of the main reasons for the high unmet needs of people with mental health problems is that most untreated individuals do not believe or understand that they have a problem that requires treatment and support and therefore have a lack of insight into their problems (Kessler et al., 2001). Therefore more work is needed in this area to improve mental health awareness (Kessler et al., 2001).

Lower self-esteem/ self-efficacy

Research has often linked internalised stigma and self-esteem to quality of life among individuals with a mental health problem (Picco et al., 2016). Recovery from a mental health disorder is conceptualised as a process of developing self-efficacy, illness management and hope (Bellack, 2006). However, stigmatisation has been shown to put those with mental illness at risk for lower self-esteem and feelings of self-efficacy, which has widespread harmful effects on recovery (Link, 1987; Corrigan, Watson, & Barr, 2006). Internalisation of public stigma consists of perceiving societal prejudiced judgments about people with mental

health problems as accurate and personal to oneself. Individuals with internalised stigma often believe that they have less value than others (Link et al., 2001). This often results in decreased self-esteem and self-blame (Rüsch et al., 2010).

More recently, research has considered whether internalised stigma, self-esteem and self-efficacy are mediators of the relationship between experienced stigma and recovery. Jahn et al. (2020) conducted a secondary analysis on standardised baseline measures for two randomised controlled trials with adults with serious mental illness. They found that experienced stigma led to internalised stigma (self-stigma), which later influenced self-esteem and recovery-related outcomes such as quality of life. This sequential chain of events highlights how experiences of stigmatisation can significantly harm recovery outcomes which strongly supports the social-cognitive model (Corrigan et al., 2006). This model proposes that individuals are exposed to societal stereotypes, accept them, and ultimately apply them to themselves, engendering harmful self-beliefs (Corrigan et al., 2012).

Consequences for adolescents and young people

As discussed above, mental health stigma can have a substantial impact during adulthood; however, it can also profoundly impact young children and adolescents (Chandra & Minkovitz, 2007). A recent systematic review by Ferrie, Miller and Hunter (2020) reviewed findings from both qualitative and quantitative research studies that looked at the effects of stigma in adolescents with mental health problems who accessed services for support. They found that the outcomes of stigma were negative, although many protective factors were also identified. Experiences of stigma were strongly associated with low self-esteem and an increase in depression. A strong tendency for avoidance as a means for coping was also apparent. Despite the negative trajectory of stigma, some individuals felt the process of labelling helped them to validate their experience and encouraged them to seek appropriate help and support.

Over the past few decades, research into the development of mental illness stigma has focused mainly on adults, and limited studies have been conducted with adolescents (Link et al., 2004). Little is known about how adolescents experience and cope with mental health stigma on a daily basis and the potentially negative implications for their current well-being (Hinshaw, 2005). However, recent research by Hermann, Durbeej, Karlsson and Sarkadi (2022) aimed to assess adolescents experiences of mental health related stigmas through qualitative interviews and focus groups. They found that having a mental health problem today is the new normal and that it is common amongst young people. Expressions of concern were also identified upon the risk of being negatively affected by their peers, suggesting more support is needed not only for individuals with mental health problems but also for their peers in so that they are able to help and support each other. In line with this, Kaushik, Kostaki and Kyriakopoulos (2016) also identified how self-stigmatization of mental health led to more secrecy and an avoidance of interventions among adolescents. Individual blame and feelings of responsibility were also strongly associated feelings with those that had been stigmatised.

Furthermore, research by Granrud, Bisholt, Anderzen-Carlsson and Steffenak (2020) looked at adolescent boy's experiences related to visiting a public health nurse for mental health problems and issues. Through qualitative interviews, they identified that the participants felt it was breaking the norm through talking about their mental health problems and this was a key barrier in accessing appropriate help and support. It was considered a sign of weaknesses having any discussion of mental health concerns. Further to this, it was identified that fear of negative responses from their peers would also influence their willingness to access support.

Adolescent mental health is increasingly recognised as a priority area for public health policy (Saxena et al., 2013). Labelling is a core element of the stigmatic process. Children as young as 6 and 7 years-old are able to define words such as "weird" and "crazy" and apply these labels to vignettes of adults manifesting mental health problems (Spitzer & Cameron,

1995). By ages 9 to 11 years, children perceive individuals with a mental health problem as less socially attractive than individuals with physical disabilities (Roberts et al., 1984). Further to this, research by Rose et al. (2007) asked adolescents aged 13 and 14 years to list descriptive terms for an individual with a mental health problem. They found that most pupils labelled mental illness as a negative emotional state, violence, and isolation. Further to this, they found that only 16% of pupils used neutral labels or diagnostic terminology.

Although stigmatising attitudes are not limited to mental health problems, Adler and Wahl (1998) found that young people held more negative attitudes towards others with a mental health condition than those with a physical disability. Adolescents and young people with mental health problems are often socially excluded (Chen & Li, 2000) and commonly viewed as less popular, more aggressive, and socially rejected than other adolescents (Graham & Bellmore, 2007; Zimmer-Gembeck & Pronk, 2012). Research has often identified adverse peer relationships of young people with mental health problems, including losing friendships, loss of identity, and loneliness (Leavey, 2009). In line with this, Ng-Knight et al. (2019) explored rates of friendship stability across primary and secondary transitions. They found that pupils with a supportive and stable friendship had lower conduct and emotional problems. This research highlights the importance of stable friendships through school to improve pupils' mental health, or that those with poor mental health suffer from a lack of stable friendships.

Social exclusion of individuals with a mental health problem remains an unresolved public health challenge (Drew et al., 2011). Stigma is therefore a key determinant of social exclusion (Popay, 2010). Research by O'Driscoll et al. (2015) explored young people's beliefs about the fairness of exclusion in 148 adolescents. They identified that when young people are asked to evaluate the fairness of excluding peers with depression or Attention Deficit Hyperactivity Disorder (ADHD), exclusion was generally perceived as unfair. However,

when reflecting upon their evaluations, they showed that young people's beliefs about the fairness of exclusion were influenced by the attributions that they applied to the peer's behaviour. Pupils believed that exclusion of peers was adequate when they believed the inclusion of the individual would threaten peer dynamics and impose a cost to themselves. Furthermore, these pupils believed that the peer with depression could induce low mood in others. In contrast, the externalising behaviour exhibited by the peer with ADHD would impose on their ability to enjoy including them. However, it is important to note that the data obtained were gathered in response to fictional peers in two hypothetical scenarios. Thus, young people may reason differently about real-life exclusion decisions that they face in their social world.

Research by Moses (2010) examined adolescents' perceptions of being treated differently due to a mental health problem by school staff and peers. Through qualitative interviews, 56 adolescents demonstrated variation in the perceived extent and nature of stigmatisation they received. Of the sample, 62% of adolescents had experienced direct stigmatisation from their peers, resulting in friendship losses and social exclusion. Furthermore, 35% reported stigmatisation from school staff, resulting in fear and underestimation of their abilities within school. These findings highlight particular importance for intervention as within the school environment, relationships with peers and teachers are influential in shaping a sense of belonging, well-being, and success (Cameron, 2006). Such findings are congruent with other research suggesting that teachers tend to distance themselves from students they experience as threatening or challenging or misunderstand their behavioural problems (Cameron & Sheppard, 2006). There is an extensive research literature on the critical role of stable and supportive relationships with peers and family in both protecting youths from a mental disorder but also in reducing the

level of impairment for individuals with a diagnosed mental health problem (Behere et al., 2017; Craigie et al., 2010).

Research has often found that both mental health-related public stigma and self-stigma can negatively impact the help-seeking behaviour of young people to a much larger extent than among adults (Mukolo et al., 2010). Furthermore, in relation to this, it has been found that compared to adults, many adolescents have a lack of awareness of mental-health support that is available to them and ultimately find it more difficult to open up about mental health concerns (Elkington et al., 2012).

Moreover, it has also been evidenced that young people with a mental health problem are more likely to experience being social distanced (Martin et al., 2007). Further research by Chandra and Minkovitz (2006) conducted in-depth interviews of adolescents to address mental health attitudes and willingness to use mental health services. This research acknowledges the critical role of mental health experience and appropriate knowledge in young people's willingness to use mental health services. Nearly 90% of the participants relayed a personal experience with a mental health issue that had influenced their attitudes towards confronting a mental health problem. Several pupils anticipated negative responses towards mental health seeking from family members, peers, and school staff are key factors in teens' comfort and willingness to address mental health concerns. While several adolescents had extreme images of individuals with mental illness, few pupils explained how their views had changed after they had gained more knowledge about mental health.

Unmet mental health needs among young people and adolescents are increasing, as more than 70% of adolescents who require mental health care are not seeking appropriate help and support (U.S Public Health Service, 2000). Among medical students within the UK, research has identified that students avoid seeking appropriate help and support for a mental

health concern due to the stigma attached to seeking help. For example, receiving support is a sign of weakness (Chew-Graham et al., 2003).

Stigma theory- lack of knowledge

A lack of knowledge can often lead to mental health stereotypes, which often leads to negative attributions and negative affect, resulting in social distancing or punishing behaviours (Corrigan, 2000). Poor mental health knowledge is associated with lower help-seeking and service use rates, societal stigma, and discriminatory behaviour in adolescents and young people (Evans-Lacko et al., 2010). Researchers have often assessed adolescents' ability to correctly label a mental health problem. For example, Coles et al. (2016) assessed high school students aged 14-19 years' knowledge and beliefs regarding mental illness. They found that adolescents were better at recognising depression than social anxiety disorder and were more likely to recommend appropriate support for it. This research finding is in line with Reavley and Jorm's (2012) research that suggests that approximately half of adolescents can correctly identify depression.

In contrast, far fewer young people can recognise social anxiety disorder. Poor recognition is a concern as recognition is the first step to seeking appropriate support and treatment for a mental health problem. Therefore, a crucial step to improving help-seeking behaviour among adolescents and young people is promoting awareness of mental health problems and education on how to recognise and spot signs and symptoms of mental illness (McGorry et al., 2014).

Research has often identified concerns about a lack of anonymity and social visibility that prevented some young people from actively seeking help for mental health issues (Boyd et al., 2007). For example, young people often report concerns that they will be seen as 'crazy' and if they speak up about their problems and little would be done for them (Freedenthal & Stiffman, 2007) or that their friends may laugh and tease them (Lindsey et al.,

2006). Mental health literacy (MHL), specifically a higher knowledge of the mental illness, can address the barrier of stigma amongst adolescents (Sheffield et al., 2004). MHL is the knowledge and understanding of mental disorders which aid in the ability to recognise, manage and prevent a mental health disorder (Jorm, 2019). Wright et al. (2007) conducted a population-based survey of 1207 young people in Australia. They found that having accurate knowledge and identification of patients with depression and psychosis significantly predicted their choice of appropriate help and treatment for these disorders. Specifically, correctly labelling depression was associated with all recommended help-seeking behaviours and treatment. This finding supports the view that improvement to knowledge and accurate identification of disorders is beneficial as it facilitates appropriate treatment and help-seeking behaviour. In line with this finding, Yamasaki et al. (2016) examined the relationships between intentions to seek help and recognition of a mental health problem in high school students aged between 15 and 18 years. Students were asked to correctly label schizophrenia using a vignette about a person with schizophrenia in a cross-sectional survey. They found that adolescents who were unable to identify the mental health problem correctly were more likely to seek help from friends and peers. This highlights how during adolescence; peers are likely to be the first and most important step when seeking help for mental health problems. They also demonstrate the importance of professional sources of help that young people can feel familiar with and can directly access alone might be effective for promoting help-seeking in late adolescence.

It has been thought that inaccurate knowledge and understanding of the mental health disorder schizophrenia could act as a key barrier to seeking support and guidance from family and friends based on the fear of triggering negative perceptions of the mental illness (Read et al., 2006). These findings highlight the importance of educational programmes that contain the knowledge for diagnosing a mental health problem and appropriately dealing with the

stereotypes associated with various mental health problems to reduce anticipated stigmas. Approximately one-quarter of adolescents believe there is limited help within their community for a mental health problem or lack the appropriate knowledge of services they could access for support (Teahan et al., 2006). With low levels of mental health knowledge in the UK, interventions to improve knowledge and reduce mental health stigma are needed (Hart et al., 2016).

Improving mental health stigma through improving mental health knowledge

Universal mental health programmes are particularly relevant for interventions seeking to reduce public stigma of mental illness or promote MHL. Research in this field has increased steadily over the past few years, and interventions to reduce mental health stigma, particularly in schools and colleges, are increasing (Mehta et al., 2015). Interventions primarily involve either mental health education or education combined with direct contact with an individual diagnosed with a mental health disorder. However, a systematic review of anti-stigma interventions within schools reported that the overall methodology is rather mixed, particularly with only two randomised controlled trials, leading to difficulty in drawing any formal conclusions from the research (Mittal et al., 2012).

Many MHL interventions have also been developed in the hope of improving mental health stigma. Accurate recognition of a mental health problem can help reduce common stereotypes, such as labelling an individual with schizophrenia as mad. Further to this, the knowledge that an individual can develop and recover from a mental health problem may also reduce stereotypes and the assumptions of 'them' versus 'us'. Within adolescent populations, knowledge of mental illness appears to be significantly associated with more positive attitudes to mental illness (Sheffield et al., 2004).

Several interventions have been conducted which aim to improve mental health knowledge and reduce mental health stigma; however, the quality of the intervention and

evaluative approach varies. In particular, Skre et al. (2013) conducted a non-randomised controlled trial on 13–15-year-olds in three schools in Norway. For active schools, they received the intervention 'Mental Health for Everyone', delivered by the researchers or current teachers at the school. They found significantly improved symptom profile recognition, improved knowledge, and a shift towards suggesting health care as a place to seek help. However, this research is limited as they did not control whether pupils received the training from either the researcher or teacher, which may have had confounding effects.

Moreover, Hart et al. (2016) conducted an uncontrolled pilot of the teen Mental Health First Aid (MHFA) programme to examine the feasibility in Australian secondary schools. Across four schools, 988 students received the teen MHFA program. They found significant improvements in MHL, confidence in providing MHFA to peers, help-seeking intentions, and student mental health while significantly reducing stigmatising attitudes. The measures were adapted from the Australian National Survey of Youth Mental Health, which related to two vignettes: depression with suicidal ideation and social phobia. However, this research is limited due to the small sample size, high dropout rate, and poor responses to open-ended questions. Further research is needed to address the reasoning for high dropouts and low response rates.

The Randomised Control Trial (RCT) is regarded as the gold standard methodology for evaluating the effectiveness of an intervention (Akobeng, 2005). An RCT is a type of study in which participants are randomly assigned to one or two clinical interventions (Lang, 1997). The main advantage of an RCT is that the randomisation process prevents selection bias in so that any differences in outcome can be explained by the treatment (Roberts & Torgerson, 1998). A cluster randomised control trial differs from an RCT in that pre-existing groups, called clusters, of individuals are randomly allocated to treatment arms. Perry et al. (2014) conducted a cluster RCT of 380 pupils in Australia in 10 schools. The intervention

was known as 'Head Strong', which included 10 hours of material, including booklets and a slideshow delivered by current teachers. Using the Depression Stigma Scale (Griffiths et al., 2004) and the Inventory of Attitudes towards seeking mental health services, they found significantly improved knowledge and reduced stigmatic attitudes in pupils but no impact upon intentions to seek help. One explanation for this could be the duration of the programme, given that only 10 hours of materials were provided. Research has highlighted without additional learning, MHL levels tend to decline over time (Gulliver, Griffiths & Christensen, 2010) and without a long-term follow-up, the effectiveness of the given programmes may be limited. Therefore, to improve intentions to seek help, refresher sessions may be needed. This research however is also limited as it was conducted in catholic and independent schools, thus not generalisable across other schools and may have state school differences.

Pinto-Foltz et al. (2011) conducted a school-based cluster-randomised trial to determine an existing community-based intervention's acceptability, feasibility, and efficacy. The intervention was known as 'In Our Own Voice', a knowledge-contact intervention that aims to provide knowledge about mental illness to improve MHL and reduce mental health stigma. Using a longitudinal approach, adolescents in aged 13-17 years were randomised into the intervention group or control from two public high schools in the U.S. Outcome measures were mental health stigma using the (Revised Attribution Questionnaire) and MHL using the (In Our Own Voice measure). Two trainers administered the programme to pupils, and they found no immediate improvement in MHL until 4- and 8-weeks follow-up. It has been argued that individuals with low MHL have heightened sensitivity to information and images of mental illness (Pinto-Foltz et al., 2011). Therefore, this study may be explained by the idea that completing initial measures of mental health stigma and MHL may have heightened participants' sensitivity to mental illness within the environment, particularly among the

control group. Furthermore, the intervention was ineffective in reducing mental health stigma. The authors explain this due to the study being underpowered by a small sample size. Further research is needed to overcome the issue of underpowered research in this area.

Overall limitations of mental health literacy programmes

There are many limitations to the current interventions to improve mental health knowledge and stigma among adolescents and young people. Recently, Wei et al. (2018) reviewed MHL measures used to evaluate MHL programmes and found that these included limited use of valid and reliable psychometric instruments to evaluate the programmes. Further to this, Breslin et al. (2017) argued that there is a lack of control or comparison groups to accurately assess any improvements in a number of MHL programmes. It has been recommended that future research should consider using valid and reliable methods to evaluate all areas of MHL, in relation to mental health outcomes would help identify which demographic and psychometric factors are most associated with mental health outcomes (Wei et al., 2018). This type of research would be helpful in laying the foundation for the creation of an evidence-based and theoretically sound MHL interventions.

Furthermore, knowledge-based programmes have often been criticised for the premise that more knowledge is better. However, in-depth and detailed educational programmes can overwhelm as opposed to informing. Too much information can often lead to very few meaningful changes in actual health behaviour (Corrigan, 2018). For example, Mental Health First Aid (MHFA) is a well-educated intervention that typically involves a two-day course outlining the phenomenology and epidemiology of serious mental health problems. More information does not necessarily improve an individual's understanding of a disorder, and it might worsen outcomes because of information overload. Educators need to be mindful of the key outcomes when addressing such a sensitive topic in pursuing MHL. For example, students and pupils may gather more knowledge about psychiatric diagnoses and evidence-

based care, but whether this knowledge leads to behavioural change is a further area that needs to be addressed (Corrigan, 2018). Further to this, as discussed previously, the long-term effects of many MHL programmes should be taken into account and consideration of refresher programmes are also important for long-term effects (Gulliver, Griffiths & Christensen, 2010).

The Guide Mental Health Curriculum

The Guide Cymru is a MHL programme designed for young people which originated from the Guide Mental Health Curriculum (Kutcher et al., 2013). The programme was originally developed by Dr Stan Kutcher, Sun Life Financial Chair in Adolescent Mental Health, collaborating with the Canadian Mental Health Association. The Guide Mental Health Curriculum has been piloted in several schools across Canada in collaboration with the Department of Education and Early Childhood Development in 2007 (Kutcher et al., 2013). This programme was designed, piloted, and modified to enhance MHL for teachers and provide support for their application of the Guide in their classrooms.

The Guide is a MHL programme that is designed to be delivered to pupils within the classroom. The programme consists of six modules that can be taught over a period of 8 to 12 hours. Each module ranges between 1-2 hours of material. The modules consist of content upon knowledge and awareness of positive mental health and ways in which pupils could seek help if they needed it is delivered. The programme covers topics such as stigma myths, the importance of communication and what constitutes as good mental health and how best to maintain this. The materials within the modules consist of interactive activities, PowerPoint presentations of content and handouts which actively encourage open discussions of the material.

The programme is intended to be delivered by classroom teachers who have been trained specifically upon the delivery of the programme. This approach differs from many

other types of interventions that use mental health experts to deliver programmes to pupils (Ojio et al., 2015). This is a particular advantage as pupils given the programme by their regular teachers may be encouraged to seek appropriate help and support from these teachers when they suffer from mental health problems (Ojio et al., 2015). Furthermore, The Guide and the Guide Cymru are designed to be embedded within an existing school curriculum as opposed to a standalone programme. Research has identified that interventions introduced within schools use external resources, often with many limitations. For example, in the research by Pinto-Foltz et al. (2011), 'In Our Own Voice' intervention is delivered by external researchers and such materials are a one-off programme for schools and do not tend to strengthen current school resources.

The 'Go-To' Guide training involves a 1-day teaching session for teachers to become familiar with the materials and improve their own mental health training. Numerous research studies have evaluated the Guide programme in the ability to improve teachers' MHL. Recent application of such a school-based approach in Canada that integrates MHL into school curriculum by teaching teachers how to apply a modular, freely available, online curriculum resource has demonstrated significant and sustained improvements in knowledge and reduction in stigmatising attitudes in both pupils and teachers in several Canadian studies (Kutcher et al., 2015; Mcluckie et al., 2014; Milin et al., 2016). For example, Mcluckie et al. (2014) examined the Guide Mental Health Curriculum to enhance MHL in Canadian schools. Using secondary analysis on surveys of pupils who participated in the sessions before and after, along with a follow-up, they found that their knowledge significantly improved. This was the first research study to demonstrate the impact of a programme in a Canadian high school population.

Since its development in Canada, the Guide Mental Health Curriculum has been adapted for suitability in Malawi. Using a culturally adapted version of this resource (The

African Guide) has also demonstrated similar positive outcomes in teachers (Kutcher et al., 2017). Furthermore, Tanzania secondary school teachers have also been trained on the African Guide using only a pre-post training assessment of knowledge and attitudes. They found that teachers stigma decreased following training and improvements in knowledge. Moreover, teachers also reported high rates (greater than ¾ of the sample) of positive help-seeking efficacy for themselves as well as for their students, friends, family members and peers.

Many other countries have embedded the programme within their cultures. Researchers in Toronto also implemented the Guide programme in 2013, whereby they found that students' knowledge increased before and after study design (Kutcher et al., 2014). However, these research designs are limited due to the lack of a control group to eliminate any differences. To appropriately evaluate a programme, a randomised control trial is required. Milin et al. (2016) was the first to conduct an RCT to examine the effectiveness of the Guide mental health curriculum developed for high school students and delivered in the classroom. In a total of 24 high schools and 534 students in Canada, schools were randomly selected to either the intervention or waitlist control group. The programme was delivered to students with an average age of 16.5 years by their usual teachers as part of a Healthy Living course. They found that for the intervention group, students that received the Guide programme improved in knowledge-based scores over time, whereas no changes were found for participants in the control condition. Limitations of this approach lie in the fact that randomisation took place at the level of school as opposed to individuals, which may have posed some bias. Furthermore, the knowledge and stigma measures used within this research were not standardised and, therefore, would have benefitted from psychometric measurements.

Chapter summary

This chapter aimed to explore and review the conceptualisation of stigma, an introduction to mental health stigma and the different types of mental health stigma. Further, exploration of the causes and consequences of mental health stigma such as low self-esteem in adolescence. Finally, we reviewed current MHL programmes that aimed to improve mental health stigma in adolescents. An overview of the current research on the Guide Mental Health Curriculum was discussed with particular focus on how the Guide aims to overcome many limitations of current MHL programmes.

In the following chapter, we will discuss the development of a new MHL measure designed to evaluate the Guide Cymru in a Welsh context.

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Chapter 3: Development and psychometric properties of the Knowledge and Attitudes to Mental Health Scales (KAMHS).

Chapter overview

This chapter begins by outlining the developmental phases of a new measure of MHL, the Knowledge and Attitudes to Mental Health Scales (KAMHS). A detailed review of current MHL scales is given, followed by an acknowledgement of the current limitations of available MHL measures. Detail of the development stages covering item development which is based on an evidence-based intervention (The Guide Cymru). This chapter further explores item reduction through Exploratory Factor Analysis (EFA) and confirmatory factor analysis (CFA) for factor structure and psychometric evaluation testing in Year 9 pupils in secondary schools across Wales. Finally, this chapter outlines the final version of the KAMHS, which contains 50 items for adolescents' use.

Aims of the questionnaire

The initial aim of the KAMHS was to develop a questionnaire for students in year 9 (age 13 to 14 years) in UK schools that could index a range of MHL issues. This was needed as an outcome measure for a randomised control trial of a MHL intervention, The Guide Cymru (Simkiss, Gray, Malone, Kemp, & Snowden, 2020). The Guide Cymru is based on The Guide, (Kutcher et al., 2013), which has shown efficacy in a North American sample (Milin et al., 2016).

Development stages of the questionnaire

Outline of procedures

The development and evaluation of the Knowledge and Attitudes to Mental Health Scales (KAMHS) was conducted in six phases, as outlined in Figure 3.1.

Phase A: Brief review of MHL measures

A1. Conducted a brief literature review to assess all current and appropriate MHL measures available.

Phase B: Development of questions

B1. Development of items for the questionnaire based on the content of the Guide Cymru programme and pre-existing measures.

B2. Ordering and response format of each question.

Phase C: Preliminary review of questions

C1. A review of the initial questions was completed by researchers, head of head teachers, Action for Children staff and clinicians.

C2. Questions were reviewed by a sample of age-appropriate children.

Phase D: Pilot testing of KAMHS Version 1

D1. KAMHS Version 1 was piloted in a sample of 635 pupils from 4 schools.

D2. Review of data, feedback was received from schools and an exploratory factor analysis (EFA) was conducted.

Phase E: Pilot testing of KAMHS Version 2

E1. KAMHS Version 2 was piloted in a sample of 574 pupils from 5 schools.

E2. Review of data, feedback was received from schools and an EFA was conducted.

Phase F: Pilot testing of KAMHS Version 3

F1. KAMHS Version 3 was piloted in a sample of 559 pupils from 4 schools and an EFA and confirmatory factor analysis was conducted.

Figure 3.1. Phases of development of the KAMHS.

Phase A. Brief review of current Mental Health Literacy measures

Several instruments have been developed to measure the MHL of individuals, the stigma associated with mental health issues and related constructs in several populations (Jorm et al., 1997, Burns and Rapee, 2006, Schulze, Richter-Werling, Matschinger, & Angermeyer, 2003))). Below is a brief review of current available MHL measures.

Vignette Interview

The most widely used measure of MHL is the 'Vignette interview' (Jorm et al., 1997). The vignette interview describes an individual with a mental health difficulty, followed by a series of questions relating to the individual's mental health difficulties presented in the vignette (O'Connor, Casey, & Clough, 2014). Jorm et al. (1997) developed the primary measure of MHL, which was sent out with a quarterly household survey to a large sample of 2031 participants. Half of the sample were presented with a vignette of an individual who met the DSM-IV diagnostic criteria for major depression, and the other half were shown a vignette of an individual who met the DSM-IV diagnostic criteria for schizophrenia. They found that participants often misidentified a mental disorder as a physical disorder, leading to inappropriate use of services or avoidance of mental health services.

Although the use of a vignette is beneficial in identifying levels of knowledge within a sample population, the respondent's understanding of the mental health difficulty in the initial phase acts as a precursor for the remaining questions. For example, suppose the respondent incorrectly identifies the assumption that the individual in the vignette is experiencing mild stress as opposed to a diagnosis of depression. In that case, their responses to the remaining questions on treatment and advice will reflect this. In later research, Jorm and Wright (2007) found that only 67.3% and 42.5% of participants correctly identified the individual's diagnosis in the vignette of either depression or schizophrenia. As a result, the responses provided by participants may not have, reflected their actual knowledge of the

aetiology and treatment for the presented symptoms in the vignette, limiting this methodological approach to measuring various aspects of MHL (O'Connor et al., 2014).

Vignettes have been found particularly useful among child, and adolescent populations, as Leighton (2010) examined levels of MHL among a school-based sample of adolescents using the vignette interview methodology. These researchers used the MHL vignette across the ages of 11 to 18 years. They found it advantageous to introduce sensitive topics to children and adolescents, which respondents may find difficult to approach. Further research found that vignette-style interviews are beneficial in use with young children as they do not require an in-depth understanding of mental health (Barter & Renold, 2000). They have also found that respondents are less likely to give socially acceptable responses than if asked directly, which is advantageous whilst covering a sensitive topic such as mental health (Alexander & Becker, 1978).

A well-known MHL measure for adults has been adapted for the use of children is by Burns and Rapee (2006), who developed 'The Friend in need questionnaire'. They presented participants with five brief vignettes describing an adolescent experiencing life difficulties and various mental health difficulties. Participants were then required to answer specific questions about the individual presented in the vignette and rate how worried they felt and what they believed was wrong with the individual. This approach was applicable for adolescents to complete as they are able to describe what they thought the issue was and the concern level and attitudes towards the different issues. They found, however, discrepancies in participation as although participation on a school level was high, male participants were less likely to participate than females (60% vs 91%). Future research may consider examining particular gender differences within this type of research.

The vignette approach for measuring MHL allows for comparisons of items between individuals in order to determine a population's level of literacy (O'Connor et al., 2014). Although this is a useful approach, the vignette interview targets one specific mental disorder without reflection on the multifaceted concept of MHL (Yu et al., 2015). Furthermore, the vignette approach also fails to allow for subscales or a total score of MHL to be generated (O'Connor et al., 2014), resulting in a lack of individual-level comparisons to be drawn on each specific attribute of the multifaceted MHL. Subscales embedded within a MHL measure would provide the capacity to assess an individual's level of MHL. The lack of subscales, particularly in a measure that is designed to assess several attributes, means comparisons cannot be made on which these attributes might be most relevant to target to improve MHL.

Scale-based measurement of MHL

Although the vignette approach is the most widely used measure of MHL within children and adolescents, several researchers have demonstrated the beneficial use of a scale-based measure of MHL (Compton, Hankerson-Dyson, & Broussard, 2011; O'Connor et al., 2014; Rüsch, Evans-Lacko, Henderson, Flach, & Thornicroft, 2011). Scale-based measures enable researchers to generate a total level of MHL and various subscales, a significant limitation of the use of a vignette approach (O'Connor et al., 2014). Scale-based measures often include a set of questions that can measure various attributes. In comparison to the vignette approach methodology, scale-based measures have ease of assessment and are also less time-consuming, which is particularly useful when researching with young people (O'Connor et al., 2014)

Schulze, Richter-Werling, Matschinger, & Angermeyer (2003) developed a scale-based questionnaire specially designed to evaluate students' attitudes towards people with schizophrenia before and after taking part in a school-based mental health programme 'Crazy? So, what!'. The questionnaire included both stereotype scales and social distance

scales. Schulze et al. found that adolescent attitudes were susceptible to change as they resulted in more positive attitudes towards people with schizophrenia following the programme. Although this measure is useful in measuring attitudes towards schizophrenia, it is limited to addressing the mental health knowledge of other mental health disorders such as depression or anxiety. This is a standard limitation of several MHL measures as they only target one or two mental health disorders (O'Connor et al., 2014)

According to Jorm et al. (1997*)*, MHL includes seven key attributes, which include (1) the ability to recognise a mental health disorder; (2) knowledge of how to seek information; (3) understanding the risk factors of mental disorders; (4) knowledge of the causes, (5) understanding and knowledge of self-treatments; (6) knowledge of professional and appropriate help and finally, (7) attitudes that promote recognition. A review by (O'Connor et al., 2014) found no measure of MHL that included all seven attributes listed in the definition of MHL (Jorm et al., 1997). They further concluded that the psychometric properties evidenced by current MHL measures are poor as several studies failed to report in detail information about the development of the questionnaire or psychometric properties, such as the validity and reliability of their measurement tool.

Current limitations

While there are several measures of MHL, there are a number of reasons for developing a new measure, including several limitations surrounding the current measures of MHL. For example, conceptual differences in the definition provided for MHL over the years. The original definition of MHL provided by (Jorm et al., 1997) is illness-oriented (Yu et al., 2015). This approach neglects a measure of health-oriented literacy that covers help-seeking behaviours and the importance of good mental health behaviours and positive mental health (Kusan, 2011). As a result, research by Wei, Hayden, Kutcher, Zygmunt, and McGrath (2013) has provided a broader definition of MHL, which includes knowledge of maintaining

good mental health and self-efficacy. These researchers conceptualise MHL to include four domains; 1) understanding how to obtain and maintain good mental health, 2) understanding mental disorders and their treatments, 3) decreasing stigma against mental illness, 4) enhancing help-seeking efficacy. As a result, MHL addresses three interrelated concepts: knowledge, attitudes and help-seeking efficacy. This definition is consistent with the current construct of health literacy defined by the (World Health Organisation, 2005)

A further limitation of current measures of MHL is the lack of reported psychometric properties. Several MHL reviews have been conducted (O'Connor et al., 2014; Wei et al., 2013), which have evidenced a significantly low reporting of psychometric properties. Wei, McGrath, Hayden, and Kutcher (2015) found that only 38% of knowledge-based measures of MHL reported psychometric properties. This makes it increasingly difficult to determine the value of a measure without the reported reliability and validity of a measure.

Furthermore, Mansfield, Pataley and Humphrey (2020) conducted a systematic review on the measurement of MHL in adolescent research, highlighting that there is a lack of measures of MHL that have been particularly developed and psychometrically tested with adolescents. Moreover, they found that knowledge of mental illnesses was measured more frequently than the knowledge and understanding of prevention and promotion of mental health. Therefore, by focusing predominantly on psychiatric labels, this could run the risk of increasing stigmas around mental health (Kinderman, Read, Moncrieff & Bentall, 2013). In line with this, Kucera, Tomaskova, Stodola and Kagstorm (2023) conducted a systematic review of MHL measures in children and adolescents, using 21 measures were identified, no studies that were simultaneously psychometrically acceptable or appropriate for universal populations. Of this, the majority of research studies investigating MHL in children and adolescents failed to report sufficient information about the sample that was used, outline of

the questionnaire development, and appropriate piloting of the measures to demonstrate validity and reliability.

Measures of mental health stigma and attitudes towards mental health may not be answered honestly as individuals may be hesitant and conceal their stigmatic beliefs (Monteith & Pettit, 2011). A meta-analysis found weak correlations between measures of implicit and explicit stigma (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005) suggesting that stigma is a complex construct that requires careful examination. Social desirability is the tendency for people's responses to conform to cultural norms, rather than their true belief of a topic (Michaels & Corrigan, 2013). Particularly with research assessing stigma and mental health, participants may respond by offering a positive image to others or themselves (Tourangeau & Yan, 2007). Although anonymity is an excellent way to reduce this, a measure of social desirability bias must be included (Michaels & Corrigan, 2013).

More recently, Dias, Campos, Almeida and Palpha (2018) developed a measure 'Mental Health Literacy Questionnaire', a practical, valid and reliable measure for identifying knowledge, beliefs and behavioural intentions related to mental health in adults aged between 22 and 35 years. Although this measure has good reliability and validity, it is not free from social desirability bias. Many measures of MHL have been developed over the recent years as for example, Jung, Sternberg and Davis (2016) developed a measure assessing MHL, belief oriented MHL and resource oriented MHL, demonstrating to be a valid measure for use among adults. However, the measure was only tested in a local public housing staff, limiting the generalisability of the measure and although participants represent various demographic characteristics, further research with larger and more diverse populations should be used to strengthen the reported reliability and validity the given measure.

Measuring MHL can also become increasingly difficult when there is limited or no specific cut-off score that could be used to define high or low levels of literacy. Therefore, these differ between measures cause evaluation and review to become increasingly difficult. In the use of, for example, vignettes approach measures, the cut of the score for high levels of MHL is the extent to which participant responses reflect those of physicians. The correct diagnosis of a disorder is a measurement of high MHL.

Aims for developing a new measure of MHL

Following this review, we aimed to develop a multifaceted measure of MHL that would accurately evaluate The Guide Cymru, including several different subscales of MHL covering a wide range of mental health disorders. The aim is to develop a multifaceted measure of MHL that measures not only mental health knowledge but good mental health behaviours, stigma and help-seeking behaviours. We aim to develop a self-report measure, however, there is often the concern of whether respondents are answering truthfully or not (Bernardi & Nash, 2023). This is particularly important when discussing sensitive topics such as mental health in adolescents. Mental health is a socially relevant construct with normative expectations which can motivate individuals to comply with social norms and to avoid deviating from such norms (Rickwood & Coleman-Rose, 2023). Therefore, in the development of a new measure of MHL, we aim to include a measure of social desirability to overcome some of the previously discussed limitations of other measures of MHL (Michaels & Corrigan, 2013).

Phase B. Development of a list of questions.

Content of the questionnaire

Individual questions were initially written based on the content of (The Guide Cymru). The Guide Cymru is based on an evidence-based intervention and resource aimed at improving knowledge and attitudes towards mental health in adolescent populations (Milin et

al., 2016). The Guide Cymru compromises of six modules which include 1) understanding mental health and mental illness, 2) stigma myths and realities, 3) information on specific mental illnesses, 4) experiences of mental illness, 5) help-seeking and finding support, and 6) the importance of positive mental health. Therefore, the KAMHS was written based on this content and related questions about stigma and people's behaviours and intentions.

Following a brief literature review of current MHL measures, an initial pool of items was put together covering 'Mental Health Knowledge', 'Attitudes towards Mental Health', 'Help-seeking behaviours towards Mental Health' and 'Public stigma towards Mental Health'. All items for knowledge towards mental health came directly from the Guide Cymru resource as this would pose as the evaluation for the Guide Cymru.

Items were chosen in order to represent four domains of MHL; 1) the Knowledge scale contained factual statements mental health problems (e.g., "*Most mental disorders start before the age of 18*") and had 28 items, 2) the Good Mental Health Behaviours scale contained statements about mental health behaviours (e.g., "*Healthy eating helps you maintain good mental health*") and contained 12 items, 3) the Stigma and Attitudes scale contained statements about stigmatic beliefs about mental health problems (e.g., "*Mental disorders are caused by people being wicked or bad*") and had 14 items, and 4) the Help-Seeking scale contained statements about thoughts and intentions related to help-seeking for, and disclosure of, mental health problems (e.g., "*If I have a mental health difficulty, I know I will ask for help*") and contained eight items. Finally, the questionnaire also contained ten statements related to Social Desirability (e.g., "*I have never dropped litter*"). The first four domains are in line with the aims of The Guide Cymru, and most programmes aimed at mental health in adolescents and the reduction of stigma related to mental health. The final domain (Social Desirability) was included to get a measure of whether the responder is using

positive impression management when answering questions where there may be stigma and social desirability not to be honest in their opinions.

Scale-based measurement

Participants were asked to rate their agreement with these statements on a five-point scale positioned as (Definitely True (DT), Possibly True (PT), Possibly False (PF), Definitely False (DF), Don't Know (DK)). It was decided that 'Don't Know' would be included as a response as there is evidence that this response encourages individuals without any form of knowledge to admit to it (Durand & Lambert, 1988). The apparent benefits of including DKs are an increase in the reliability of knowledge scales (Carpini & Keeter, 1993) and a reduction in bias from forcing respondents to answer items they cannot respond to due to a lack of knowledge (Durand & Lambert, 1988). If respondents who answer Don't Know where instead to offer random guesses, the infusion of the unsystematic variance would lower inter-item correlations, thereby decreasing reliability.

A five-point scale was used 'Definitely True, Possibly True, don't know, Possibly False and Definitely False. For responses that were correct (defined by the authors as responses that are factually correct or show the least stigma, or would produce the most optimum mental health, Etc.), a score of 4 would be received. A score of 3 was assigned if they missed by one category, as for example, responding 'Possibly True to a Definitely True response'. The response of a 'Don't Know' would inhibit a score of 2, reasoning was that this is the more preferred response to an inaccurate answer. A score of 1 would be given if they were three categories out, as for example, responding 'Possibly False to a Definitely True'. And finally, a score of 0 would be given to responses that were four categories out, as for example, Definitely False to a Definitely True.

Various factors that were considered

At this stage of the questionnaire development, an attempt was made to produce a questionnaire as inclusive as possible, including most areas of mental health and mental health stigma.

Having decided on the context of the questionnaire, it was deemed necessary that the language used was suitable for the use with children and adolescents. As adolescents aged between 12 and 14 years are still developing decisional and thinking skills, questions were run through the age of acquisition database for a child as young as 12 years (Kuperman, Stadthagen-Gonzalez, & Brysbaert, 2012). Questions were written clearly and understandably to avoid any ambiguity (Bell, 2007).

The cognitive capacity of adolescents to comprehend and answer questions was considered, in particular, the length of the questionnaire. For our target population of adolescents aged between 12 to 14 years, less than 20 words per question are recommended (Arthur, Smith, White, Hawley, & Koziol, 2017). Ten to fifteen minutes is the recommended time for a survey by an adolescent of this particular age group (Rea & Parker, 2005) as concentration and reluctance to complete the survey can also impact the data quality. The questionnaire was, therefore, kept manageable in terms of length. The pilot phase of the questionnaire development was approached with maximum number of possible questions to reduce and improve quality in the following versions of the questionnaire.

Phase C: Preliminary review of questions

Once a draft of the KAMHS was developed, it was submitted for review to the Governance group, which included staff at Action for Children, The Senior Policy Advisor of The National Association of Head Teachers and The Child and Adolescent Mental Health Service Advisor to Welsh Government. The purpose of this review was to receive feedback on the interpretation of the questions, structure and readability of the questionnaire. Each

member of the group was invited to comment on the general layout and appearance of the questionnaire.

Following this, two age-appropriate young people (aged 13 and 14 years) reviewed each of the questions for understanding, clarity and accuracy of wording. They also provided feedback on the content and relevance of each question. At each stage of developing the KAMHS, these children provided feedback on the length of the question, the layout and content of the questionnaire.

Following review, the questionnaire was revised, and several changes, such as question re-wording and phrases, were made based on the input received. At the end of the preliminary review, the questionnaire comprised the questions that made up KAMHS Version 1.

Phase D: Pilot testing of KAMHS Version 1

The study aimed to evaluate the psychometric properties of KAMHS (V1) on a sample of age-appropriate participants, see Appendix A.

Method

Participants

The KAMHS (V1) was administered to 635 Year 9 secondary school pupils recruited from 4 schools located in Llanelli, Cardiff, Merthyr Tydfil, and Torfaen. Participants were aged between 13-14 years, with equal representation across genders (331 Females and 304 Males).

Procedure

All participants completed KAMHS (V1) during morning registration. Data collection was performed in the classroom via pencil and paper questionnaires. Completed questionnaires contain no personal information to preserve anonymity.

Measures

KAMHS (V1) consisted of 72 items that aimed to measure attitudes to mental health across five domains: Knowledge (28 items), Good Mental Health Behaviours (12 items), Stigma/attitudes (14 items), Help-seeking behaviours (8 items) and Social Desirability (10 items).

Ethical Approval

Ethical permission for the study has been obtained from Swansea University (Approved 28/10/2018, Department of Psychology Ethics Committee, ref.: 2018–0272-259). See Appendix B.

Results

As well as formal statistical analysis, informal comments were elicited from the teachers and the pupils who completed the KAMHS (V1). Many pupils stated that they struggled to get through all 72 items and that some individual items were hard to understand. Hence, our formal analysis would aim to reduce the items by eliminating items that 1) had ceiling or floor problems, and 2) did not load strongly onto their intended scale.

Descriptive statistics

Table 3.1. Summary of ranges of scores and mean scores (standard deviations for the Knowledge and Attitude to Mental Health Questionnaire and internal consistency alpha values.

Subscale	Actual Range	Mean (SD)	Skew	Kurtosis	Internal Consistency Value (α)
Knowledge	(0-4)	2.46(2.8)	0.44	0.72	.58
Good Mental Health	(0-4)	2.68(.47)	0.90	-.48	.60
Lack of Stigma	(0-4)	2.67(.54)	-.223	-.288	.78
Help-seeking Behaviours	(0-4)	2.50(.96)	0.84	-.483	.73
Social Desirability	(0-4)	1.98(.64)	-.163	-.356	.74

Exploratory Factor Analysis

The data from the KAMHS (V1) were subjected to a factor analysis using Principle axis factoring with Orthogonal Varimax rotation. The Kaiser-Meyer-Olkin measure (KMO) was 0.67 indicating the data were sufficient for exploratory factor analysis. Barlett's test Sphericity, χ^2 (2556) = 5587.5, $p < .001$, showed that there were patterned relationships between the items. Using an eigenvalue cut-off of 2, seven factors explained a cumulative variance of 37.7%. The scree-plot also revealed a seven-factor solution. Items loading at .40 or greater were inspected to understand these factors. Three of the factors were easy to interpret as they contained only items from the Stigma scale (Factor 2), the Social Desirability scale (Factor 3), and the Help-seeking scale (Factor 4). The other four factors were not easily interpreted as they contained items from several scales. However, Factor 5 appeared to be related to the avoidance of mental health issues.

It was noted that many of the items from the Knowledge scale did not load onto any of the seven factors. It may be that this scale is more a test of knowledge rather than a set of

items that measure a particular attitude. Hence, the repetition of the Exploratory Factor Analysis (EFA) with these items removed. The KMO was 0.76, indicating the data were sufficient for exploratory factor analysis. Barlett's test Sphericity, χ^2 (946) = 29009.2, $p <$ .001, showed that there were patterned relationships between the items. Using an eigenvalue cut-off of 2, four factors explained a cumulative variance of 35.8%. The scree-plot also revealed a four-factor solution. Items loading at .40 or greater were inspected to understand these factors. Three of the factors were easy to interpret as they contained only items from the Stigma scale (Factor 1), the Social Desirability Scale (Factor 2), and the Help-Seeking scale (Factor 3). The fourth factor appears to be strongly related to openness to their mental health problems and encouraging others to seek help. This factor was termed "(lack of) self-stigma".

Discussion and revision of KAMHS Version 1

In light of the results from Study 1, KAMHS (V1) was revised. There was strong verbal feedback from both pupils and teachers that the questionnaire was too long, and students struggled to complete all the items. Items were reviewed based on their performance on the EFA, and possible ceiling/floor effects of reducing the number of items in the KAMHS. However, the finding of a factor of "self-stigma" in Study 1, and the increasing literature suggesting the importance of this factor in help-seeking behaviour (Vogel, Wade, & Haake, 2006), and actual current mental health (Corrigan, Watson, & Barr, 2006), encouraged us to try and include this as one of the domains covered by the KAMHS. So, items were added/rewritten with this in mind.

Pilot testing of KAMHS Version 2

KAMHS (V2) consisted of 38 items that aimed to measure attitudes to mental health across six domains: Knowledge (12 items), Good Mental Health Behaviours (6 items), Stigma/attitudes (6 items), Self-stigma (4 items), Help-seeking behaviours (4 items) and Social Desirability (6 items), see Appendix C.

Participants were asked to rate their agreement with these statements on a five-point scale (Strongly Agree (SA), Agree (A), Don't Know (DK), Disagree (D), Strongly Disagree (SD). The response received a score of 4 if it was "correct" (defined by the authors as factually correct responses, show the least stigma, or would produce the most optimum mental health, Etc.). A score of 3 was assigned if they missed by one-category (e.g., responding A to a SA), and 2 if they were two categories out, Etc. Thus, a DK would always score 2 points, while responding SA to an SD question got a score of 0. It was decided to alter the true/false response scale to a Strongly agree/ disagree scale as this Likert scale is a good reflection for attitude and opinion-based items that allow for intense scale responses (Likert, 1932).

It was decided that don't know would be placed in the middle of the scale as research has often found that respondents are more likely to choose 'undecided or don't know' categories when they are presented off to the side of the scale (Holdaway, 1971). Inclusion of don't know as a midpoint choice is a viable option for respondents who generally have no opinion/ neutral or don't know the response to a knowledge-based item (Courtenay & Weidemann, 1985).

Methods

Participants

The KAMHS (V2) was administered to 574 secondary school pupils from 5 schools located in Cardiff, Carmarthen, Swansea, Ystrad Mynach and Rhymney. Participants were aged between 13 and 14 years (M= 238, F= 336). Half of the sample completed the questionnaires in the medium of Welsh (N=278).

Procedure

All participants completed KAMHS (V2) during morning registration. A subsample of participants was asked to complete the KAMHS a month later. Data collection was performed in the classroom via pencil and paper questionnaires.

Ethical approval

Ethical permission for the study has been obtained from Swansea University (Approved 23/12/2018, Department of Psychology Ethics Committee, ref.: 2018-0301-287, see Appendix D.

Measures

KAMHS (V2) consisted of 38 items that aimed to measure attitudes to mental health across six domains: Knowledge (12 items), Good Mental Health Behaviours (6 items), Stigma/attitudes (6 items), Self-stigma (4 items), Help-seeking behaviours (4 items) and Social Desirability (6 items).

Results

Exploratory Factor Analysis

In line with the pilot testing of V1, the items from the Knowledge scale were not included in the EFA. The rest of the data from the KAMHS (V2) were subjected to a factor analysis using Principle axis factoring with orthogonal Varimax rotation. The KMO was 0.73, indicating the data were sufficient for exploratory factor analysis. Barlett's test Sphericity, χ^2 (325) = 2145,3, $p < .001$, showed that there were patterned relationships between the items. Using an eigenvalue cut-off of 2, five factors explained a cumulative variance of 43.3%. The scree-plot also revealed a five-factor solution. Items loading at .40 or greater were inspected to understand these factors.

Factor 1 contained all eight items from both the Help-seeking and (lack of) Self-stigma scales. Factor 2 contained three items from the (lack of) Stigma scale, Factor 3 contained three items from the Social Desirability Scale, and Factor 4 contained three items from the Good Mental Health scale and one item (negatively weighted) from the (lack of) Stigma scale. The fifth factor was hard to interpret but contained two items, with strong negative weights, relating to the use of drugs/alcohol in coping with mental health problems.

Descriptive Statistics

Scores

Each of the subscales of the KAMHS produced mean scores that were near the middle of the possible range of scores (0 – 4) with a degree of variation among the participants. Thus, the scales appeared well-centred and able to evaluate individual differences.

Table 3.2 Summary of ranges of scores and mean scores (standard deviations for the Knowledge and Attitude to Mental Health Scales and internal consistency alpha values.

Subscale	Range	Time 1 Mean (SD)	Time 2 Mean (SD)	Difference	Time 1 Internal Consistency value (a)	Time 2 Internal Consistency value (a)	Test Re-test
Knowledge	(0-4)	2.29 (0.29)	2.11 (0.26)	-0.18	.41	.30	.48**
Good Mental Health	(0-4)	2.48 (0.51)	2.37(0.53)	-0.09	.44	.51	.46**
Lack of Stigma	(0-4)	2.32 (0.50)	2.26 (0.55)	-0.06	.54	.55	.50**
Lack of Self Stigma	(0-4)	2.26 (0.79)	2.21 (0.83)	-0.05	.76	.75	.54**
Help-seeking behaviours	(0-4)	2.12 (0.86)	2.02 (0.86)	-0.10	.74	.73	.54**
Social Desirability	(0-4)	1.92 (0.51)	1.79 (0.66)	-0.12	.18	.53	.60**

Internal Reliability

All but social desirability scale showed acceptable levels of internal reliability both at the first test and at re-test. Social desirability failed to demonstrate an acceptable level of internal reliability.

Test-retest reliability

Finally, the test-retest correlations were of low to modest values which is in keeping with similar research by (Michaels & Corrigan, 2013) found test re-test reliability of the 'Knowledge of Mental Illness test' as fair to satisfactory ranging between .50 and .70

Discussion and revision of KAMHS Version 2

Following the factor analysis, the final factor was labelled 'avoidant coping' where avoidance behaviours and escape coping are a maladaptive form of coping that causes an individual to change their behaviour to avoid thinking and feeling the emotions they have along with mental health. This is an essential addition as avoidance coping has detrimental effects on mental health (Herman-Stabl, Stemmler, & Petersen, 1995). Other items were amended/ added/rewritten with this in mind and bases on their loading within the factor analysis.

Pilot testing of KAMHS Version 3

KAMHS (V3) consisted of 50 items that aimed to measure attitudes to mental health across seven domains: Knowledge (12 items), Good Mental Health Behaviours (6 items), Stigma/attitudes (6 items), Self-stigma (6 items), Help-seeking behaviours (7 items), Social Desirability (8 items), and Avoidant Coping (5 items). Psychometric properties of KAMHS (V3) were assessed using a sample of age-appropriate participants, see Figure 3.2 at the end of the chapter for the full questionnaire and Appendix E for the outline of each sub-scale.

Method

Participants

The KAMHS (V3) was administered to 559 Year 9 secondary school pupils, recruited from four schools located in Denbighshire and one in Gwynedd.

Participants were aged between 13 to 14 years with equal representation across genders (268 Females, 282 Males, and 9 Prefer not to say).

Procedure

All participants completed KAMHS (V3) during morning registration. Data collection was performed in the classroom via pencil and paper questionnaires.

Measures

KAMHS (V3) consisted of 50 items that aimed to measure attitudes to mental health across seven domains: Knowledge (12 items), Good Mental Health Behaviours (6 items), Stigma/attitudes (6 items), Self-stigma (6 items), Help-seeking behaviours (7 items), Social Desirability (8 items), and Avoidant Coping (5 items).

Results

Descriptive Statistics

Table 3.3 Summary of ranges of scores and mean scores (standard deviations for the KAMHS V3 and internal consistency alpha values).

Subscale	Range	Time 1 Mean(SD)	Time 2 Mean(SD)	Difference	Time 1 Internal Consistency value (a)	Time 2 Internal Consistency value (a)	Test Re-Test	Skew (SE)	Kurtosis (SE)	Means male : female
Knowledge	**(0-4)**	**2.21 (0.30)**	**2.21 (0.30)**	**0.00**	**.36**	**.35**	**.40****	**0.10 (0.10)**	**3.63 (0.21)**	**2.21 : 2.21**
Good Mental Health	**(0-4)**	**2.53 (0.51)**	**2.58 (0.52)**	**0.05**	**.62**	**.61**	**.41****	**0.14 (0.10)**	**0.27 (0.21)**	**2.59 : 2.49**
Lack of Stigma	**(0-4)**	**2.94 (0.58)**	**2.95 (0.59)**	**0.02**	**.67**	**.67**	**.47****	**-0.24 (0.10)**	**0.08 (0.21)**	**2.81 : 3.06 #**
Lack of Self-Stigma	**(0-4)**	**2.35 (0.74)**	**2.33 (0.76)**	**-0.02**	**.81**	**.83**	**.60****	**-0.40 (0.10)**	**0.19 (0.21)**	**2.46 : 2.25 #**
Help-seeking behaviours	**(0-4)**	**2.33 (0.73)**	**2.32 (0.78)**	**-0.01**	**.80**	**.82**	**.64****	**-0.02 (0.10)**	**0.23 (0.21)**	**2.48 : 2.19 #**
Avoidant coping	**(0-4)**	**2.25 (0.62)**	**2.26 (0.66)**	**0.01**	**.40**	**.50**	**.45****	**-0.19 (0.10)**	**0.48 (0.21)**	**2.24 : 2.27**
Social Desirability	**(0-4)**	**2.01 (0.62)**	**2.06 (0.63)**	**0.05**	**.69**	**.67**	**.56****	**0.09 (0.10)**	**-0.16 (0.21)**	**1.92 : 2.12 #**

****** Correlation is significant (2-tailed) $p < .01$.

Significant differences between means (2-tailed) $p < .05$.

Preliminary Analysis

All variables were screened for missing values. Examination of skew and kurtosis indicated that all variables met normality assumptions and were appropriate for Exploratory Factor Analysis and Confirmatory Factor Analysis.

Data Analysis Strategy

To examine the empirical structure of the KAMHS V3, an EFA was conducted on half the sample, followed by a CFA on the remaining sample to cross-validate the EFA structure on Time 1 data. The full sample of 559 pupils was randomly split into two samples using random sample of cases command in SPSS, with 279 in the EFA sample and 280 in the CFA sample (Bandalos, 1993).

Sample 1

Exploratory Factor Analysis

Exploratory factor analysis was used in the present study to investigate the factor structure of the KAMHS by analysing the relationships between items using the first half of the sample. In line with the previous two studies, the items from the Knowledge scale were not included in the EFA. The rest of the data from the KAMHS were subjected to a factor analysis using Principal Component Analysis with Oblimin for oblique rotation due to the assumption that many of the MHL factors in the analysis will be correlated (Corner, 2009). The Kaiser-Meyer-Olkin was 0.81, indicating the data were sufficient for exploratory factor analysis. Barlett's test of Sphericity was also significant (χ^2 (435) = 2718.53, $p < .001$), indicating that there was an adequate correlation between the variables and, therefore that EFA was appropriate.

Using an eigenvalue cut-off of 2, four factors explained a cumulative variance of 43.21.%. The scree-plot also revealed a four-factor solution. Items loading at .40 or greater were inspected to understand these factors Factor 1 contained all 13 items from the Help-

seeking and (lack of) Self-Stigma scale. Factor 2 contained all six items for Good Mental Health Behaviours; Factor 3 contained six items from the (lack of) Stigma scale. The fourth factor contained three items from the (lack of) Avoidant Coping scale, see Table 3.4.

Table 3.4 Exploratory Factor loadings for the 30 items in the KAMHS (excluding Knowledge-based items)

Item text	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*
Factor 1: Help-seeking & Self stigma				
If I had a mental disorder, I would not feel ashamed	69			
If I had a mental disorder, I would not avoid socialising	41			
I would feel a failure if I had a mental disorder	73			
If I had a mental disorder, I would feel worthless like I had failed my family	68			
I would feel weak if I had a mental disorder	73			
If I had a mental disorder, I would feel I'd let everyone down	73			
I wouldn't tell anyone if I had a mental health problem in case, they made fun of me	64			
I am confident that I could ask for help if I had a mental health problem	59			
For me, it would be easy to ask for help for a mental health problem	67			
If I had a mental health problem, I would try to hide it from everyone	71			
If I had a mental health problem, I would be happy to tell my teacher or school counsellor	63			
It's best not to tell anyone about your mental health problems	52			
If I had a mental health problem, I would not tell friends and family	66			
Factor 2: Good Mental Health Behaviours				
The same things that help our physical health also help our mental health		70		
Sometimes things that stress you should be faced head-on		56		
Healthy eating helps you maintain good mental health		67		
A good night's sleep is good for your mental health		59		
Regular exercise has no effect on your mental health		45		
Talking about your feelings can help with mental health problems		43		
Factor 3: Stigma				
If my friend had a mental disorder, I would avoid them			53	
I would not like to be in the same classroom as someone with a mental disorder			63	
I would feel comfortable sitting next to a person with a mental disorder			67	
I wouldn't want to marry or date a person with a mental disorder			66	
I would be happy for a person with a mental disorder to come to my house			59	
Mental disorders are caused by people being wicked or bad			50	
Factor 5: Avoidant Coping				
Drinking alcohol never helps when you are stressed*				
It's often best to ignore problems and hope they go away				42
Taking illegal drugs can never help when you are stressed by something*				
The best way to cope with problems is not to think about them				53
I do my best not to think about my problems				58

*Did not load

Sample 2

Confirmatory Factor Analysis

As the data is ordinal, a confirmatory factor analysis using a diagonally weighted least squares (DWLS) estimator to determine whether the factor structure obtained using exploratory factor analysis could be confirmed on the second half of the sample. Data was analysed using Lavaan package version 0.5-22 (Rosseel, 2012). For the CFA, we decided to keep help-seeking behaviours and a lack of self-stigma scales separate as these constructs would be performed separately with future research as self-stigma may have distinct and significant contributions to other aspects of MHL (Tucker et al., 2013). Therefore, Help-seeking behaviours, lack of Self-stigma, lack of Stigma, Good Mental Health Behaviours, and lack of Avoidant coping subscales were analysed. Items 21 and 8 were removed for the confirmatory factor analysis as they did not load in the EFA. A confirmatory factor analysis was then conducted on the remaining 280 participants to determine whether the factor structure required modification. Items 37 and 45 were removed as they loaded poorly (below .15). The model resulted in an excellent fit as the Comparative Fit Index (CFI), and Tucker Lewis Index (TLI) were both above the recommended value of .90 where x^2 *(df= 289) = 372.15, CFI = .90, TLI= .90, and RMSEA =.032.* Each item loaded significantly on its respective latent factor and all specified covariances were significantly different from zero (see Table 3.5).

Table 3.5 Standardised Factor Loadings in the CFA, Standard Errors and Omega reliability of KAMHS subfactors.

Factor and items	ω	λ	SE
Help-seeking behaviours	.76		
Q5. I wouldn't tell anyone if I had a mental health problem in case, they made fun of me		.52	0.00
Q11. For me, it would be easy to ask for help for a mental health problem		.68	0.17
Q24. If I had a mental health problem, I would try to hide it from everyone		.69	0.19
Q42. If I had a mental health problem, I would be happy to tell my teacher or school counsellor		.59	0.19
Q46. If I had a mental health problem, I would not tell friends and family		.57	0.16
Q1. I am confident that I could ask for help if I had a mental health problem		.44	0.17
Q45. It's best not to tell anyone about your mental health		-	-
Lack of Self-stigma	.80		
Q10. If I had a mental disorder, I would not feel ashamed		.56	0.00
Q23. If I had a mental disorder, I would not avoid socialising		.42	0.13
Q25. I would feel a failure if I had a mental disorder		.75	0.16
Q33. If I had a mental disorder, I would feel worthless like I had failed my family		.74	0.16
Q43. I would feel weak if I had a mental disorder		.66	0.14
Q49. If I had a mental disorder, I would feel I'd let everyone down		.66	0.15
Lack of Stigma	.66		
Q2. If my friend had a mental disorder, I would avoid them		.43	0.00
Q16. I would not like to be in the same classroom as someone with a mental disorder		.55	0.35
Q27. I wouldn't want to marry or date a person with a mental disorder		.68	0.35
Q36. I would be happy for a person with a mental disorder to come to my house		.61	0.36
Q17. I would feel comfortable sitting next to a person with a mental disorder		.48	0.34
Q38. Mental disorders are caused by people being wicked or bad		.16	0.24
Good Mental Health Behaviours	.61		
Q34. The same things that help our physical health also help our mental health		.25	0.00
Q35. Sometimes things that stress you should be faced head-on		.35	0.60
Q39. A good night's sleep is good for your mental health		.43	0.81
Q44. Regular exercise has no effect on your mental health		.24	0.62

Q50. Talking about your feelings can help with mental health problems		.64	1.40
Q37. Healthy eating helps you maintain good mental health		-	-
Avoidant Coping	.53		
Q6. It's often best to ignore problems and hope they go away		.88	0.00
Q47. I do my best not to think about my problems		.24	0.13
Q40. The best way to cope with problems is not to think about them		.33	0.16

Note. λ= Standardized factor loading, SE= Standardized error of factor loading.

Distribution of scores

The psychometric properties of the scales are shown in Table 3.3. The mean scores for each of the scales of the KAMHS was approximately in the middle of the possible range of scores (0 – 4), with most of the range being used for all of the scales. Hence, there were no signs of floor or ceiling effects. Levels of skew were small for all the scales. Levels of kurtosis were small for all of the scales, with the exception of the Knowledge scale, which showed leptokurtosis.

Internal Reliability

Once the CFA model was estimated, functions from the semTools package (Jorgensen et al., 2016) were used to obtain reliability estimates based on the CFA model object created by Lavaan. Omega reliability was calculated for the internal reliabilities of the KAMHS are shown in Table 2. (Lack of) Self-stigma (lack of) Stigma, and Help-seeking Behaviours exhibited acceptable or good reliability (ω = .66 to .80) and Good Mental Health Behaviours and (lack of) Avoidant Coping, ω demonstrated poor internal reliability (ω=.61 to .53).

As knowledge and social desirability were not included in the CFA model, alpha reliability was calculated. Social desirability scale had acceptable internal reliability (α = .69). The Knowledge scale had poor internal reliability (α = .36). However, this low internal

reliability might be expected as this scale is not a measure of an "attitude" but a series of questions about mental health issues, and pupils may be aware of some aspects of mental health knowledge but not others, resulting in the poor internal consistency of this scale (See Discussion section).

Test re-test reliability

Test re-test was completed at 12 weeks as this was the period for delivery of a MHL intervention 'The Guide Cymru' that the KAMHS was needed as an outcome measure with the hope that any differences during this period would be minimal. The Guide Cymru consists of 6 modules of MHL; therefore, 12 weeks were provided to allow schools time to deliver the modules of MHL to pupils. Twelve weeks after the initial data collection, the same schools completed the KAMHS, (n = 329). Pearson's correlation coefficients are reported as measures of test-retest reliability. The test-retest reliability for each of the scales of the KAMHS was fair to good (as defined by (Cicchetti, 1994), ranging from .40 to .64.

Discussion of KAMHS Version 3

Factor Structure of KAMHS Version 3

The Exploratory Factor Analysis revealed a five-factor model, combining two original factors from Study 1 and Study 2 (*Help-seeking and self-stigma*). This is not unusual as help-seeking behaviours are often predicted by self-stigma (Vogel et al., 2006) identifying that self-stigma predicted attitudes toward seeking professional psychological help and willingness to seek counselling help above any previously identified predictors such as sex, previous counselling experience, self-esteem and tendency to self-disclose. Therefore, these constructs are positively related, and it is not easy to separate these as observed within the exploratory factor analysis. However, it was decided that analyse of these constructs would be performed separately with future research as self-stigma may have significant contributions to other aspects of MHL.

To discuss the model of fit of the CFA, consideration of the criteria of the various model fit indices must be made. It has been suggested that RMSEA values less than 0.05 are good, values between 0.05 and 0.08 are acceptable (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Therefore, the RMSEA value of 0.044 in this sample indicates a good fit. The CFI value is above 0.9, which also shows a good fit (Bentler, 1990).

Following a close examination of the four items (Item 44 '*Regular exercise has no effect on your mental health'*, Item 1 '*I am confident that I could ask for help if I had a mental health problem'*, Item 50 '*Talking about your feelings can help with mental health problems'* and Item 14 '*I always keep my promises'*) that did not load onto a particular factor led to discussions based around inclusion of such items and it was decided that it would still be included in the final version of the KAMHS as they appeared pertinent to the evaluation of the Guide Cymru. In particular, for items 1 and 50, confidence and talking about mental health on a daily basis is a key aspect of the Guide Cymru so we believed that inclusion of these questions would be beneficial for the evaluation. Further to this, the Guide Cymru covers exercising as a coping strategy so inclusion of item 50 would also be beneficial to the evaluation.

Overall, the data provide satisfactory evidence that KAMHS is a reliable and valid measure of MHL. Exploratory and confirmatory factor analysis support a consistent, five-factor structure. The five subscales of stigma, self-stigma and help-seeking behaviours, social desirability, good mental health behaviours and avoidant coping appear to be separate but related factors.

Internal consistency

Alpha coefficients obtained for KAMHS (V3) are shown in Table 3.3. Six of the scales (Help-seeking behaviours, stigma, self-stigma, social desirability, avoidant coping and

good mental health behaviours) exhibited good or excellent alphas between .50 and .83. The Knowledge-based scale had poor internal reliability (.35, .36).

The Knowledge-based scale includes several different aspects of knowledge or understanding of mental health, such as various mental health disorders and treatments. This could be explained by the Knowledge-based scale; some items tap into multiple factors rather than a single dimension (Cortina, 1993).

Test re-test reliability

The Intraclass correlation coefficient (ICCs) were classified as follows: 'excellent' (>80) 'good'(.61-.80), 'moderate' (.41-60), 'poor' (>.40) (McGraw & Wong, 1996). The test re-test reliability for the final version of the KAMHS was moderate, ranging from (.40 to .64). Data quality and reliability have shown to be much lower in children than adults (Fuchs, 2008). A possible explanation for such differences may be reflected as the cognitive development stage of a 14-year-old, and younger have limited cognitive capacities as compared to adults (Borgers, De Leeuw, & Hox, 2000). Compared to adults, research has found that children tend to use more satisficing techniques when they find the topic of research uninteresting or have a poor understanding of the research topic (Borgers, De Leeuw, & Hox, 2000). By the ages of 11 to 15 years, cognitive functioning is well developed, however can be very sensitive to particular topics which can influence their openness to answering particular questions and ultimately the reliability of the research. Age and gender are key influences on cognitive development as research has often found that girls often develop somewhat quicker than boys in relation to for example language skills (Huttenlocher et al. 1991). Age is also a key factor, as research by Borgers et al. (1999) demonstrated how age has an influence upon internal consistency of a scale as younger children aged (9-10 years) showed less internal consistency compared to children aged 11-15 years.

Further, the research considers alternative factors such as; the influence of classmates during completion, motivation and boredom can also impact data quality and reliability in child samples (Borgers et al., 2000). Following this, motivation may be a key influencer as the pupils will have completed the survey twice without any intervention.

These results suggest that the KAMHS can be used over time to assess the efficacy of interventions such as the Guide Cymru aimed at increasing the MHL of adolescents. According to a systematic review (Wei, McGrath, Hayden, & Kutcher, 2016), out of the 15 instruments developed that assessed internal consistency, five of them demonstrated poor quality properties. Quality of instruments was determined by the internal consistency of ≥ 0.70, and reliability as Pearson's $r \leq 0.80$.

MHL instruments cover a wide range of mental health constructs, and this can considerably decrease internal consistency (Castellvi et al., 2020). This may help explain the moderate reliability of the KAMHS, as the KAMHS includes help-seeking behaviours, avoidant coping, self-stigma, stigma, several mental disorders such as ADHD, Anxiety and Schizophrenia. It may be likely that the capacity of the KAMHS to promote mental health and to prevent mental disorders may have decreased its internal consistency.

General Discussion

Increasing levels of MHL amongst adolescents contributes to the promotion of mental health and may potentially play a role in early identification and intervention when mental health difficulty occurs (Jorm, 2012). Having MHL enables the prevention, identification, and adequate and early management of psychopathological symptoms (Jorm, 2000). Moreover, improving adolescent's knowledge about mental health is crucial for reducing stigma and improving attitudes towards mental health (Watson et al., 2004). This research aimed to establish a valid and reliable instrument for assessing adolescents' attitudes toward mental health- The Knowledge and Attitude to Mental Health Scales (KAMHS). This

measure conceptualises MHL as 1) knowledge of mental health, 2) good mental health behaviours, 3) self-stigma, 4) stigma to others, 5) avoidant coping, and 6) help-seeking. This measure maps onto but also goes beyond other research in generating six scales derived from the literature on MHL as for example, Jorm et al. (1997) conceptualises MHL as the ability to identify mental health disorders, the risk factors involved and the ability to seek appropriate help. Further to this, in line with Kutcher et al. (2016), MHL contains the ability to maintain good mental health behaviours along with the ability to identify stigmatic attitudes and help-seeking behaviours. This questionnaire also includes a measure of social desirability that can be used to counter participants who are being dishonest or engaging in positive impression management due to issues of stigma. Social desirability can be a threat to the validity of scales, and with the sensitive topic of mental health, it is vital to include this scale.

The final version of the KAMHS contains 50 items that are appropriate for use in adolescents and can be completed in 15-20 minutes. The psychometric properties of the KAMHS are fair to good, showing a similar pattern of results to other MHL measures (Michaels & Corrigan, 2013; Rüsch et al., 2011). A recent review by Bale and Costello (2018) identified a lack of psychometrically sound MHL scales for children, highlighting a significant limitation in the current methods of child-focused MHL.

MHL has not been consistently conceptualised in the literature, and there is no gold standard measure of MHL (Jung, von Sternberg, & Davis, 2016). Over the past few years, there has been an increase in the number of MHL measures attempting to bridge the gap beyond the use of vignettes (O'Connor et al., 2014); however, none are free of limitations due to the multiple aspects of MHL (Jorm et al., 1997).

Currently, in the UK, there are low levels of MHL in secondary schools (Hart, Mason, Kelly, Cvetkovski, & Jorm, 2016) and among university students (Furnham, Cook, Martin, &

Batey, 2011). Students lack sufficient MHL skills to recognise common mental health problems and seek appropriate professional help when necessary (Hunt & Eisenberg, 2010). Therefore, it is important to have a reliable and valid measure of MHL.

Strengths and Limitations

This new measure of MHL began with a vast pool of items, went through several stages of revision, and was developed via factor-analytic methods (Clark & Watson, 2016). The finalised measure demonstrated a robust factor structure and good internal consistency. A wide variety of scales were used measuring multiple aspects of MHL (Help-seeking, good mental health behaviours, stigma, self-stigma, avoidant coping, knowledge and social desirability) were examined. A further strength to the development of this measure was the inclusion of age-appropriate pupils during the developmental stages. These children added valuable feedback upon the length, content and understanding of the questions proposed.

This study has several strengths, including large sample size and addressing a gap in the assessment of adolescent MHL. Psychometric evaluation was performed using the KAMHS; the findings of which contribute to the field by enabling future use and evaluation of the Guide Mental Health Literacy programme in other countries and populations. As this is a self-report tool, one major challenge in measuring MHL of adolescents is the possibility that social desirability influences participants' responses (Rüsch et al., 2011), (Jung et al., 2016). Furthermore, research has highlighted that mental health measures where higher scores indicate better mental health and well-being appear to be strongly impacted by social desirability bias (Rickwood & Coleman-Rose, 2023). This questionnaire incorporates a measure of social desirability to counter these factors. This measure may also be helpful in further determining the relation between knowledge, attitudes and good mental health behaviours. Through a multifaceted measure of MHL, researchers are able to go beyond a score of MHL and capture strengths and possible indicators of where improvement is needed

within the subscales of MHL. For example, intentions to seek help, self-stigma and avoidance coping behaviours, which could be beneficial to researchers to use to then target and provide appropriate interventions within these areas of MHL. This measure may therefore be beneficial for researchers as each of these subscales demonstrate good reliability and is easy to administer.

Notably, large samples of Year 9 pupils (aged 13 to 14 years) were used to determine the psychometric properties of the KAMHS. This measure, however, is limited to that of a Year 9 UK population cohort and may not be generalisable of some of the conclusions. Future research may therefore consider testing the KAMHS in other age groups and cultures to ensure generalisability. Finally, all data were limited to self-report methodology. Such issues of self-report may include possibility of exaggeration, providing incorrect responses or as respondents may not be responding 100% truthfully. Therefore, these are susceptible to the limitations of using a single method. We did however add in a measure of social desirability to try and address some of the issues as discussed with self-report.

Chapter summary

This chapter describes a detailed review of current MHL measures and addresses the need for an appropriate measure of MHL to evaluate the Guide Cymru. A detailed description is outlined of the development and psychometric evaluation of the KAMHS. Psychometric evaluation indicates that the KAMHS showed good internal constancy and moderate test-retest validity (.40–.64). The final version of the KAMHS contains 50 items that are appropriate for use in children and adolescents. Further, the KAMHS can be used over time to assess the efficacy of MHL in adolescent populations, suggesting the KAMHS is an appropriate measure for the evaluation of the Guide Cymru. The next chapter will consider the relationship between a multifaceted measure of MHL (KAMHS) and the mental health status of adolescents.

Figure 3.2 Knowledge and Attitudes towards Mental Health Scale (KAMHS)

Version 3- Guide Cymru – Training Survey For Pupils (KAMHS)

Date:_____

What is the name of your school? _____

What class are you in? _____

What is your gender? _____

What is your age? _____

To help us match your survey responses between the start and end of the course, please answer the following questions. These answers allow you to remain anonymous and still allow us to see if your scores on the survey change before and after participating in the class.

a) The name of your first pet _____

b) Date of your birth **day** (e.g, 21st) _____

c) The number of your house_____

d) Your favourite colour _____

For each of the following statements please select which answer (Strongly Agree, Agree, Don't know, Disagree, or Strongly Disagree) you think is best by making an X in the appropriate box. If you are sure you don't know the answer then you can put an X in the Don't Know box.

		Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
1	I am confident that I could ask for help if I had a mental health problem					
2	If my friend had a mental disorder I would avoid them					
3	An Anxiety Disorder happens when a person's brain detects the presence of danger- such as a dog barking					
4	I sometimes think bad thoughts about people					
5	I wouldn't tell anyone if I had a mental health problem in case they made fun of me.					
6	It's often best to ignore problems and hope they go away					
7	Most mental disorders start before the age of 18					

8	Drinking alcohol never helps when you are stressed					
9	I have never dropped rubbish					
10	If I had a mental disorder I would not feel ashamed					
11	For me, it would be easy to ask for help for a mental health problem					
12	Obsessions are thoughts that occur often that the person wants to get rid of but can't					
13	If you are worried about something, then you probably have Generalised Anxiety Disorder					
14	I always keep my promises					
15	Medicines should never be used to treat a mental disorder					
16	I wouldn't want to be in the same classroom as someone with a mental disorder					
17	I would feel comfortable sitting next to a person with a mental disorder					
18	People with Schizophrenia have a split personality					
19	I always admit when I am wrong					
20	Attention Deficit Hyperactivity Disorder (ADHD) is caused by watching too much TV or eating too much					
21	Taking illegal drugs can never help when you are stressed by something					
22	I am always honest					
23	If I had a mental disorder I would not avoid socialising					
24	If I had a mental health problem I would try to hide it from everyone					
25	I would feel a failure if I had a mental disorder					
26	Vitamins and yoga are effective treatments for most mental disorders					
27	I wouldn't want to marry or date a person with a mental disorder					

28	Emotions are controlled by your heart					
29	Severe and repeated stress can affect the brain					
30	I always do what my parents/ carers ask first time					
31	People with Bipolar Disorder have periods of clinical depression and periods of Mania					
32	Schizophrenia can be treated with medication and psychological therapy					
33	If I had a mental disorder, I would feel worthless like I had failed my family					
34	The same things that help our physical health also help our mental health					
35	Sometimes things that stress you should be faced head-on					
36	I would be happy for a person with a mental disorder to come to my house					
37	Healthy eating helps you maintain good mental health					
38	Mental disorders are caused by people being wicked or bad					
39	A good night's sleep is good for your mental health					
40	The best way to cope with problems is not to think about them					
41	I have said unkind things about a person					
42	If I had a mental health problem, I would be happy to tell my teacher or school counsellor					
43	I would feel weak if I had a mental disorder					
44	Regular exercise has no effect on your mental health					
45	It's best not to tell anyone about your mental health problems					
46	If I had a mental health problem, I would not tell friends and family					
47	I do my best not to think about my problems					

48	I always wash my hands before every meal					
49	If I had a mental disorder, I would feel I'd let everyone down					
50	Talking about your feelings can help with mental health problems					

Thank you!

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Chapter 4: The relationships between a multifaceted measure of Mental Health Literacy and Mental Health

Chapter Overview

This chapter begins by exploring how adolescence is a crucial period for developing and maintaining good mental health behaviours. Moreover, this chapter recognises many factors which can influence Mental Health Literacy (MHL), followed by the relationship between MHL and mental health, which warrants further examination. This chapter aims to investigate the relationship between a multifaceted measure of MHL and mental health in a population of adolescents in Wales.

Introduction

MHL is defined as the knowledge and attitudes towards mental health that aid in recognising, managing, and preventing mental disorders (Jorm et al., 1997). As MHL is currently poor in secondary school children (Hart et al., 2016), the relationship between mental health and MHL warrants further examination.

Adolescence is an important time for enhancing both good mental health behaviours and well-being (Seedaket, Turnbull, Phajan & Wanchai, 2020), however, mental health literacy levels remain low (Tay, Tay & Klainin-Yobas, 2018), and particularly within adolescents, recognition of mental health disorders such as depression and schizophrenia remains low (Loureiro et al., 2013). In particular, the mental health disorder 'depression' is more commonly regarded as stress (Loureiro et al., 2013). In line with this, Coles et al. (2015) assessed both knowledge and beliefs of mental illness in high school students, using vignettes that portrayed both depression and social anxiety. They found that students had better recognition of depression than social anxiety, with approximately one third of students failing to recommend a peer with either depression or social anxiety to seek appropriate help and support. Moreover, adolescents poor understanding of mental disorder ultimately delays

their recovery process (Tay, Tay & Klainin-Yobas, 2018). Good MHL in young people may lead to better outcomes for those with mental disorders by identifying early signs of mental disorders and facilitating early help-seeking (Kelly et al., 2007).

The construct of MHL arises from health literacy (Kutcher et al., 2016). Health literacy is the cognitive and social skills that determine access and understanding to promote and maintain good health (Organisation, 1998). This would include knowledge of healthy diets, first aid skills, and where to seek help (Jorm, 2000). More recently, Kutcher et al. (2016) extended the definition of MHL to include four main components: 1) it must develop an individual's capacity to attain and maintain good mental health; 2) improve understanding of mental health disorders and their treatments; 3) should help to identify stigmatising attitudes to mental illness; and finally, 4) improve help-seeking behaviours. However, there is no general consensus as to the definition of MHL (Kutcher et al., 2016). Many researchers prefer to define MHL as strictly mental health knowledge (Chen et al., 2017; Furnham et al., 2011); however, some have argued that MHL should not only include knowledge but additions such as stigma, attitudes, and help-seeking behaviours (Bjørnsen et al., 2019; Kutcher et al., 2016).

Many demographic factors can influence the level of MHL in individuals. For example, Fisher and Goldney (2003) identified that MHL levels in young people (15-24 years) appeared much higher than compared in elderly individuals (65 to 74 years). This has also been supported by Farrer et al. (2008), who investigated differences in the recognition and treatment of depression and schizophrenia. The oldest group of participants (70+ years) were less likely to identify correctly and chose fewer treatment sources than the youngest group of participants aged 18-24 years. Research has also found that poor MHL is associated with educational level, even after adjustment for age and sex (Kaneko & Motohashi, 2007). In particular, poor MHL was significantly related to lower levels of education.

A lack of understanding of mental health and well-being can lead to discrimination and mental health stigma (Thornicroft et al., 2016). For example, Singletary et al. (2015) reported that only 8% of participants (aged 13–14 years) considered mental health to be part of general health and well-being, while 97% of participants perceived being healthy meant being physically healthy, including eating well and exercising. Due to adolescents' overall poor MHL, mental health disorders are often poorly recognised, and treatments are often delayed (Tay et al., 2018).

Gender differences in levels of MHL have been identified in several studies (Cotton et al., 2006; Ratnayake & Hyde, 2019). A research study with 202 adolescents aged 15 to 17 years, males demonstrated poorer MHL than females (Burns & Rapee, 2006). In this sample, females showed higher MHL in correctly labelling depression vignettes, and greater concern over a depressed peer compared to males. Depression is twice as prevalent in females than in males (Lewinsohn et al., 1998) and this may provide possible explanations for this difference. Research has identified that men and women attempt to avoid emotional distress by not thinking about problems or distractions (Brownhill et al., 2005). However, men are more likely to suppress emotions, whilst women are more prepared to release emotions through expressions and seeking help (Brownhill et al., 2005).

Further to this, research has also found that women are more likely to verbalise their emotional distress than men (Danielsson & Johansson, 2005). Research has often shown that women are more concerned about their mental health than males (Gagné et al., 2014; Oliver et al., 2005). Females often express a wide variety of emotions, which tend to be more intense than males (Brody, 1993; Timmers et al., 2003). It is possible that higher MHL in females could stem from personal experiences, which later result in greater attitudes towards mental health. Furthermore, males are more likely to engage in maladaptive ways when dealing with mental health concerns, such as the use of medication and alcohol (Cotton et al., 2006).

Research has often found, particularly amongst adults that there are gender differences in relation to levels of MHL (Lee et al., 2020, Wong, 2016, Hadjimina & Furnham, 2017). More specifically, women are more likely to recognise a mental health disorder and advise appropriate support for this (Hadjimina & Furnham, 2017, Furnham, Annis & Cleridou, 2014). Research by Furnham, Annis and Cleridou (2014) explored the influence of gender on MHL of young people aged between 17 and 22 years. They found that females were more likely to correctly recognise a mental health problem compared to that of males. Possible explanations for this difference could be explained by the higher prevalence of a particular disorder amongst that gender, as this would mean more experience and social interaction of the disorder in that gender. Further to this, through a regression analysis, the researchers identify that experience of mental health problems was a predictor of MHL. Therefore, it could be possible that these disorders are more discussed amongst that gender. Moreover, the researchers also discuss the possibility that females may therefore be more interested and engaged in information presented in the media that is relevant to them.

It is reasonable to propose that having more knowledge about mental health and mental disorders (i.e., higher MHL) would foster more positive attitudes towards mental health. However, the relationship between MHL and attitudes to mental health lacks empirical evidence to support the relationship (Lee et al., 2020). These researchers found a statistically significant difference in mental health attitudes between genders, as males reported more negative attitudes than females. They also found that higher levels of MHL were significantly associated with more positive attitudes towards mental health.

Research has shown that many members of the public are unable to correctly recognise a mental disorder and accurately identify appropriate treatments (Reavley & Jorm, 2012). Failure to correctly recognise a mental disorder or a lack of knowledge of a mental disorder symptom may significantly impact appropriate communication with health

practitioners and seeking appropriate sources of help (Jorm, 2000). The inability to accurately recognise a mental disorder can also hinder a person's recognition and management of their own or a peer's mental disorder, which may reduce the likelihood of early diagnosis and treatment (Vogel et al., 2006). However, little is known about the direct relationship between mental health and various MHL constructs, such as knowledge, attitudes towards mental health, stigma, and help-seeking behaviours.

Help-seeking Behaviours in Adolescents

Many adolescents and young people with diagnosable mental health problems do not receive professional help (Rickwood et al., 2007, Clement et al., 2015, Velasco et al., 2020). Research has identified that adolescents are the least likely age-group to seek appropriate help for a mental health problem (Beukema et al., 2022). Essau (2005) examined both the frequency and patterns of mental health service use among 12- to 17-year-old adolescents who met the DSM-IV criteria for anxiety and depressive disorder. They found that only 18.2% of adolescents that met the DSM-IV criteria for an anxiety disorder, and 23% with a depressive disorder, used a mental health service. More recently, using longitudinal data from a school-based anti-stigma intervention, Villatoro, DuPont-Reyes and Phelan (2022) found that self-reporting help-seeking remains low. Furthermore, adolescents were more likely to make help-seeking recommendations for their peers with than they were to seek help for themselves and those with lower negative stereotypes led to higher help-seeking. One of the main reasons for the lack of appropriate help-seeking in young people is being poorly informed about mental health (Jorm et al., 1997). Further to this, research by Gulliver, Griffiths and Christensen (2010) found that within a systematic review upon the perceived barriers to mental health help-seeking amongst adolescents, poor levels of MHL and awareness of available help were identified as one of the most important barriers to seeking appropriate help and support. Research has identified that young people are more likely to

seek help if they have some understanding or knowledge about mental health issues and appropriate sources of support (Rickwood et al., 2007).

Relationship between MHL and Mental Health

Young adulthood is a significant period when mental health disorders begin to emerge (De Girolamo et al., 2012). Mental well-being plays a significant role in the overall health of young people, as poor mental health is strongly correlated with developmental difficulties (Patel et al., 2007). For many years, the relationship between health literacy and significant child and adolescent health outcomes has been of interest (DeWalt & Hink, 2009). While the importance of health literacy is well acknowledged, MHL has been comparatively neglected (Jorm, 2000). Health literacy is seen as fundamental to improving a person's health outcome (Nutbeam, 2008). Research has shown that low health literacy has been consistently associated with poor health outcomes (Berkman et al., 2011; DeWalt et al., 2004). However, more is to be learned about MHL constructs and their relationship to mental health and quality of life.

Currently, there is limited research on the relationship between different aspects of MHL, for example, knowledge, attitudes towards mental health, stigma and self-stigma, intentions to seek help and current mental health. Research has often identified different forms of stigma and attitudes towards mental health as significant barriers to seeking support and help for a mental health disorder (Clement et al., 2015; Vidourek et al., 2014), but little research has looked at the direct relationship to mental health. The research available is limited to specific types of mental health disorders and overall measures of MHL. For example, Lam (2014) investigated the relationship between MHL and mental health status using a population-based survey of 1678 Chinese students. The results show that low levels of MHL are associated with moderate to severe levels of depression.

Aims and Research Objectives

To our knowledge, while the direct relationship between the different aspects of MHL (e.g., knowledge, stigma, etc.) and mental health outcomes have been studied in isolation, no study has attempted to look at these different aspects simultaneously. We, therefore, aimed to investigate the relationship between a multifaceted measure of MHL and the mental health status in a population of adolescents. Specifically, MHL was measured via the Knowledge and Attitudes to Mental Health Scales (KAMHS; Simkiss, Gray, Dunne & Snowden, 2021), which provides scales on six aspects of MHL: 1) Mental Health Knowledge; 2) Lack of Stigma; 3) Lack of Self-stigma; 4) Help-seeking Behaviours; 5) Good Mental Health Behaviours, and finally 6) Lack of Avoidant coping. The KAMHS also includes a subscale of Social Desirability, which can be used to index levels of impression management.

Current mental health was assessed via the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). A brief behavioural screening questionnaire which includes 25 items on psychological attributes, some positive and some negative, divided into five scales: 1) Emotional symptoms, 2) conduct problems, 3) hyperactivity/inattention, 4) peer relationship problems, and 5) prosocial behaviour. It can also be used as a broader model of externalising and internalising scales (combining the hyperactivity/inattention and conduct scales and the emotional and peer problem scales, respectively). It is advantageous to use the broader internalising and externalising SDQ subscales for analyses in low-risk samples (Goodman et al., 2010).

As adolescence is a transitional stage from childhood to adulthood during which an individual undergoes many physiological, psychological, cognitive, and social changes, health-related quality of life (HRQoL) serves as a general mental health and well-being outcome among adolescents (Rissanen et al., 2019). HRQoL measures are increasingly used in adolescent mental health research since they allow learning about adolescents' subjective

perceptions, thoughts, and well-being experiences (Danckaerts et al., 2010). We, therefore, took a measure of the current quality of life via the PedsQL (Varni et al., 2001), see Appendix G. The PedsQL is a self-report measure of health-related quality of life containing four scales, 1) Physical Functioning, 2) Emotional Functioning, 3) Social Functioning, 4) School Functioning. Total PedsQL scores are calculated by taking the sum-total average of item scores across the four domains. Scores are calculated on a 0-100 scale with higher scores representing better HRQoL.

Method

Participants were 501 secondary school pupils from seven schools across Wales, UK, two secondary schools were located in Ceredigion, one school in Gwynedd, one school in Denbighshire, two schools in Powys and one school in Aneurin Bevan. Participants were aged between 13 and 14 years with equal representation across genders (242 Males, 249 Females, 10 Prefer not to say). We did not measure for ethnicity and social class due to ethical reasons of anonymity in the school. All pupils in the chosen classes were invited to complete the study. However, the research team was only given the completed questionnaires and therefore, we cannot report on the exact percentage of pupils that completed or refused to take part. However, based on the expected class sizes and the number of completed questionnaires, the rate of completion was in excess of 90%.

Design and materials

The survey consisted of three questionnaires as well as demographic questions upon participants age and gender.

Measures

Mental Health Literacy was measured using the Knowledge and Attitudes to Mental Health Scales Version 3 (Simkiss et al., 2021). The KAMHS consists of 50 items that aimed

to measure attitudes to mental health across six domains: Knowledge (12 items), Good Mental Health Behaviours (6 items), Stigma/attitudes (6 items), (lack of) Self-stigma (6 items), (lack of) Avoidant Coping (5 items), Social Desirability (8 items), and Help-seeking behaviours (7 items). A total score KAMHS score can be obtained by summing these scale scores. The KAMHS also contains a social desirability scale (8 items) to measure and control for positive impression management. Participants respond to statements on a five-point Likert scale (*strongly agree, agree, don't know, disagree, strongly disagree*) with higher scores indicating higher mental health literacy (e.g., greater knowledge, less stigma, more help-seeking, etc.). The scales of the KAMHS have shown good psychometric properties, including good internal reliabilities and test-retest reliabilities (Simkiss et al., 2021). Subscales are calculated via an average score of items, prorating for missing items. Total KAMHS scores are calculated by totalling average subscales (excluding social desirability scale).

Mental Health was assessed using the Strengths and Difficulties Questionnaire (SDQ; (Goodman, 1997), see Appendix F. The SDQ is a brief 25 item behavioural screening questionnaire that assesses emotional and behavioural difficulties among adolescents. Each item is scored on a 3-point scale (*0-not true, 1- somewhat true, 2- definitely true*). Positive and negative attributes are allocated to five subscales each; emotional symptoms, conduct problems, hyperactivity-inattention, peer problems and prosocial scales. Internalising (sum of Emotional symptoms and Peer problems scales; range 0–20) and Externalising (sum of Conduct problems and Hyperactivity-Inattention scales; range 0–20). Higher scores indicate more problems in this domain. The SDQ has well documented psychometric properties (Goodman, 2001).

Quality of Life was measured using the PedsQL 4.0 Pediatric Quality of Life Inventory, Generic Core Scales (Varni et al., 2001), see Appendix G. The PedsQL is a

generic self-report Health-related Quality of Life instrument developed for children aged 11-18 years. It contains 23 items in four scales: Physical Health, Emotional Functioning, Social Functioning and School Functioning. Each item is scored on a five-point Likert scale (*Never, Almost Never, Sometimes, Often, Almost Always*). Total scale scores are computed as the sum of all items divided by the number of items answered on all scales. Higher scores indicate better Health-Related Quality of Life. The PedsQL has good reliability and construct validity in various populations (Varni et al., 2001).

Procedure

All participants completed the questionnaires during morning registration. Data collection was performed in the classroom via pencil and paper questionnaires with the researcher present to supervise. Completion of the questionnaires took approximately 20 minutes.

Ethical approval

Ethical approval was received by Swansea University ethics committee, 29/10/2019 Ref: 2018–0272-259. We needed to maintain the confidentiality of the pupils, and therefore, we did not collate information regarding ethnicity or social class for this reason.

Statistical Methods

Data were analysed using IBM SPSS Statistics (Version 26). The distributions of all measures (including subscales) were examined visually for deviations from normality, as recommended by Tabachnick and Fidell (2007). No major deviations were found, and so parametric statistical tests were used. Mean and standard deviations were calculated for demographic data. Pearson correlations were used to examine relationships between KAMHS subscales and SDQ and PedsQL scores. Partial correlations were also performed using the Social Desirability scale to examine the possible confounds due to impression management. A

conservative criterion of an alpha of .01 was used due to the multiple comparisons. Effect sizes are categorised according to the conventions of Cohen (1988) as small (r > .10), medium (r > .30) and large (r > .50).

Results

Descriptive Statistics of the Measurement Scales

Descriptive statistics of the KAMHS, SDQ and PedsQL scales are shown in Table 4.1. The mean scores for each of the scales of the KAMHS were approximately in the middle range of scores (0 – 4). Hence, there were no signs of floor or ceiling effects. Levels of skew were small for all scales. The reliability of the KAMHS was acceptable for most of the scales and in line with a previous report (Simkiss et al., 2021). Notably, the Knowledge scale showed poor reliability (α =.38). This scale does not attempt to measure a single "attitude" but is a collection of questions about mental health where we might not expect strong associations between the answers to each item in the scale. When the Total KAMHS is assessed without the items from the Knowledge scale, the reliability of the total score was .68.

The psychometric properties of the SDQ appear similar to a previous report (Essau et al., 2012) and also demonstrate low internal reliability for internalising and externalising scales (.62 and .58) for a UK self-report sample of 12 to 17-year-olds. The psychometric properties of the PedsQL appear similar to previous research (Bastiaansen et al., 2004), with internal consistency mirroring this sample (α =.84)

Table 4.1 Descriptive statistics of KAMHS, PedsQL and Strengths and Difficulties Questionnaire.

Measure	Subscale	Mean (SD)	Actual Range	Skew (SE)	Kurtosis (SE)	Reliability
KAMHS	Knowledge	2 24 (0 32)	0 00-3 33	-0 74 (0 11)	7 50 (0 22)	38
	Stigma (lack of)	3 05 (0 60)	0 50-4 00	-0 66 (0 11)	0 46 (0 22)	69
	Self-Stigma (lack of)	2 31 (0 80)	0 00-4 00	-0 37 (0 11)	0 24 (0 22)	82
	Good Mental Health Behaviours	2 70 (0 51)	0 00-4 00	-0 14 (0 11)	0 73 (0 22)	60
	Help-seeking behaviours	2 31 (0 82)	0 00-4 00	-0 30 (0 11)	-0 37 (0 22)	84
	Avoidant coping (lack of)	2 26 (0 66)	0 00-4 00	0 05 (0 11)	-0 22 (0 22)	50
	Social desirability	1 86 (0 64)	0 00-3 63	0 13 (0 11)	-0 32 (0 22)	71
	Total KAMHS	14 87 (2 35)	7 14-14 87	-0 50 (0 11)	0 17 (0 22)	66
PedsQL	Physical Health	78 01 (15 07)	0 00 - 100	-1 14 (0 11)	2 21 (0 22)	79
	Emotional Functioning	62 44 (23 81)	0 00 – 100	-0 18 (0 11)	-0 61 (0 22)	84
	Social Functioning	79 20 (18 22)	5 00 – 100	-1 01 (0 11)	-0 83 (0 22)	79
	School Functioning	65 17 (19 40)	5 00 – 100	-0 20 (0 11)	-0 20 (0 22)	76
	Psychosocial Functioning	68 98 (17 28)	15 00 – 100	-0 25 (0 11)	-0 23 (0 22)	89
Strength and Difficulties	Emotional symptoms	3 87 (2 30)	0 00-11	0 33 (0 11)	-0 35 (22)	75
	Conduct problems	3 48 (1 90)	0 00-12	0 37 (0 11)	0 17 (0 22)	54
	Hyperactivity-inattention	4 56 (2 43)	0 00-10	0 15 (0 11)	- 60 (0 22)	64
	Peer problems	2 52 (1 94)	0 00-10	0 70 (0 11)	- 05 (0 22)	50
	Prosocial	7 12 (6 02)	0 00-26	0 61 (0 11)	9 00 (0 22)	70
	Total Difficulty	14 24 (6 02)	0 00-31	0 15 (0 11)	- 30 (0 22)	79

Relationship to Mental Health (SDQ) and Quality of Life (PedsQL)

Pearson's bivariate correlations were calculated to examine the relationship between KAMHS scores, and internalising and externalising problems, and quality of life (see Table 4.2).

Social Desirability

One of the features of the KAMHS is that it contains a Social Desirability scale that assesses possible impression management (see Introduction), which may lead to a person under-reporting problems or exaggerating strengths. In line with this possibility, the Social Desirability scale was significantly negatively related to Externalising problems and positively related to Quality of Life. Hence, it appears that some of the variance in reporting on mental health issues may be due to impression management. Hence, all the remaining analyses were done both with and without Social Desirability as a confounder variable.

Table 4.2 Pearson correlations between internalising and externalising factors of the self-report SDQ, Total Scale score of PedsQL and scales of the KAMHS: Knowledge, Stigma (Lack of), Self-Stigma (Lack of), Good Mental Health Behaviours, Help-seeking Behaviours and Avoidant Coping (Lack of). The *partial r* refers to the partial correlation in a partial correlation that included the Social Desirability scale.

KAMHS	**Internalising (SDQ)**		**Externalising (SDQ)**		**Total PedsQl Score**	
	r	*Partial r*	*r*	*Partial r*	*r*	*Partial r*
Total	-.31*	-.29*	-.35*	-.30*	.41*	.37*
Knowledge	.10	.09	-.01	-.01	-.11	-.10
Good Mental Health	-.20*	-.19*	-.21*	-.17*	.17*	.13*
Stigma (Lack of)	.15*	.16*	.03	.04	-.09	-.10
Self -stigma (Lack of)	-.27*	-.26*	-.17*	.14*	.40*	.39*
Avoidant Coping (Lack of)	-.20*	-.19*	-.28*	-.23*	.33*	.29*
Help-seeking Behaviours	-.36*	-.35*	-.35*	-.29*	.51*	.47*
Social Desirability	-.10	-	-.33*	-	.28*	-

* Correlation coefficient is significant at the 0.01 level (2-tailed).

Total KAMHS

The KAMHS total score was negatively associated with both internalising and externalising problems, and positively associated with quality of life with "medium" effect sizes. Controlling for Social Desirability had little effect on this result.

Mental Health Knowledge

No significant relationships were found for this scale, see Table 4.2.

Good Mental Health Behaviours

Individuals with higher scores on good mental health behaviours showed fewer internalising and externalising problems, and increased quality of life all with small effect sizes, see Table 4.2.

Lack of Stigma

This scale showed a weak, positive correlation to internalising problems, indicating that individuals with higher levels of mental health stigma had fewer self-reports of internalising problems. No significant relationships were found between mental health stigma and externalising problems or quality of life, see Table 4.2.

Lack of Self-stigma

This scale was negatively associated with both internalising and externalising problems. This result can also be expressed as those with high levels of self-stigma show poorer mental health. The scale was positively associated with quality of life with a medium effect size, see Table 4.2.

Lack of Avoidant Coping

This scale was associated with more internalising and externalising problems with a small effect size. Again, this can be re-expressed as those with avoidant coping strategies

had poorer mental health. The scale was also positively related to quality of life (medium effect size), see Table 4.2.

Help-seeking Behaviours

Higher intentions to seek help were associated with fewer internalising and externalising problems (medium effect sizes) and with increased quality of life with a large effect size, see Table 4.2.

Relationship between Mental health literacy subscales (KAMHS), Mental health and quality of life

Table 4.3 illustrates the relationship between subscales of the SDQ, subscales of the PedsQL and Total KAMHS scores. Table 4.4 illustrates the relationship between the scales of the KAMHS: Knowledge, Stigma (Lack of), Self-Stigma (Lack of), Good Mental Health Behaviours, Help-seeking Behaviours and Avoidant Coping (Lack of) and subscales of the SDQ and PedsQL.

Table 4.3 Pearson correlations and partial correlation accounting for Social Desirability scale, between subscales of the SDQ, subscales of the PedsQL and Total KAMHS scores.

Measure	**Subscale**	**Total KAMHS**	
Strength and Difficulties		***r***	***Partial***
	Emotional symptoms	-.26*	-.24*
	Conduct problems	-.28*	-.21*
	Hyperactivity-inattention	-.34*	-.29*
	Peer problems	-.27*	-.26*
	Prosocial	.11*	.06
PedsQL			
	Physical Health	.31*	.27*
	Emotional Functioning	.33*	.30*
	Social Functioning	.34*	.32*
	School Functioning	.36*	.32*
	Psychosocial Functioning	.41*	.37*

*Correlation coefficient is significant at the 0.01 level (2-tailed).

Table 4.4 Pearson correlation and partial correlation accounting for social desirability scale between the scales of the KAMHS, SDQ and PedsQL

Measure	Subscale	Knowledge and Attitudes to Mental Health Scales (KAMHS)											
		Knowledge		Good Mental Health behaviour		Lack of Stigma		Lack of self-stigma		Lack of Avoidant coping		Help-seeking behaviour	
		r	*Partial*	*r*	*Partial*	*r*	*Partial*	*r*	*Partial*	*r*	*Partial*	*r*	*Partial*
Strength and	Emotional symptoms	.12*	.11*	.10*	-.09*	.19*	.20*	-.29*	-.29*	-.22*	-.20*	-.39*	-.38*
Difficulties													
	Conduct problems	-.01	-.04	-.20*	-.15*	.01	.03	-.13*	-.09	-.31*	-.26*	-.29*	-.22*
	Hyperactivity-inattention	.02	.01	-.22*	-.18*	.01	.02	-.21*	-.19*	-.28*	-.23*	-.40*	-.36*
	Peer problems	.04	.04	-.29*	-.28*	.03	.04	-.20*	-.19*	-.17*	-.16*	-.28*	-.27*
	Prosocial	-.02	-.01	.21*	.18*	.16*	.16*	-.02	-.04	.07	.03	.03	-.03
PedsQL													
	Physical Health	-.03	-.02	.16*	.12*	-.08*	-.09*	.30*	.28	.24*	.20*	.37*	.33*
	Emotional Functioning	-.22*	-.21*	.10	.06	-.14*	-.16*	.38*	.37*	.27*	.23*	.49*	.35*
	Social Functioning	.01	.01	.15*	.13*	-.01	-.02	.33*	.31*	.24*	.21*	.38*	.37*
	School Functioning	-.07	-.06	.17*	.12*	-.04	-.06	.30*	.28*	.33*	.29*	.42*	.37*
	Psychosocial Functioning	-.13*	-.19*	.17*	.13*	-.08	-.10*	.40*	.39*	.33*	.29*	.51*	.48*

*Correlation coefficient is significant at the 0.01 level (2-tailed).

Discussion

This research examined the relationship between different aspects of MHL and mental health in adolescents. Overall, we found that some, but not all, aspects of MHL were related to current mental health and quality of life.

Total KAMHS

These findings demonstrate that MHL, as measured via the KAMHS, is robustly related to current mental health with medium effect sizes. Internalising and externalising problems were lower in individuals with good MHL. Further to this, the pupil's quality of life was better. Further to this, the effects of social desirability were controlled to rule out the possibility of a reporting issue. This appears to be a novel finding as there is little direct research on this issue. Perhaps the closest is that of Lam (2014), who showed that poor MHL was associated with symptoms of depression in a sample of youths (age 15-19) in China, though the size of the effect (odds ratio = 1.52) does not quite reach even the "small" category (Chen et al., 2006). Further, Bjørnsen et al. (2019) found that positive MHL was also significantly and positively associated with mental well-being in a study of Norwegian adolescents.

The body of research on general health literacy and how it relates to health outcomes suggests that low health literacy is related to poorer health outcomes and greater disparities (Baker et al., 2008; Berkman et al., 2011; Neter & Brainin, 2019). Research has often shown that MHL of the general population is poor, disorders are poorly recognised, and their treatments are often delayed, reducing years of good quality of life of those experiencing mental health disorders (Tay et al., 2018). Further to this, low MHL rates caused under-reported and undiagnosed mental health conditions (Tay et al., 2018). We demonstrate that having good levels of MHL is related to better current mental health and quality of life in adolescents.

Knowledge of Mental Health

While there are many factors which lie at the heart of mental health problems, particularly stigma and low self-worth (Watson et al., 2007). It has also been argued that knowledge about mental health conditions appear at the heart of MHL (Chen et al., 2017; Furnham et al., 2011). The finding that such knowledge is *not* related to mental health or quality of life is of great interest. First, it is notable that this scale has poor internal reliability (see Table 4.1), which has been reported elsewhere (Simkiss et al., 2021). The Knowledge scale includes several aspects of knowledge or understanding about mental health and mental illness, relating to various mental health disorders and treatments. Also, the finding of no relationship between mental health knowledge and mental health is not without precedent. Bahrami et al. (2019) addressed the relationship between depression literacy and general psychological health of 65 students in an Iranian high school. Students completed the General Health Questionnaire (GHQ-28) and Depression Literacy Questionnaire (D-Lit). No significant associations were found.

A lack of knowledge of mental health has previously been demonstrated to contribute to a negative attitude towards mental health (Rickwood, Cavanagh, Curtis & Sakrouge 2004, Lanfedi et al., 2019). However, understanding the aetiology of a mental health disorder does not appear to improve mental health itself. This research demonstrates that other factors such as knowledge of good mental health behaviours and improving intentions to seek help are more important in relation to our mental health. The implication of this result may suggest that programmes to improve MHL that rely solely in giving knowledge about mental health (or the parts of programmes that are aimed at this) may not be affective in producing a change in the mental health of an individual.

The results may also be interpreted in that knowledge of mental health may take longer to have an impact on both mental health and quality of life. Further research may consider addressing this relationship longitudinally.

Good Mental Health Behaviours

These findings further demonstrate that good mental health behaviours were significantly associated with better mental health and quality of life. As young people are often fearful of treatment and seek help as a last resort (Yap et al., 2011), this research finding highlights the importance of how mental health services and early interventions must help young people improve their MHL. This can be done by assisting them in recognising different mental health symptoms, reducing mental health stigma by improving attitudes toward mental health and treatment, and incorporating good mental health behaviours (Gulliver et al., 2010).

Mental health stigma

The study found a significant, though weak, *positive* relationship between the (lack of) stigma scale and internalising problems. Another way to describe this result is that people with poor mental health show less stigma toward others with mental health problems. It may be that those that have been exposed to mental health problems through their own experiences are then more sympathetic and understanding of others with mental health problems. In a similar vein, the finding may be explained by the process of stigmatisation and intergroup bias (Castelli et al., 2008). Intergroup bias is the tendency to favour one's group, members and characteristics with an unfair evaluative, emotional, cognitive, or behavioural response towards an outgroup (Dovidio & Gaertner, 2010). This refers to when differences within groups tend to be minimised, and differences between groups are exaggerated (outgroup), referring to themselves as 'us' and outgroup members as' them'.

Research often highlights that the psychological origin of intergroup bias appears during early development. In particular, young people are typically more likely to help and share with members of their social groups (Buttelmann & Böhm, 2014). This is often a result of a lack of experience and understanding of mental health, and in order to decrease the gap between "us" and "them," direct, personal contact based on equality between people from the "ingroup" and people from the "outgroup" and improved mental health knowledge can be used (Helmus et al., 2019). This supports the need for psychoeducational programmes to reduce mental health stigma (Corrigan et al., 2012), though the present result suggests that any such changes in stigma to others may not be directly beneficial to the individual's mental health.

Mental health self-stigma

Higher levels of self-stigma showed poorer mental health and quality of life. This is in line with research that identifies individuals with internalised mental health stigma as having lower self-esteem as they agreed with the stigmatic views and internalised that they are weak, leading to more negative emotional reactions and feelings (Corrigan et al., 1999; Corrigan & Watson, 2004). Moreover, individuals with mental illness who perceive negative actions by others manifest lower self-esteem and diminished self-efficacy due to self-stigma (Corrigan et al., 2006). Therefore, future research should continue to promote and evaluate MHL programmes that focus on reducing mental illness self-stigma.

Avoidant Coping

Avoidant coping reflects efforts to escape the confrontation, behavioural disengagement and is consistently maladaptive (Norris et al., 2002). This study identified that individuals who inhibit avoidant coping as a mechanism for mental health problems exhibited worse mental health and quality of life. It should be noted, however, that this scale had rather poor reliability (α=.50), and this may mean that this unreliability weakened the magnitude of

this effect. That avoidant coping is related to worse mental health has been found in previous studies, which suggest that avoidant copers report more symptoms of depression. These findings highlight the importance of coping and support when dealing with a mental health problem and should be incorporated into mental health interventions.

Help-seeking Behaviours

Research has often examined MHL as a key barrier to help-seeking behaviours (Rickwood et al., 2007). We found that intentions to seek help were significantly associated with better mental health and quality of life. The association between better mental health and quality of life and intentions to seek help may also be explained through previous positive experiences. As such, they feel more supported and valued and have more favourable intentions to seek help. This is in line with research that has identified how 33% of respondents cited personal experience with a mental disorder as the primary source of information (Wolff et al., 1996). Having an experience with a mental health disorder is positively associated with MHL. For example, Lauber et al. (2005) assessed recognition of depression and schizophrenia, and previous personal experience with mental health treatment was associated with symptom recognition. Dahlberg et al. (2008) examined if there was a relationship between a personal history of mental health support and a level of MHL. They found that MHL was strongly associated with a personal history of mental health support. Furthermore, a study that assessed participants' ability to identify depression found that having a personal history of treatment for a mental health issue correlated with more positive perceptions about treatment (Marwood & Hearn, 2019).

Strengths and Limitations

A particular strength of this study was that control for social desirability bias was taken, a significant limitation of current MHL measures and mental health attitudes (Evans-Lacko et al., 2010). For example, research findings by White and Casey (2017) were limited

as MHL was positively associated with intentions to support relative's help-seeking behaviours. However, social desirability bias may have reduced the variability in intention scores, making it difficult to measure the relationship between MHL and intended support for older help-seekers. In line with this, Kermode et al. (2009)'s measure of MHL in India was also limited due to the extent to which responses are subject to social desirability bias which may have also been determined by an interaction between question types and culture. Our findings also suggest a recommendation for the use of KAMHS in a clinical setting with a measure of social desirability.

There are several limitations of this study. Firstly, the generalisability of these research findings is limited to the nature of the population studied (UK students aged 13 to 14 years). Therefore, the findings of this research may not be generalisable to other cultures. Further research is required to verify these relationships in other populations and geographical areas. While the stigma of mental illness may indeed constitute a universal phenomenon, individual experiences and discrimination are local and subject to the influence of cultural factors (Murphy, 2002). Similarly, symptoms of mental illness that are stigmatised in western cultures may not be associated with social devaluation in other cultures and contexts, particularly when some conditions are not considered an illness (Koschorke et al., 2017). In addition, these findings are limited to self-report measures of mental health and quality of life.

A further limitation of the research is that it is possible that the 10% of pupils that did not complete the survey could be the most vulnerable of pupils within the sample. Therefore, the findings may not present a true representation of all pupils within the sample chosen. Future research may consider taking this into account when pupils complete the survey.

Conclusions

This research supports the argument for an expanding definition of MHL (Kutcher et al., 2016), mirroring the evolving definition of health literacy, which is recognised as including multiple facets of knowledge (Baker, 2006). We propose the importance of MHL as more than just mental health knowledge, and this extended to include the broader construct of help-seeking efficacy, stigma and coping mechanisms. The results indicate that good MHL can be beneficial for adolescents' mental health and quality of life.

The current study offers valuable, immediate implications for policy, such as MHL programmes aimed at reducing mental health stigma, encouraging help-seeking behaviours, and promoting mental health and quality of life, with perhaps less emphasis on mental health "knowledge". The findings support the progression in mental health education among adolescents and young people in teaching good mental health behaviours, access to appropriate support and guidance and the reduction of mental health stigma, which goes beyond the traditional focus on mental disorders. These findings, therefore, may have implications for future educational initiatives that aim to promote good mental health behaviours in the adolescent population.

Chapter summary

This chapter considered the relationship between a multifaceted measure of MHL and the mental health status of adolescents. The findings revealed no significant relationships between mental health knowledge and adolescents' mental health. Stigma had a weak correlation to internalising problems, and individuals with self-stigma reported more internalising and externalising problems. Intentions to seek help and good mental health behaviours were significantly associated with mental health and quality of life. Individuals who display avoidant coping had higher reports of internalising and externalising problems. These findings support the argument for an expanding definition of MHL. The results also

directly imply the importance of early intervention for adolescents' mental health problems and quality of life. Using the KAMHS measure, the next chapter will examine the Guide Cymru's ability to improve the MHL in adolescents.

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Chapter 5: Preliminary evidence for the Guide Cymru through a Pre and Post study design

Chapter Aims

As outlined in the previous chapter, the research presented in this chapter aims to examine if the Guide Cymru is effective in improving the mental health literacy (MHL) of (13 to 14-year-olds) in the UK using a pre-post-study design.

Introduction

Research has often identified that individuals with higher levels of MHL (e.g. ability to recognise and understand symptoms and attribute them to poor mental health) are more likely to seek professional help not only for themselves but also recommend professional help to others (Gorczynski et al., 2017; Coles and Coleman, 2010). Further to this, as we demonstrated in the previous chapter, we propose the importance of MHL as more than just mental health knowledge, and to include the broader construct of help-seeking efficacy, stigma and coping mechanisms. Therefore, with this approach, improving MHL may be expected to positively impact the identification of mental disorders, decrease stigma and enhance appropriate help-seeking behaviours (Kutcher et al., 2016). A meta-analysis by Durlak et al. (2011) found that students who received mental health interventions improved social and emotional skills compared to students who did not.

The ability to obtain, access, and use mental health information can play a role in stigma reduction by improving knowledge and attitudes (Jorm, 2000). Such strategies are often guided by Attribution Theory (Weiner et al., 1988), as discussed in Chapter 2, where mental health stigmas stem from attributions about mental disorders' controllability (Corrigan et al., 2001). If a mental health disorder is perceived to be within the individual's control, the individual is likely to be held responsible for their disorder and stigmatised. At the same time, Attribution Theory predicts that uncontrollable behaviours are less likely to be stigmatised

than controllable behaviours (Boysen and Vogel, 2008). Educational programmes and strategies attempt to reduce stigmatic attitudes by countering personal responsibility with evidence-based information on the specific causes of mental health disorders (Corrigan et al., 2001).

There is often debate surrounding the discussion of mental health with adolescents. For example, increasing discussion around mental health can often result in exposing adolescents to the negative effects of mental health and ultimately worsen mental health outcomes (Fowler & Christakis, 2008). Conversely, researchers have argued that encouraging healthy mental health discussions can result in relief for individuals experiencing mental health problems (Yang et al., 2018). Adolescents themselves have expressed a need for mental health education (Smart et al., 2012). Adolescence is a period of increased independence, emerging responsibilities and decision-making (Shaver et al., 1985; Pfeifer and Berkman, 2018). This developmental period represents an opportunity to intervene in young people's understanding and attitudes towards mental health. Learning and adopting good mental health behaviours during the adolescent period may improve health decision-making later in life (Bröder et al., 2017).

The school environment plays an important role in preventing and identifying mental health difficulties among children and adolescents (Whitley et al., 2013). Early intervention is critical as mental health problems during adolescence can significantly impact well-being and school attainment (Bowman et al., 2017). MHL programmes within the school-based environment are becoming increasingly recognised. For example, Ojio et al. (2015) evaluated a school-based MHL programme in secondary schools by school teachers. Using pre- and post-evaluation questionnaires, they found a significant improvement in students' MHL. With low MHL levels in secondary schools (Hart et al., 2016), there is a strong need for interventions to improve knowledge on mental health.

Research aims

To evaluate the Guide Cymru, we aimed to use the Knowledge and Attitudes to Mental Health Scales (KAMHS) (Simkiss et al., 2021), designed to measure mental health knowledge, good mental health-promoting behaviours, stigma to others, and self-stigma, to examine the impact of the Guide Cymru on Year 9 secondary school pupils in Wales.

We hypothesised that pupils that receive the Guide Cymru would show greater MHL as indicated by (1) greater knowledge of mental health issues; (2) better mental health-related behaviours; (3) less stigma towards those with a mental health disorder; (4) reduced self-stigma; (5) a reduction in avoidant coping styles; and (6) a greater intention to seek help for mental health issues.

Methods

Participants

460 Year 9 pupils, 154 adolescent boys, 305 adolescent girls, and one pupil who would 'rather not say', aged between 13-14 years, took part in the programme. Participants were divided into two samples, Sample 1 completed KAMHS Version 1 (72 questions), and Sample 2 completed KAMHS Version 2 (38 questions). Of this, sample one (n = 222) included 83 males and 139 females. Sample two included 71 males and 166 females. Five secondary schools located in Wales took part. A mixture of both Welsh medium and English schools were included in the study. 28% of pupils completed the Guide Cymru and evaluation measures in the medium of Welsh. Participants were divided into sample one and sample two based on completion of Version 1 or 2 of the Knowledge and Attitudes to Mental Health Scales (KAMHS) (Simkiss et al., 2021).

The Intervention

The Guide Cymru is a manualised MHL resource consisting of six mental health modules. It consists of three aspects; 1) Go-To Educator training - two-day MHL training for teachers; 2) Resources for teachers, including a comprehensive online and self-study resource to aid the programme's knowledge and delivery; and 3) an evidence-based six-module programme aimed to be delivered to Year 9 pupils. The six modules consist of a mixture of group activities, group discussions and video presentations. Module 1 includes Mental health stigma, detailing myths and realities of mental illness. Module 2 involves information and discussion surrounding understanding mental health and mental illness. Module 3 outlines common mental illnesses. Module 4 includes experiences of Mental Illnesses and the Importance of Family Communication. Module 5 includes treatments and recovery from mental illness and Module 6 includes the importance of positive mental health.

The Guide Cymru is delivered by two Action for Children staff members to up to three allocated teachers from each secondary school. Action for Children is a mental health charity in Wales. The training is delivered in English, but schools are provided with translated Welsh materials to deliver in the medium of Welsh or English. This involves a two- day training session. Teachers are then expected to deliver the Guide Cymru to Year 9 pupils during the following 12-14 weeks.

Study procedures

Between February 2019 and July 2019, the Guide Cymru was implemented into each secondary school curriculum listed above. To evaluate the impact of the intervention, a repeated measures design was employed. Changes in mental health knowledge and attitudes towards mental health disorders and stigma were measured using pre and post-questionnaires. Pre-questionnaires were completed by pupils one week before teachers attending the Guide Cymru training. A data collection team member attended the schools with paper-based

questionnaires for the pupils to complete. A brief explanation was given to pupils outlining the purpose and aims of the research. Pupils were informed that the questionnaires were anonymous and to ensure anonymity, participants were asked not to provide any identifying information on the questionnaires, and anonymous identifiers such as the name of first pet, house number and favourite colour were used to link participants' pre-and post-intervention responses. The questionnaires took approximately 20-25 minutes to complete.

Delivery of the Guide Cymru took approximately 12 to 14 weeks. The Guide Cymru was implemented as part of PSHE (Physical, Social and Health Education) lessons during school hours. Post questionnaires were completed one week following the completion of the Guide Cymru.

Measures

Mental Health Literacy

KAMHS (Knowledge and Attitudes to Mental Health Scales (Simkiss et al., 2021). The KAMHS measure is a questionnaire designed for children ages 11 to 16 years. The KAMHS instrument consists of five domains of MHL: (1) Mental health knowledge; (e.g., *Most mental disorders start before age 18) which contains 12 items.* (2) (lack of) stigma; (e.g., *I would feel comfortable sitting next to a person with a mental disorder*) which contains 6 items. (3) Help-seeking behaviour; (e.g., *I wouldn't tell anyone if I had a mental health problem in case they made fun of me* (reverse scored)) which contains 7 items. (4) Good mental health behaviour; (e.g., *A good night's sleep is good for your mental health*) which contains 6 items and (5) (lack of) self-stigma (e.g., *I would feel a failure if I had a mental disorder* (reverse scored))[1] which contains 6 items. In addition, it contains an 8 item scale to

[1] This scale was not part of the original KAMHS but was added for version 2 of the KAMHS.

identify possible self-presentation issues outside of the mental health domain, termed “Social desirability”.

Participants respond to statements on a five-point Likert scale (*Strongly Agree, Agree, Don't know, Disagree, Strongly Disagree*) with higher numbers indicating higher knowledge, lack of stigma, help-seeking behaviours, good mental health behaviour, a lack of self-stigma and social desirability.

Data matching

Data was matched over time through the pre and post-questionnaires using four “code” questions that allow for the tracking of the person pre and post-completion of the programme. These included (name of first pet”, “date of your birth day (e.g. 23rd)”, “house number”, and “favourite colour”).

Ethics approval and consent to participate

Ethical approval was received by Swansea University, 29/10/2019 Ref: 2018–0272-259. The Guide Cymru is being adopted as part of the National Curriculum of Personal Social Education (PSE) in schools in Wales. Therefore, it is delivered to all children within the year group at the school at the teachers’ discretion, without consent from parents/ caregivers. The Ethical Committee approved it on the basis that completed questionnaires contained no personal information to preserve anonymity.

Results

The KAMHS allows for scores ranging from 0-4, where larger scores indicate a positive score (higher knowledge, (lack of) stigma etc.). For both sample one and sample two, Multivariate Analysis of Variances (MANOVAs) showed a significant effect of taking the Guide Cymru (sample one: $F(4, 218) = 9.50$, $p < .001$; Wilk’s $\Lambda = 0.85$, $\eta_p^2 = .15$: sample two: $F(5, 223) = 6.17$, $p < .001$; Wilk’s $\Lambda = 0.88$, $\eta_p^2 = .12$). These overall effects were

explored via paired-samples *t*-test for changes in mean KAMHS scores for pre and post completion of the Guide Cymru and these statistics are presented in Table 5.1. The p value has been adjusted to 0.1 to accommodate for Bonferroni corrections.

Table 5.1. Change in KAMHS scores from pre to post completion of the Guide Cymru.

KAMHS subscales	Pre-test (SD)	Post-test (SD)	*d* with 95% CI	*p*
Sample 1				
Knowledge	2.40 (0.30)	2.50 (0.33)	0.30 [0.18, 0.44]	<.001
Good mental health	2.67 (0.46)	2.83 (0.52)	0.33 [0.18, 0.48]	<.001
Stigma (lack of)	2.76 (0.53)	2.89 (0.56)	0.24 [0.10, 0.38]	<.001
Help-seeking behaviours	2.50 (0.74)	2.49 (0.71)	-0.02 [-0.14, 0.11]	.78
Sample 2				
Knowledge	2.30 (0.25)	2.39 (0.33)	0.30 [0.15, 0.45]	<.001
Good mental health	2.55 (0.53)	2.55 (0.53)	-0.00 [-0.14, 0.14]	.98
Stigma (lack of)	2.33 (0.50)	2.45 (0.47)	0.25 [0.11, 0.39]	<.001
Self-stigma (lack of)	2.19 (0.81)	2.26 (0.80)	0 .09 [-0.02, 0.21]	.07
Help-seeking behaviours	2.00 (0.82)	2.12 (0.83)	0.15 [0.03, 0.27]	<.01

Mental Health Knowledge

Following the Guide Cymru's completion, pupils in both samples showed significant (*p*s < .001) mental health knowledge improvements with medium effect sizes (sample 1: *d* = 0.30; sample 2: *d* = 0.30).

Good Mental Health Behaviours

Sample one showed a significant ($p < .001$) increase in good mental health behaviours following the Guide Cymru, with a medium effect size ($d = 0.33$). However, there was no change good mental health behaviours in sample two.

(lack of) Stigma

Both samples showed significant increases (ps < .001) in (lack of) stigma (hence, decreased levels of stigma towards people with mental health problems) after administering the Guide Cymru with small to medium effect sizes (sample 1: $d = 0.24$; sample 2: $d = 0.25$).

(lack of) Self-stigma

Following the Guide Cymru completion, pupils in sample two had a small increase in (lack of) self-stigma ($d = 0.09$ - indicating a decrease in self-stigma), but this narrowly failed to reach statistical significance ($p = .07$).

Help-seeking Behaviours

Sample one did not show a significant increase in the intention to disclose mental health problems and to seek help. However, sample two showed a significant increase ($p < .01$) in the intention to seek help, with a small effect size ($d = 0.15$).

Discussion

This research study presents preliminary evidence for the Guide Cymru's effectiveness in improving MHL among secondary school pupils. This research demonstrates significant improvements in mental health knowledge and a decrease in public stigma following completion of the Guide Cymru: a MHL intervention. Improvements in attitudes to mental health disorders are consistent with previous research indicating positive associations between mental health education and stigma reduction (Corrigan et al., 2012).

These outcomes replicate the findings of Mcluckie et al. (2014) and more recently, Zare et al. (2021) using a modified version of the Guide Curriculum that was bespoke to the context of the UK, e.g., 28% of the sample were delivered and tested through the medium of Welsh. However, our findings also extend those of Mcluckie et al. (2014) in two important ways. Firstly, versions 1 and 2 of the multifaceted evaluation measure (KAMHS) captures a more complete measure of MHL. This research extends beyond mental health knowledge and attitudes to include other domains such as help-seeking behaviours, behaviours that support good mental health, and self-stigma. Furthermore, the Guide Cymru provides preliminary evidence of improvements in both public and self-stigma amongst adolescents. Both samples showed decreased levels of stigma towards people with mental health problem following completion of the programme. Further to this, sample 2 demonstrates significant improvements in self-stigma following completion of the Guide Cymru. Providing knowledgeable information regarding mental health challenges misconceptions of mental health, resulting in a decrease in stigma among adolescents (Corrigan and Watson, 2004).

This research further demonstrate provisional evidence that the Guide Cymru improves the intention to disclose and seek appropriate mental health support using KAMHS Version 2 in Sample two. However, sample one did not show a significant increase. This may be explained by small changes to questions in version 1 and 2 of the KAMHS measurement. Education about self-help techniques and healthy coping mechanisms can be an important protective factor for adolescents and young people. MHL is important in increasing the likelihood that adolescents and young people can access appropriate help when needed. Research has shown that how a person presents their symptoms to a doctor can influence the accuracy of a diagnosis for a mental disorder (Kessler et al., 1999). Therefore, adolescents need to have sufficient MHL as beliefs about their symptoms can strongly influence their

decisions to seek help and how they present their problem to mental health professionals or a general practitioner (Kessler et al., 1999).

Second, the Guide Cymru was administered to a younger age group (13-14-year-old) in comparison to the previous work in 14-15 year olds (Mcluckie et al., 2014). Research demonstrates that most mental disorders have their peak of incidence during the transition from childhood to young adulthood. With half of all lifetime diagnosable mental health disorders beginning by 14 years (Kessler et al., 2005). If recognised and treated early, intervention may increase the chances of a better long-term outcome (Jorm et al., 1997). MHL at a younger age can ultimately have significant implications for early recognition and identification. As a result, early intervention can alter the developmental trajectory of poor mental health and lead to improved outcomes (Kelly et al., 2007).

Taken together, these findings indicate that it may be possible to make significant improvements in the MHL of adolescents through an integrated MHL programme (the Guide Cymru). Consistent with other MHL interventions, the impact of the programme in schools is small to medium in terms of statistical effect sizes (Chisholm et al., 2016). However, such differences can translate to substantial changes in rates of mental health across a population. It is also hoped that there may be "snowballing" effects as these attitudes filter into the population to influence others who have not received the Guide Cymru (or similar programmes).

Strengths and Limitations

Based on the results of the current study, it can be concluded that the use of educational interventions can provide preliminary evidence for the effective promotions of MHL in adolescents. Furthermore, the results of the study demonstrate that school-based

educational interventions can be considered as powerful tools in improving MHL of adolescents in a large sample size of pupils across Wales.

While the results of this study are encouraging, several limitations should be noted. The study is limited by the lack of a randomised control design and, hence, in our ability to conclude that the improvements in knowledge and attitudes directly resulted from the Guide Cymru as opposed to naturally occurring differences over time. Additionally, we did not have the opportunity to conduct follow-up evaluations to determine whether the improvements in mental health literacy were maintained over time. In addition, this study relies upon the self-report assessment of versions 1 and 2 of the KAMHS to measure MHL, and thus, confirmation of these findings with objective tools are required. Finally, while our results suggest that the programme increased students' intentions to seek help for a mental health issue if needed, we cannot conclude whether the Guide Cymru had an impact on actual help-seeking behaviour.

Chapter summary

This chapter describes a pilot study that aimed to examine if the Guide Cymru was effective in improving the MHL of (13 to 14-year-olds) in the UK using a pre-post-study design. Following completion of the Guide Cymru, pupils' knowledge of mental health and attitudes towards mental health increased significantly. Therefore, this pilot study provides preliminary evidence for improvements in mental health knowledge and a decrease in public and self-stigma following the completion of a 6-module curriculum, The Guide Cymru. The next chapter will detail a randomised control trial that aims to evaluate the Guide Cymru in secondary schools across Wales using the final version of the KAMHS (V3).

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Chapter 6: A Randomised Controlled Trial evaluating The Guide Cymru: All Wales Mental Health Literacy in Year 9 pupils in Wales.

Chapter overview

This chapter presents a detailed description of a cluster randomised controlled trial (RCT) that investigated the effectiveness of the Guide Cymru in Wales. This chapter will describe how the trial was performed by adhering to the guidelines highlighted in the CONSORT Guidelines for cluster RCTs (Campbell, Elbourne, et al., 2004). The first sections examine the considerations of the use of an RCT in an educational setting. An outline of the decisions made in the design of the RCT is given, followed by the study participants, including key characteristics of the sample. The procedure of the RCT is then explained, and statistical analysis plans. Following this, the outcome and results of the RCT using Multi-level Modelling (MLM) are presented. Finally, this chapter concludes with a detailed discussion of the results and implications of these findings.

Introduction

For this study, a cluster randomised controlled trial (RCT) was chosen to evaluate the effectiveness of the Guide Cymru programme in improving knowledge, attitudes, good mental health behaviours, help-seeking, and avoidant coping of young people in Wales. A cluster RCT was deemed necessary as the Guide Cymru training programme is delivered by staff at Action for Children to schoolteachers, who will then deliver the programme to their pupils. The Guide programme has been well-established in a number of countries (Kutcher et al., 2014; Kutcher et al., 2016; Milin et al., 2016), as discussed in Chapter 2. However, this is the first study to evaluate the impact of the Guide Cymru using an RCT in Wales. As discussed in Chapter 1, adolescence is a key period in the development of long-lasting mental health problems (Smith et al., 2021). Therefore, we aim to evaluate the Guide Cymru in the ability to improve MHL of a younger age group.

The school is the unit of clustering as opposed to the individual pupil level. Thus, randomisation occurred at school level and involved approximately 100-150 pupils within each school. Outcomes, however, will be at the level of individual pupils.

RCTs are the most common form of clinical design and are used for comparing the outcomes of treatments within two groups (Hopewell et al., 2010) and is universally accepted as the 'gold standard' methodology (Hariton & Locascio, 2018). A randomised control trial is designed as an experimental study in which participants are allocated to either a treatment group or a waitlist (control group) (Akobeng, 2005). The main purpose of the randomisation process is to eliminate any selection bias and unknown confounding factors, which will create a control group that is as similar as possible to the treatment group (Akobeng, 2005).

Particularly among educational settings, RCTs are appropriate as two sets of schools may well be different in a number of aspects other than the tested intervention, which may affect the outcome results (Torgerson & Torgerson, 2001). The primary advantage of randomisation in educational settings is that it reduces allocation bias which can emerge from baseline variables that can have influence on outcomes (Sullivan, 2011). The randomisation process hopes to ensure that baseline characteristics are equally distributed between groups. However, many common confounders that the randomisation process may not control for are the effects of pre-testing on learning (Cook & Beckman, 2010).

A cluster RCT, otherwise known as a group RCT, are research designs in which groups (clusters) of participants are randomly allocated to the trial arms as opposed to individual participants (Eldridge & Kerry, 2012). A cluster RCT is often used in educational and healthcare settings where interventions are delivered at a cluster level to minimise contamination that may occur when individual participants are randomised (Donner, 2000). It is often believed that participants within the same cluster (same school), may be considered

more similar to each other than pupils from different schools. Therefore, pupils' outcomes are believed to be more similar for pupils within the same cluster than from other school clusters. There may be a number of reasons for this. For example, within a school, style of teaching and enthusiasm in delivering particular programmes may have an impact upon pupils within one school as compared to another. In addition, pupils attending one school are more likely to have similar backgrounds in terms of previous education and financial resources (Campbell et al., 2000).

Therefore, a cluster RCT was selected as appropriate to evaluate the effectiveness of the Guide Cymru. The methods for this research have been published as a protocol paper in BMC Public Health Journal, https://doi.org/10.1186/s12889-020-08736-z.

Aims and hypothesis

We hypothesised that children that receive the Guide Cymru would show greater MHL as indicated by: (1) greater knowledge of mental health issues, 2) better mental health-related behaviours, (3) less stigma towards those with mental illness, (4) reduced levels of self-stigma, (5) a reduction in avoidant coping styles, (6) a greater intention to seek help if they have a mental health problem.

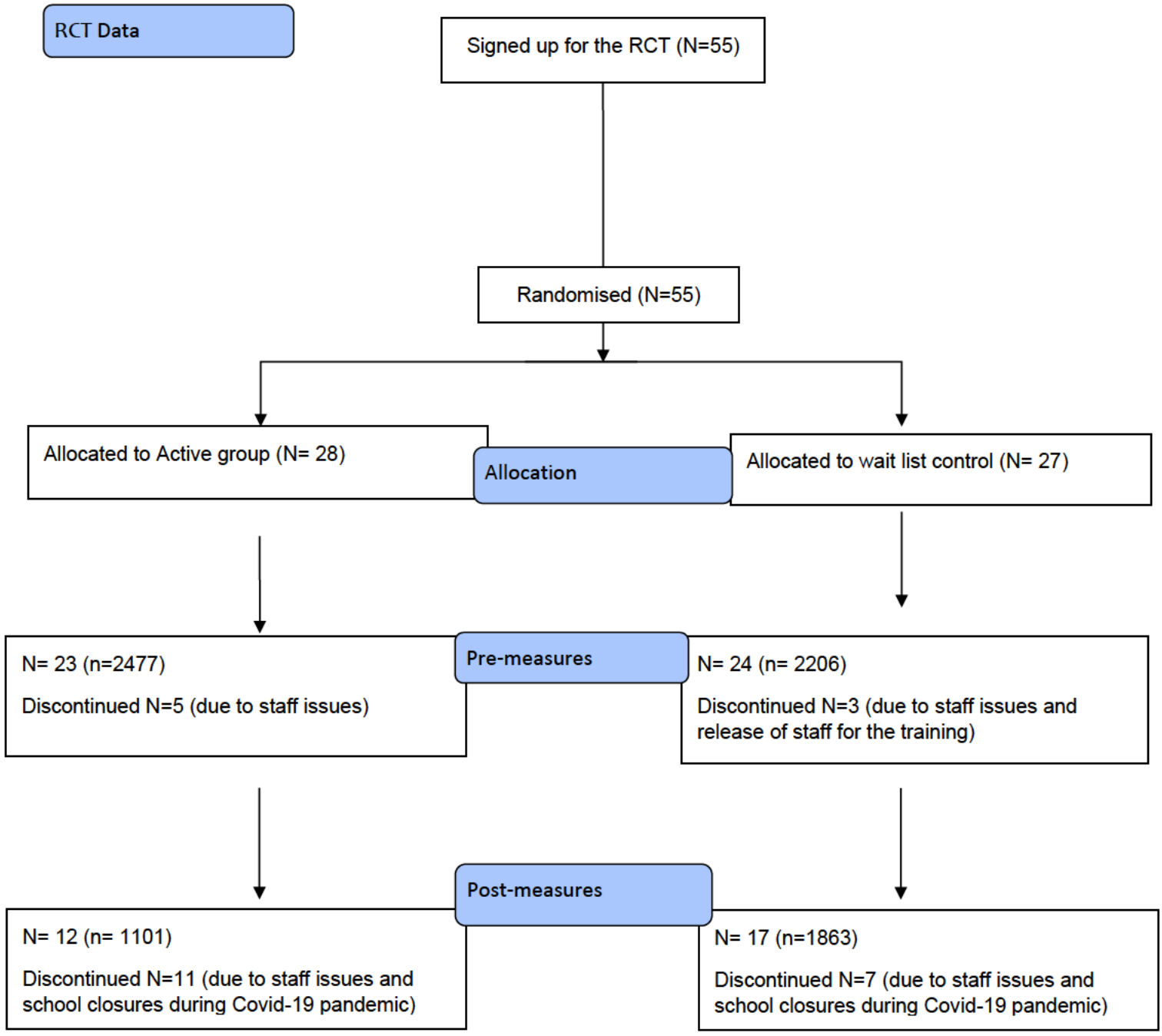
Methods

Study Design

An RCT design was used based on the guidelines from CONSORT for cluster RCTs (Campbell, Elbourne, et al., 2004). A CONSORT statement was used to describe the study procedures and participant numbers included in the RCT- see Figure 6.1.

The study design utilised a two-armed cluster RCT. The study had a repeated measures design, where data was collected at two-time points: baseline and post-intervention. The trial was registered at the ISRCTN Registry (www.isrctn.com) with registry number: 15462041,https://doi.org/10.1186/ISRCTN15462041.

Figure 6.1. CONSORT diagram demonstrating the flow of schools through each stage of the Randomised Controlled Trial.



Study population

Inclusion criteria for the RCT consisted of:

1) Mainstream secondary schools across Wales.
2) The ability and capacity of teachers to deliver the Guide Cymru as part of the curriculum to Year 9 pupils.
3) The ability for teachers to deliver the Guide Cymru within the required framework (10-12 weeks).
4) Up to three members of staff were able to attend the two-day training programme.

Exclusion criteria for the RCT consisted of:

1) Schools outside of Wales.
2) Primary, Special schools (for young people with learning Disabilities or Behavioural difficulties) or independent sector schools.
3) The inability to send at least one teacher on the two-day training programme.
4) The inability to deliver the Guide Cymru following receipt of the training programme.
5) Inability to deliver the Guide Cymru to pupils within the allocated time period.

COVID-19 disruption to schools

On March 23rd, 2020, all schools across Wales closed until the end of July 2020. This meant that data collection was put on hold. We were only able to use intervention schools' post-data that had been collected prior to this date (N=12). Furthermore, we were only able to use control school data that had been collected prior to this date (N=17). We were, therefore, unable to complete follow-up and post measures for a number of schools. Therefore, the data that is included in the RCT was collected during the period of September 2019 to March 2020. Schools that were scheduled to receive the Guide Cymru following this cut-off date were offered the training online by Action for Children. This data, however, is not included in the RCT. The rationale for this was that during this time, secondary schools across Wales

closed, and teaching was therefore being delivered online. This restricted the ability to monitor and control the time periods when the programme was being delivered to pupils and other confounding effects.

Sample size calculation prior to COVID-19 pandemic

A power analysis was conducted to determine the appropriate sample size for the research study. The cluster size is determined by the number of pupils within secondary schools across Wales. There are approximately 205 secondary schools in Wales, with approximately 30,000 pupils in Year 9 of around 150 pupils per school (although this cluster size varied across schools). A normal (non-clustered) RCT power analysis with parameters of alpha = .05, power of 80%, and a standardised effect size of 0.30 (a small effect size for Cohen's d and close to that obtained by Milin et al. (2016a) requires 175 pupils per group (N = 350).

Due to the fact that pupils within the same cluster group (school) may be correlated, resulting in the outcomes of individuals within the same clusters being more similar than those across clusters. The statistical measure of this 'clustering effect' is known as the intracluster correlation coefficient (ICC). The ICC is, therefore, the amount of variation within the dataset that can be explained by the variation between different clusters (Campbell, Grimshaw, et al., 2004). Therefore, to account for the reduction in power due to clustering, we assumed an average cluster size of 150 and an intra-cluster correlation coefficient (ICC) of 0.10, which leads to a design effect of 16. The design effect is a function of the average number of pupils per cluster and of the ICC (Naing et al., 2006). Therefore, this power analysis estimated that we would require 2800 (175*16) participants per group.

Sample size calculation following COVID-19 pandemic

Prior to the COVID-19 pandemic, our ICC assumptions were extremely cautious. Hence, we required a large sample size. However, on the 23rd of March 2020, the World

Health Organisation (WHO) declared a global health emergency, resulting in all schools across the UK physically closing (Toquero, 2020), which curtailed the data we were able to collect. Research has highlighted that ICC is generally in the range of 0.01-0.02 in human research studies (Killip et al., 2004). Therefore, taking a more liberal approach, with an ICC of 0.02 and with a design effect of 4, this power analysis estimated an average of 700 (175*4) participants per group.

Multi-level modelling (MLM) was used to calculate the ICC to account for clustering in the actual data collected. ICCs ranged from 0.003 to 0.051 (mean = 0.024, SD= 0.01), which is in line with our more liberal approach (ICC estimate of 0.02). Hence, the study (over) achieved the required sample size and was, therefore adequately powered. See Table 6.1 for ICCs for each mental health scale of the KAMHS.

Table 6.1 ICCs for each MHL subscale of the KAMHS.

Mental health literacy subscale (KAMHS)	Intra-cluster correlation coefficient (**ICC)**
Mental Health Knowledge	0.003
Good Mental Health Behaviours	0.029
Mental Health Stigma	0.051
Mental Health Self-Stigma	0.025
Avoidant Coping	0.013
Help-seeking Behaviour	0.025

Study Setting

Data collection for the RCT ran from 1st September 2019 to 30th March 2020. Fifty-five secondary schools originally signed up to take part in the RCT, 47 schools took part in baseline measures, but due to staffing and school closures along with COVID-19 issues, the study took place in 29 secondary schools in Wales.

Participants

All pupils aged 13-14 years in Year 9 secondary schools in Wales were invited to participate in the research study. Fifty-five schools signed a Service Level Agreement (SLA) for Action for Children and agreed to participate in the RCT, see Appendix H. The Service Level Agreement includes information regarding support that Action for Children could provide, an agreement to take part in the training and delivering of the programme and a part of the RCT evaluation. Further to this, The Guide Information document, see Appendix I, was also sent to schools. It was deemed necessary that schools were informed of the intentions of the research and what was expected of them. Out of 205 secondary schools in Wales, we received a response rate of 26.83%. Of this, a total of 29 schools successfully took part in the RCT. There are several reasons for school dropout, including the practicality of

delivering the programme within a 12-week period, schools being unable to release staff for training, and school closures during the COVID-19 pandemic.

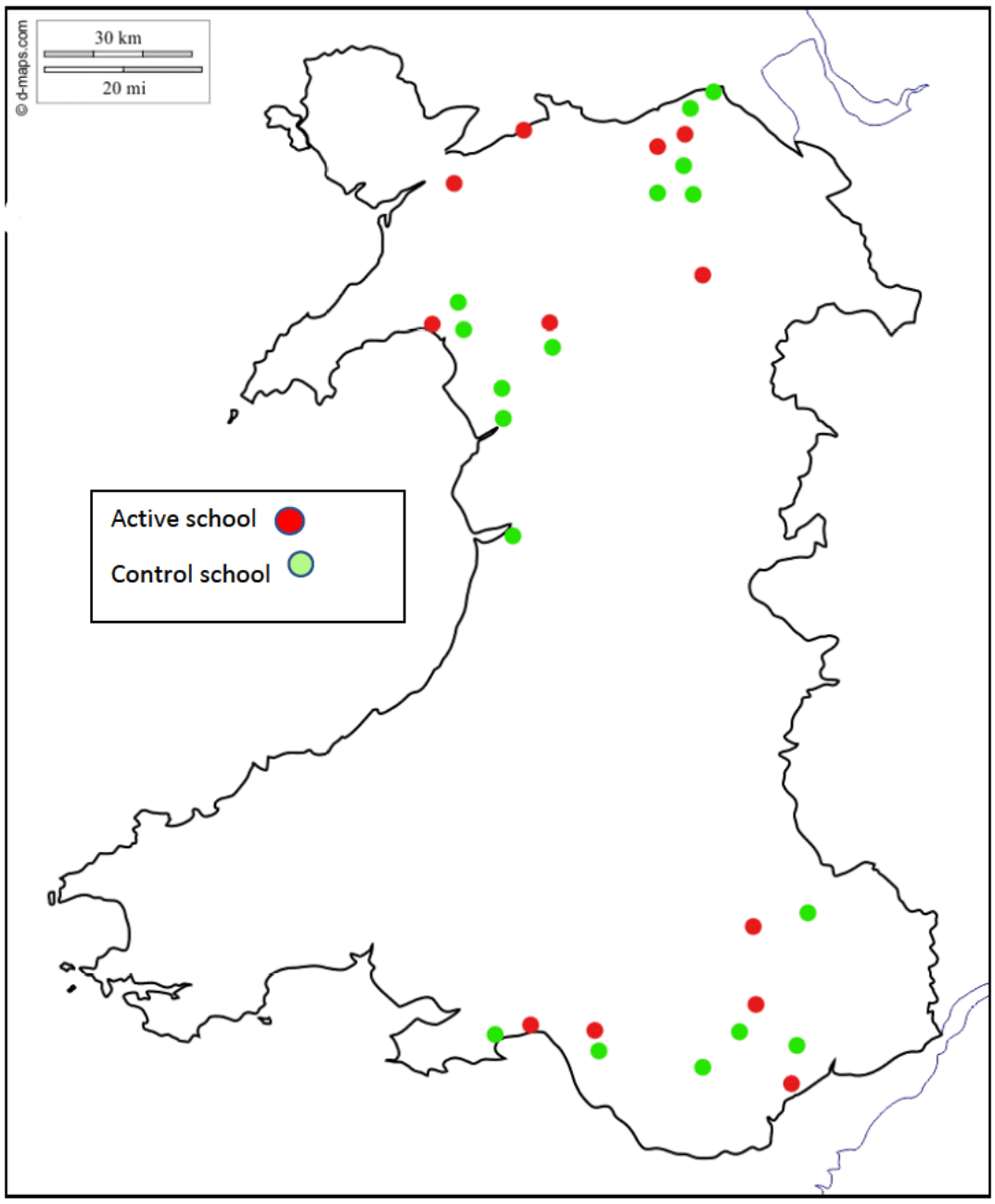
Once schools had signed up to participate in the programme, they were allocated dates of in-person training based on their location in Wales. Eight schools were located in South Wales, two in West Wales, two in East Wales and 17 in North Wales. North Wales training and delivery of the programme took part during the period of September-December 2019 and then South Wales training took place in January-March 2020. Due to the COVID-19 pandemic resulting in all schools closing in March 2020, a number of South Wales schools had not finished delivery of the Guide programme and, therefore, could not be included in the RCT. This resulted in the majority of schools in the RCT taking part being from North Wales.

860 males and 1066 females took part in the RCT. See Table 6.2 for participant details situated in each secondary school. Figure 6.2 demonstrates a map of Wales, illustrating the locations across Wales for both Active and Control schools (Red=Active group, Green= Control group).

Table 6.2 Number of participants and gender within each school and school setting.

School setting	School	Active/Control	Males	Females	Prefer not to say	Total
South Wales	School 1	Active	72	87	1	160
	School 2	Active	48	36	3	87
	School 3	Control	46	65		111
	School 4	Control	10	34		44
	School 5	Active	34	57		91
	School 6	Active	58	59		117
	School 7	Control	37	69	1	107
	School 8	Control	62	74	1	137
West Wales	School 9	Control	25	17		42
	School 10	Control	29	33	2	64
	School 11	Control	34	40	1	75
East Wales	School 12	Control	38	54		92
	School 13	Active	32	35		67
North Wales	School 14	Control	15	11	1	27
	School 15	Control	15	27		42
	School 16	Active	6	19		25
	School 17	Control	72	77		149
	School 18	Control	9	11		20
	School 19	Active	9	9		18
	School 20	Control	18	22		40
	School 21	Active	10	16	1	27
	School 22	Active	11	7		18
	School 23	Active	18	40		58
	School 24	Active	31	41	2	74
	School 25	Control	12	12		24
	School 26	Control	11	10	1	22
	School 27	Control	32	32	2	66
	School 28	Control	60	65		125
	School 29	Active	6	7		13
Total			**860**	**1066**	**16**	**1942**

Figure 6.2. Map of 29 distributed secondary schools across Wales that took part in the RCT (Red=Active group, Green= Control group).



Project team

The project team involved a collaboration between Swansea University, Cardiff University, and Action for Children. The academic team (Swansea and Cardiff University) involved two supervisors and a PhD Student who led on the development and design of the RCT evaluation, management of the RCT and 2/3 of data collection from schools.

Action for Children led to the recruitment of schools to participate in the programme and deliver the Guide programme to teachers. Action for Children staff was also responsible for 1/3 of the data collection.

Recruitment of schools

All state secondary schools in Wales were sent a direct email from Action for Children to their headteacher offering free training for up to three teachers on the MHL programme: the Guide Cymru. Schools were informed that the programme is an evidence-based intervention and resource that can be used as part of the Personal, Social, Health and Economic education or as part of the Health and Wellbeing area of learning and Experience within each school. The initial invitation to schools included an invitation to participate in the study, a brief outline of the Guide Cymru, what would be involved, and the purpose and aims of the evaluation (RCT).

Following this, a comprehensive approach was taken to recruiting secondary schools across Wales. Action for Children began their initial process through raising awareness with systems that support schools, such as Healthy School's co-ordinators in regional areas across Wales, school nurses, and school well-being forums. Healthy School co-ordinators are a part of the Welsh Network of Healthy School Scheme (WNHSS) that encourages the development of local healthy school schemes within a national framework. This involved delivering the programme to various teams for feedback and support in recruiting various schools in their area. This part of the project was managed and coordinated by staff at Action for Children.

Action for Children also collaborated with other third-sector organisations such as Samaritans and Young Minds to establish what support was available and what was being offered to schools. This approach enabled the ability to target various areas in which we had received limited or no contact. They also emailed each Local Education Agency Director directly, initially introducing the Guide Cymru, promoting the Guide Cymru, reviewing with them what schools in their area had offered interest in the Guide Cymru and encouraging further recruitment of schools from which we had no contact. They also presented at National conferences to advertise and recruit headteachers.

Randomisation and blinding

Randomisation is a procedure that is central to an RCT as it aims to eliminate selection bias and unknown confounding factors to create a control group that is similar to the treatment group. Randomisation is the process of assigning participants to an experimental or control group at random, with the premise that each participant has an equal probability of being assigned to either group (Schulz & Grimes, 2002). In this study, the randomisation of schools occurred at the level of schools that had signed up to participate in the Guide Cymru RCT.

Schools were randomised into either active (intervention group) or waitlist (control group) following schools' agreement to take part. Given the nature of the research study, the schools and pupils could not be blinded as to which arm of the RCT they were in. Schools were stratified by geographical area to ensure that both intervention and waitlist control schools were from geographical backgrounds, such as socioeconomic status and their use of the Welsh language. A computer-generated random sampling procedure was used to ensure unbiased allocation to the active and waitlist group: RANDOM.ORG - True Random Number Service. Randomisation was conducted by the PhD supervisors of the project to avoid any influence from the project team.

Once schools had been randomised into either active or waitlist control groups, they were then yoked by the PhD supervisors. The yoking process involved allocating an intervention school to a control school according to random allocation and geographical location as this was beneficial for the PhD student being able to travel to both yoked schools within the same day. Further to this, this ensured that the same procedures took place within both yoked schools on the same day. Such procedures involved the same day data collection and the same researcher collecting that data from schools for each wave of testing.

Outcome measures

Knowledge and Attitudes to Mental Health Scale (KAMHS) (Simkiss et al., 2021).

The KAMHS V3 measure is a questionnaire designed for children and adolescents aged 11 to 16 years. The KAMHS instrument measures MHL over 6 domains: (1) Mental health knowledge, (2) Mental health stigma (lack of), (3) Self-stigma (lack of), (4) Good mental health behaviour, (5) Avoidant coping (lack of), and (6) Help-seeking behaviour. The KAMHS also contains a social desirability scale to measure and control for positive impression management. Participants are asked to respond to statements on a five-point Likert scale (strongly agree, agree, don't know, disagree, strongly disagree) with higher scores indicating higher MHL (e.g., greater knowledge, less stigma, greater intentions to seek help, etc.). The scales of the KAMHS have shown good psychometric properties, including good internal reliabilities, for example, (Lack of) Self-stigma (lack of) Stigma, and Help-seeking Behaviours exhibited acceptable or good reliability (ω = .66 to .80) Good Mental Health Behaviours and (lack of) Avoidant Coping, ω demonstrated a lower internal reliability of (ω=.61 to .53). The KAMHS scales also demonstrated good test-retest reliabilities ranging from (.40 to.64) (Simkiss et al. 2021), also presented in Chapter 3.

RCT procedure

Data was collected in two waves.

Changes to RCT outcomes after trial commenced

Data was due to be collected in three waves: pre, post and follow-up. However, due to circumstances of COVID-19 and closure of secondary schools across Wales, data collection was collected in two waves at baseline and post-intervention. Follow-up data collection was due to be collected 12 weeks following post-intervention measures, and this measure would have provided evidence for long-term effects of the Guide Cymru.

Wave one

Wave one aimed to provide baseline MHL measures from both active and control schools. The wave occurred approximately 1 week prior to the active schoolteachers being trained on how to administer the Guide. Teachers would then deliver the intervention programme to their Year 9 pupils over the following 10 to 12 weeks. A member of the data collection team visited each school on the day of testing to help the teachers administer and complete the questionnaires with pupils. For each school in the intervention arm of the RCT, there was a "yoked" school in the wait list control arm and the data from the yoked school was collected on the same day and by the same researcher as the one in the active arm.

Wave two

Wave two occurred approximately 1-2 weeks post the delivery of the Guide Cymru for the students in the intervention arm of the study, with the waitlist control yoked schools also being tested at the same time.

Wave three (amended)

Wave three was due to occur approximately 1–2 weeks post the delivery of the Guide Cymru for the students in the wait list control arm of the study, with the yoked school in the active arm being tested at the same time (which will be approximately 14 weeks after these schools had completed the MHL intervention). However, due to Covid-19, we were only able to collect data from wave one and wave two. Four schools completed this wave online,

however, they were excluded from further data analysis due to them being completed online during the Covid-19 Pandemic.

Data collection procedure

Data collection took place within each secondary school. Consent was received on behalf of the pupils by the headteacher of the school, see Appendix I. The Service Level Agreement (SLA) was signed by head teachers, which authorised agreement in taking part in the research and on behalf of pupils completing the anonymous questionnaires during their Personal, Social, Health and Economic (PSHE) education lessons. Schools were sent an information sheet outlining the purpose of the evaluation questionnaires, which they could then send to parents to inform them of the programme and evaluation, see Appendix J.

The data collection team would arrange with the schools a suitable time and date that would suit them. This took place a week before their teachers attended the Guide Training (active schools), which was in line with the yoked schools (waitlist controls). Questionnaires were completed via pen and paper and were available in the English or Welsh language for pupils. The PhD student was present during the completion of the questionnaires for consistency and to allow any questions to be answered. Having a researcher present within the school whilst pupils completed the questionnaires gave an extra hand in reading the questionnaires to pupils who struggled. Teachers were also available to help read questions and support pupils. Coloured copies of the questionnaires were provided for pupils who required them, for example, pupils with additional learning needs.

Before completion of the questionnaires, the PhD student would outline the rationale behind completing the questionnaires, explain the research intentions and answer any questions the pupils had. Pupils were also informed that they should not put their names on them to preserve anonymity, and if there was anything the pupils did not wish to complete, they were told to leave it blank. Pupils would complete the surveys alone, some with

additional support from teachers where needed. It was recommended that they complete the survey in silence, but we were able to answer any questions if needed. The researcher initially informed pupils that if they did not wish to take part in the evaluation, they had the right to opt-out. However, no pupils opted out.

Questionnaires took approximately 20-25 minutes to complete and were handed directly to the data collection team. Pupils were reminded that the questionnaires are anonymous, thanked for their time and commitment to the research project, and informed of who to contact within the school if they had any further questions or queries. Arrangement of post-data collection completion took place while at the school. These arrangements were made with the staff members who attended the training.

Ethical approval

Completed questionnaires contained limited personal information to preserve anonymity. Gender and age were the only demographics collected from pupils. This trial received ethical approval by Swansea University, 29/10/2019 Ref: 2018–0272-259, See Appendix B. The Guide Cymru was being adopted as part of the National Curriculum of Personal Social Education (PSE) in schools in Wales and is therefore delivered to all children within the year group at each school. It was not deemed necessary to obtain informed consent from either the pupil or parent as the Guide Cymru would be included within the curriculum of the school. Schools sent out an initial letter to parents detailing the Guide programme and explained that the programme would be delivered during Personal, Social, Health and Economic (PSHE) education lessons and provided the option for pupils to opt-out if they wished.

Pupils were made fully aware of the project aims and the role of the information that they provided. If there is anything they did not wish to complete, they were informed that they did not have to complete the survey. The evaluation questionnaires were used solely to

evaluate the MHL programme to see whether it has helped improve mental health knowledge, reduce mental health stigma levels, and improve help-seeking behaviours. Questionnaires were not left within the schools as schools have information to identify the child who has completed the survey.

Data management

Questionnaire data was inputted electronically to score each scale of the KAMHS and saved to a password-protected memory stick by the PhD student. A minimum of 10% veracity checks were completed on all data entry by two members of staff at Action for Children and the PhD student. Using a random number generator, the PhD student allocated to these volunteers to complete veracity checks upon the data entry. All databases were secured with password-protected access systems. All participant paper questionnaires were stored in locked file cabinets in areas with limited access.

Matching of participant data

Pre and post-questionnaires were matched on four "code" questions that allow for tracking the person pre and post completion of the programme. These included (name of first pet", "date of your birthday (e.g., 23rd)", "house number", and "favourite colour"). This was the same matching scheme used by Kutcher et al. (2015).

Missing data

Missing data was explored using descriptive analysis to evaluate whether any missing data was associated with baseline characteristics and to evaluate the acceptability of outcome measures used. For the current study, missing responses were pro-rated to the scale mean. If more than 50% of the items were missing, participants were excluded from analysis. For missing scores on one or more of the items comprising a scale, prorated scale scores were computed by averaging the items that were available (e.g., if a pupil answered ten out of twelve items, the prorated scale score was the average of the ten responses that were available), this is a well-known method for large samples of data (Schafer & Graham, 2002).

Further to this, this approach seemed appropriate as a relatively high proportion of the items were filled in and the KAMHS scales demonstrated good internal consistency.

Of the 29 schools included in the RCT, we collected 2426 pre-measures and 2713 post-measures. Of this, using an accuracy of 90% and above to ensure the participant data matched appropriately, the number of matched participants for both pre and post-questionnaires was 1942 (75.6%). 484 pre-measures and 771 post-measures were unmatched (24.42%). Unmatched questionnaires may be due to missing information provided in the four code answers, incorrect responses to the coding questions, and absences in school on the day of data collection.

Statistical analysis

Multi-level modelling justification

We utilised multi-level modelling (MLM) with a repeated-measures design conducted by SPSS Version 26 to evaluate the effectiveness of the Guide intervention by examining change over time (from pre-intervention to post-intervention). There are several advantages to using MLM compared to other analyses, such as the ability to test individual differences in growth curves (Tabachnick & Fidell, 2014). In addition to this, the MLM approach accounts for missing data at Level 1 by estimating the trajectory using all existing data for that participant.

MLM is a statistical method that can be considered an extension of multiple regression. It aims to assess a dependent variable's variance attributable to the independent variables being measured (Field, 2009). Taking a step further, MLM takes into account the hierarchical and clustered make up of data sets (Tabachnick & Fidell, 2014). Considering this, different levels of variables can be created within the analysis, for example, individual-level variables such as gender and age and school-level variables such as area of locality and socioeconomic status.

In this study, multi-level analysis was used to account for the randomisation of clusters rather than individuals in the allocation of secondary schools to the intervention and control arms of the study. The study has three levels, level one consists of time (pre/post), level 2 was condition (active/control), and level 3 was school predictors from clustering of participants in schools across Wales. We included school at a level, as teaching ability of the staff in delivering the Guide will be a factor along with pupils in the same school tend to be similar to each other, as perhaps they live in a similar socioeconomic status (SES) locality because of the common history shared by going to the same school. Consequently, the average correlation between variables measured by pupils from the same school is likely to be higher than the average correlation between variables measured by pupils from different schools and different locations across Wales.

Firstly, multi-level analysis was used to assess the effects of the intervention on participants. For all analyses, time and condition were included as fixed effects. With 756 participants in the intervention group and 1184 in the control group, MLM has the advantage of using restricted maximum likelihood estimation (REML), which produces a more balanced parameter estimate for conditions and groups with unbalanced group size (Garson, 2013).

The dependent variables were good mental health behaviours, a lack of mental health stigma, a lack of mental health self-stigma, mental health knowledge, help-seeking behaviours, and a lack of avoidant coping as measured by the KAMHS. Pairwise comparisons of both active and control groups were performed to show any significant differences between pre and post-testing conditions. Effect sizes (g) for condition effects were also calculated.

Results

Table 6.3 illustrates means and standard errors for KAMHS scores for intervention and control groups at time 1 and time 2.

Table 6.3. Mean and standard errors for intervention and control groups for pre- and post-intervention. Higher scores indicate a better MHL score, with a possible range of 0-4.

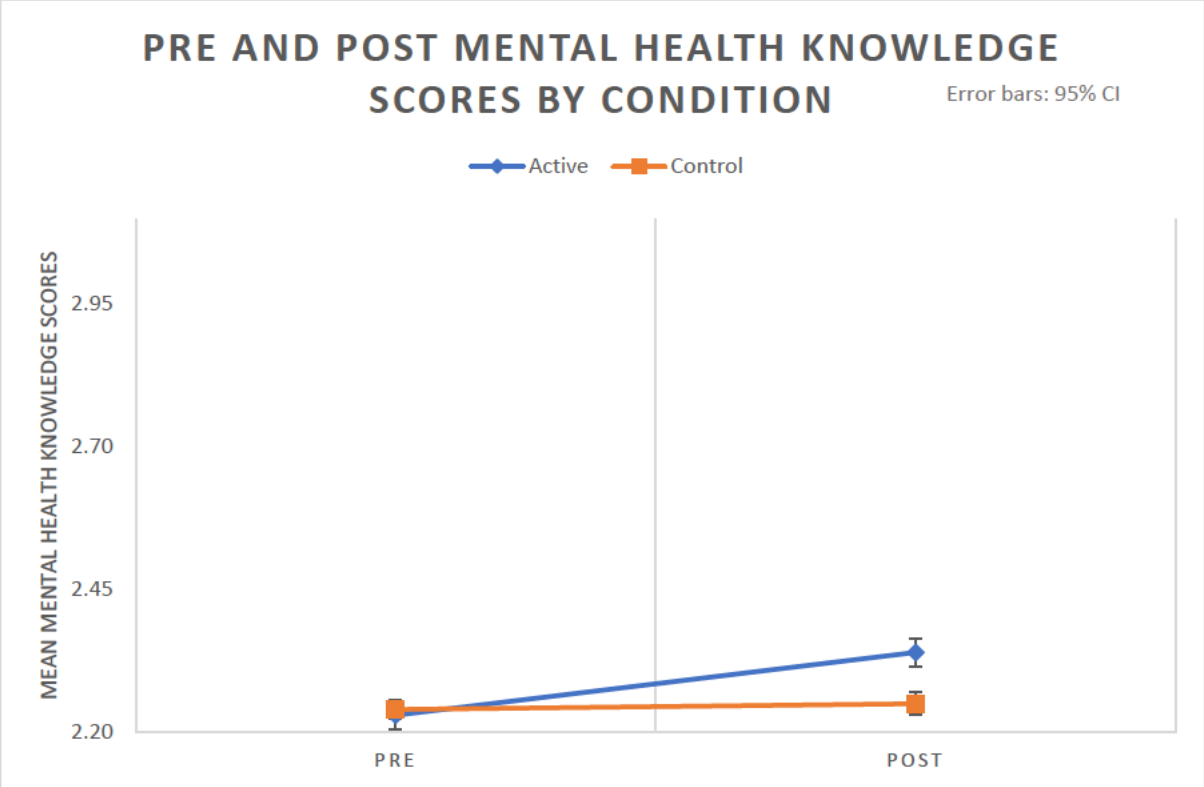
KAMHS subscale	**Intervention (n=756)**		**Control (n=1184)**	
	Pre	**Post**	**Pre**	**Post**
Knowledge	2.24 (.01)	2.35 (.01)	2.25 (.02)	2.25 (.01)
Good mental health behaviours	2.65 (.02)	2.77 (.02)	2.64 (.01)	2.67 (.02)
Lack of Stigma	2.98 (.02)	3.08 (.02)	3.00 (.02)	2.95 (.02)
Lack of Self-stigma	2.33 (.03)	2.38 (.03)	2.33 (.02)	2.36 (.02)
Lack of Avoidant coping	2.30 (.02)	2.39 (.02)	2.28 (.02)	2.30 (.02)
Help-seeking behaviours	2.35 (.03)	2.47 (.03)	2.37 (.02)	2.36 (.02)

Mental health knowledge

MLM analysis of the model revealed a significant main effect of time $F(1, 1939.77) = 64.37$, $p < .001$, and a significant main effect of condition, $F(1, 1957) = 11.13$, $p = .001$. MLM analysis of the model also revealed a significant time-by-intervention effect on pupils' knowledge, $F(1, 1941) = 47.80$, $p < .001$.

Pairwise comparisons of the active group showed a significant increase in knowledge scores from pre ($M = 2.24$, $SE = .01$) to post-intervention ($M = 2.35$, $SE = .01$), $t(755) = -8.22$, $p < .001$, $g = 0.32$, 95% CI [0.24,0.40]. Whereas there was a non-significant difference for waitlist control (control) pupils from pre ($M = 2.25$, $SE = .01$) to post ($M = 2.25$, $SE = .01$), $t(1183) = -1.03$, $p = .306$, $g = 0.03$, 95% CI [-0.02-0.09] see Figure 6.3.

Figure 6.3 Pre and post-test mean knowledge scores by condition.

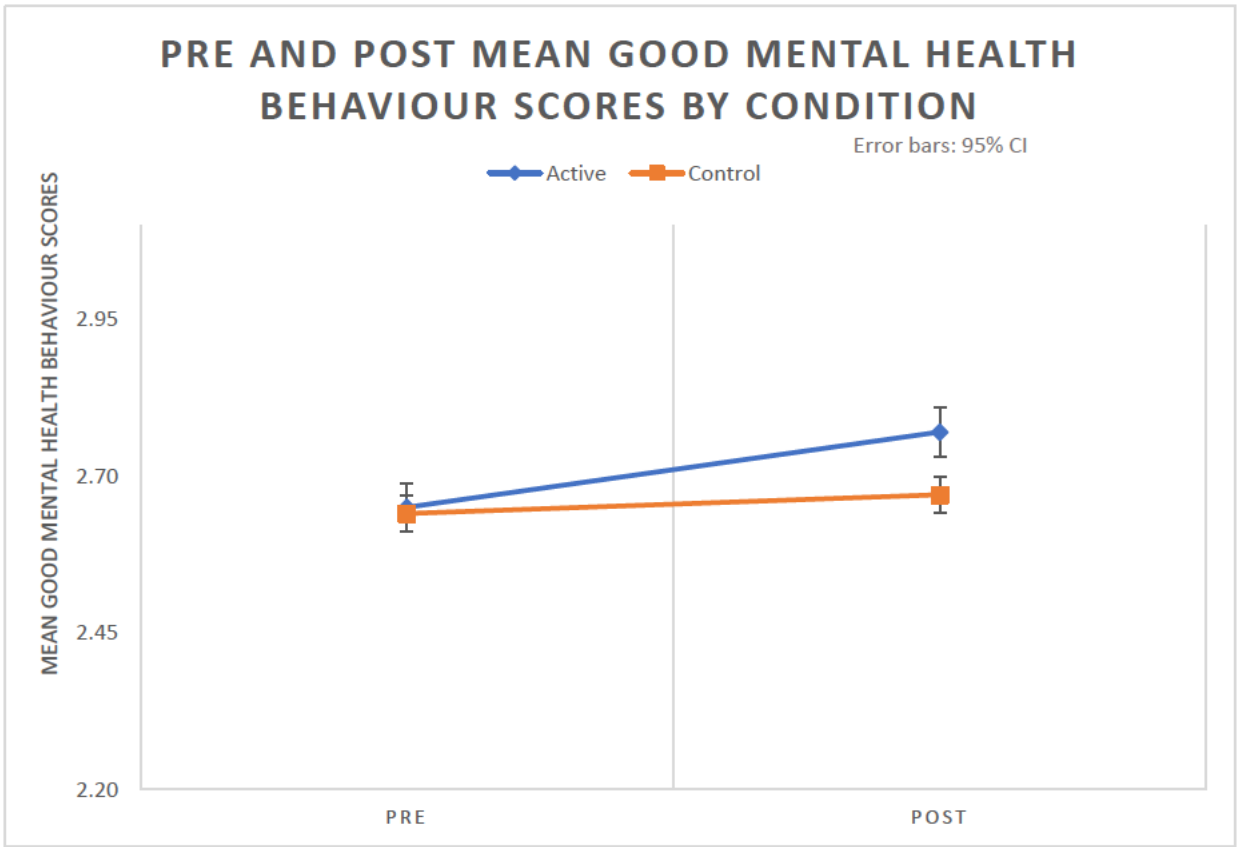


Good mental health behaviours

MLM analysis of the model revealed a significant main effect of time $F(1, 1939) = 37.09$, $p < .001$, and a significant main effect of intervention, $F(1, 1957.27) = 8.34$, $p = .004$. MLM analysis of the model also revealed a significant time-by-intervention effect on good mental health behaviours $F(1, 1941) = 14.58$, $p < .001$.

Pairwise comparisons of the active group showed a significant increase in good mental health behaviour scores from pre ($M = 2.65$, $SE = .02$) to post-intervention ($M = 2.77$, $SE = 0.02$), $t(755) = -5.98$, $p < .001$, $g = 0.22$, CI 95% [.15, 0.3]. Waitlist control (control) pupils did not show an increase in scores across time (pre mean= 2.64, SE=.02; post mean=2.67, $SE = .02$), $t(1183) = -1.957$, $p = .051$, $g = 0.06$, 95% CI [0.002,0.12], see Figure 6.4.

Figure 6.4 Pre and post-test mean good mental health behaviour scores by condition.

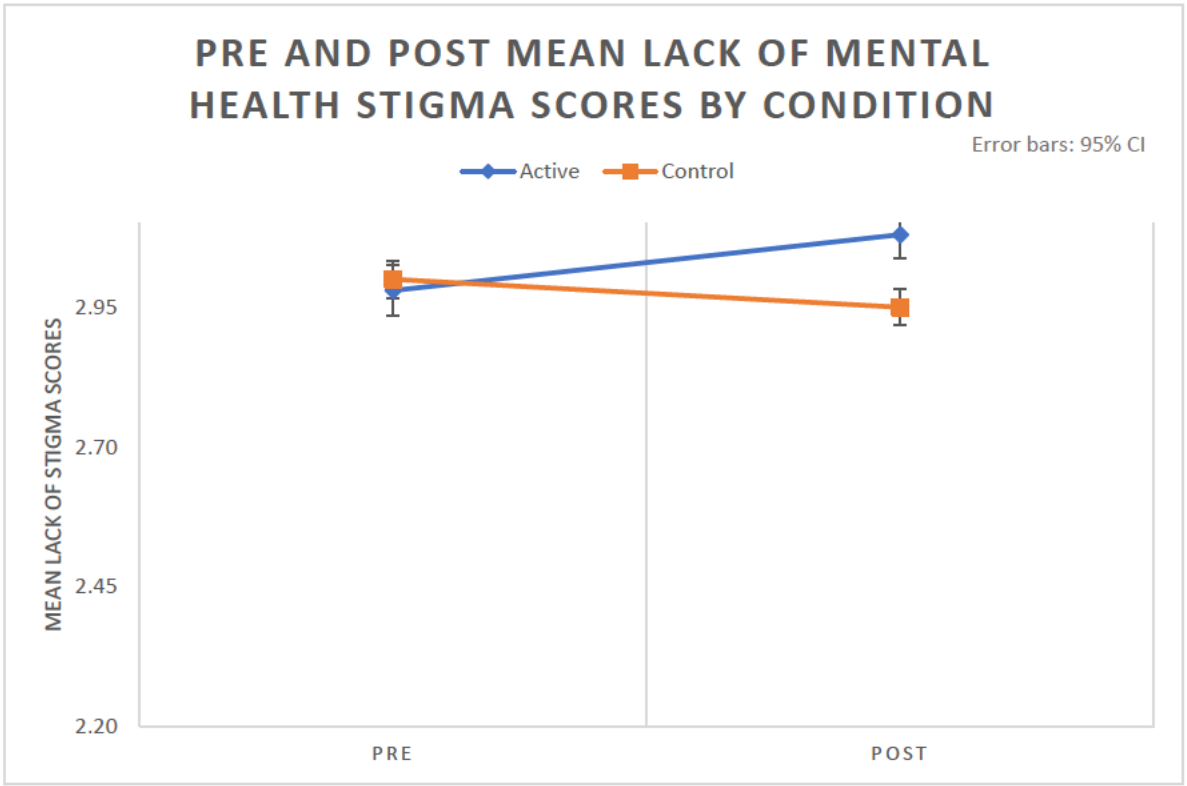


Mental health stigma

MLM analysis of the model revealed a non-significant main effect of time $F(1, 1936.96) = 3.69$, $p = .055$, but a significant main effect of condition, $F(1, 1961) = 5.27$, $p = .022$. MLM analysis of the model also revealed a significant time-by-intervention effect on a lack of mental health stigma, $F(1, 1938) = 36.39$, $p < .001$.

Pairwise comparisons of the active group showed a significant increase in a lack of mental health stigma scores from pre ($M = 2.98$, $SE = 0.02$) to post-intervention ($M = 3.08$, $SE = 0.02$), $t(755) = -4.72$, $p < .001$, $g = 0.16$, 95% CI [0.09, 0.23]. Whereas waitlist control (control) pupils showed a significant decrease from pre (mean= 3.00, SE = 0.02) to post (M=2.95, SE=.02), $t(1183) = 3.56$, $p < .001$, $g = 0.09$,95% CI [-0.03, -0.14], see Figure 6.5.

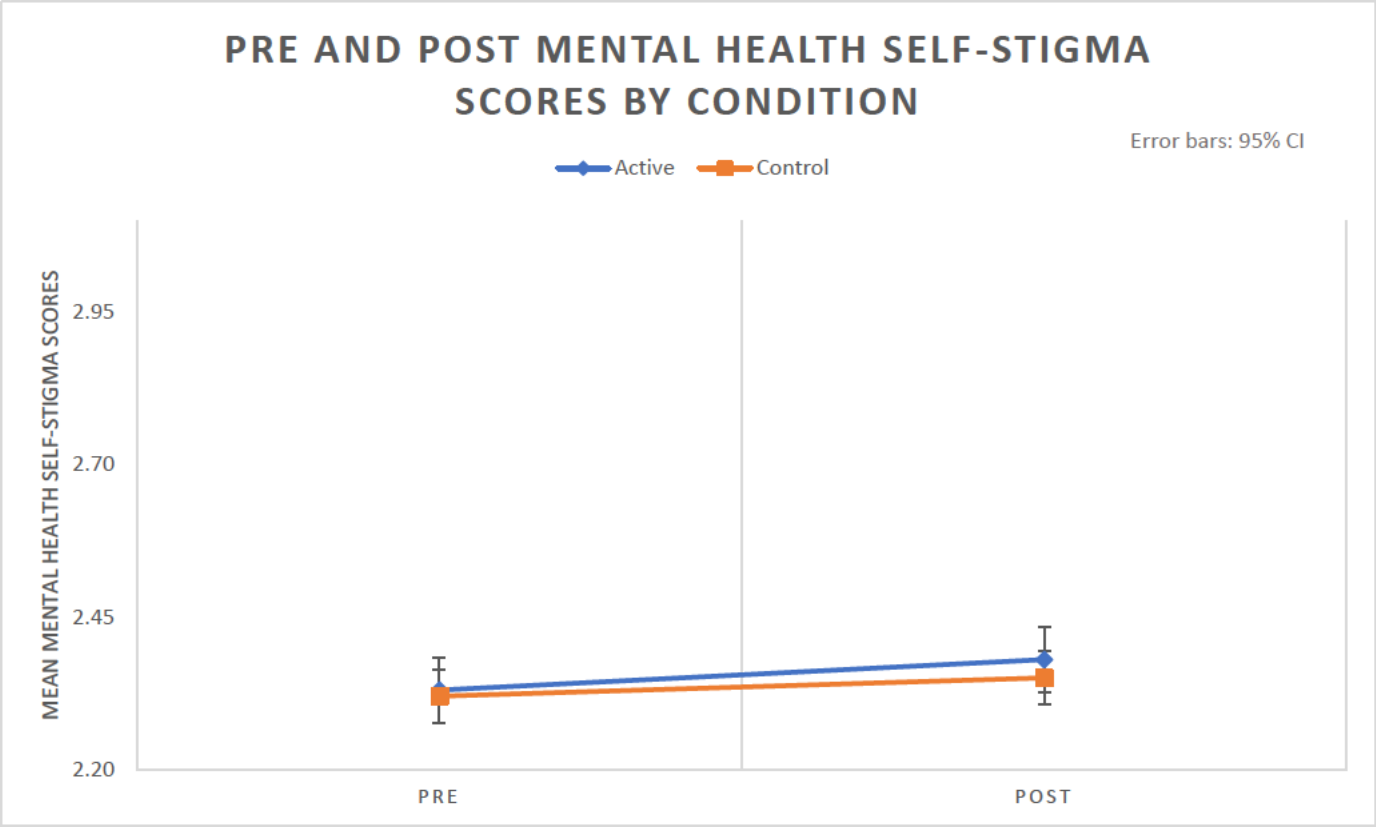
Figure 6.5 Pre and post-test mean lack of mental health stigma scores by condition.



Mental health self-stigma

MLM analysis of the model revealed a significant main effect of time $F(1, 1939) = 6.12$, $p = .012$, and a non-significant main effect of condition $F(1, 1964.39) = .14$, $p = .71$. MLM analysis of the model also revealed a non-significant time-by-intervention effect on pupils' lack of self-stigma, $F(1, 1941) = .29$, $p = .59$, see Figure 6.6. As the interaction was not significant no follow-up tests were performed.

Figure 6.6 Pre and post-test mean lack of self-stigma scores by condition.

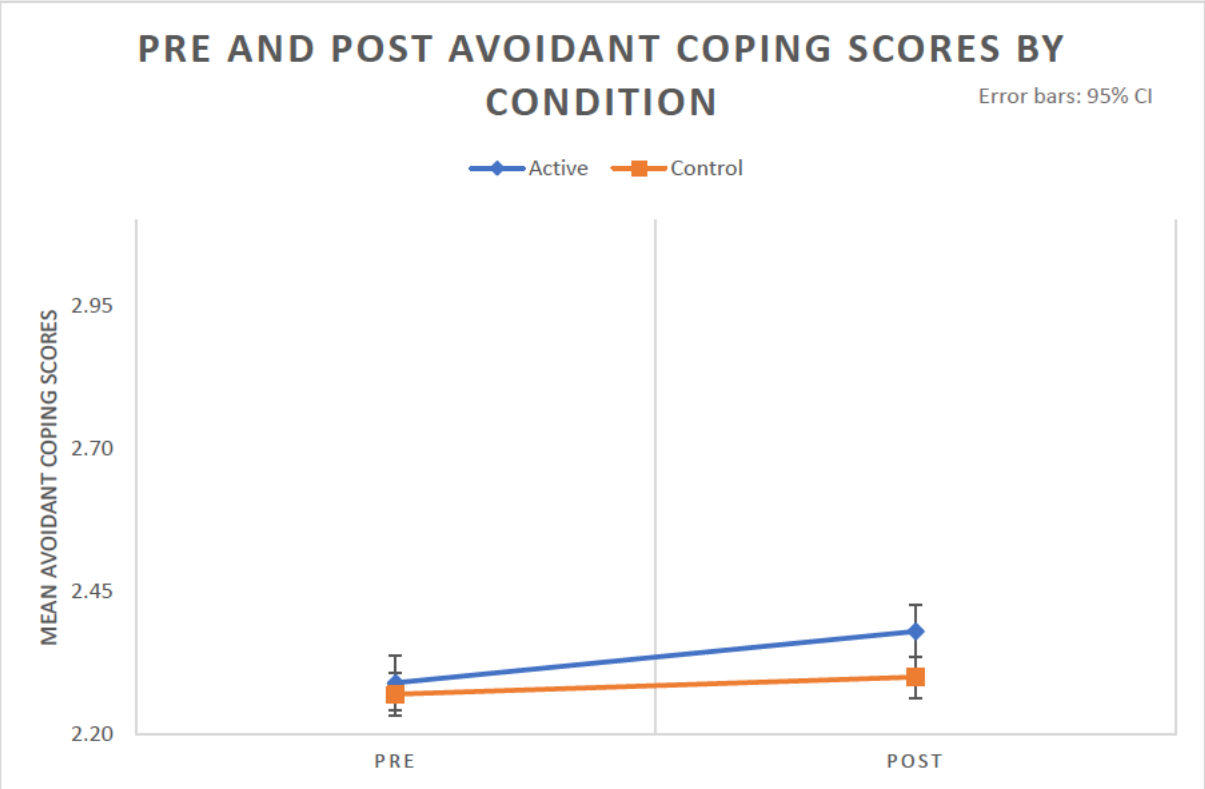


Lack of Avoidant coping

MLM analysis of the model revealed a significant main effect of time $F(1, 1939) = 14.08$, $p < .001$, and a significant main effect of condition $F(1, 1957.81) = 3.84$, $p = .050$. MLM analysis of the model also revealed a significant time-by-intervention effect on pupils' lack of Avoidant coping, $F(1, 1941) = 5.02$, $p = .025$.

Pairwise comparisons of the active group showed a significant increase in a lack of Avoidant coping scores from pre ($M = 2.30$, $SE = .02$) to post-intervention ($M = 2.39$, $SE = .02$), $t(755) = -3.67$, $p < .001$, $g = 0.14$, 95% CI [0.06,0.21]. Waitlist control (control) pupils showed a non-significant difference from pre ($M = 2.28$, $SE = .02$) to post ($M = 2.30$, $SE = .02$), $t(1183) = -1.37$, $p = .182$, $g = 0.03$, 95% CI [0.03,0.09], see Figure 6.7.

Figure 6.7 Pre and post-test mean lack of Avoidant coping scores by condition.

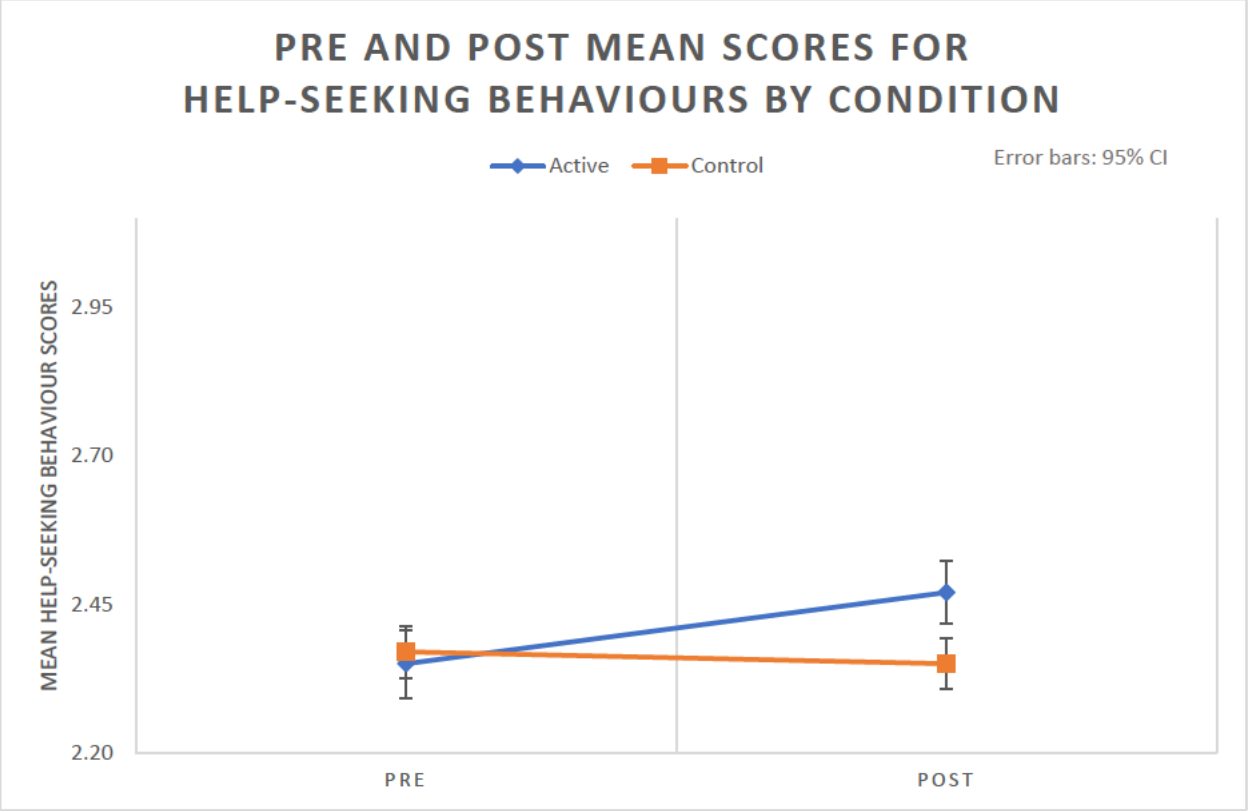


Help-seeking behaviours

MLM analysis of the model revealed a significant main effect of time $F(1, 1939) = 11.09$, $p = .001$, and a non-significant main effect of condition, $F(1, 1966.24) = 2.31$, $p = .129$. MLM analysis of the model also revealed a significant time-by-intervention effect on pupils' intensions to seek help, $F(1, 1941) = 17.08$, $p < .001$.

Pairwise comparisons of the active group showed a significant increase in intentions to seek help from pre ($M = 2.35$, $SE = .03$) to post-intervention ($M = 2.47$, $SE = .03$), $t(755) = -4.45$, $p < .001$, $g = 0.15$, 95% CI [0.09, 0.22]. Waitlist control (control) pupils showed a non-significant difference from pre ($M = 2.37$, $SE = .02$) to post ($M = 2.35$, $SE = .02$), $t(1183) = 0.78$, $p = .438$, $g = -0.03$, 95% CI [-0.06, 0.03], see Figure 6.8.

Figure 6.8. Pre and post-test mean help-seeking behaviours scores by condition.



Change in scores (post-pre) for active and control groups

Having observed the change in scores from baseline for both active and control groups, we then calculated the mean change in scores for both active and control groups. Mean change in scores provide a clear and simple summary of the average change within a variable between two-time points. They are calculated by subtracting post-scores from pre scores for each subscale of the KAMHS.

Figure 6.9 demonstrates the mean differences for both active and control groups pre and post-scores. Figure 6.9 shows that the mean difference for good mental health behaviours, mental health stigma, help-seeking behaviours, mental health knowledge and avoidant coping are much greater for active groups than the control. Table 6.4 also demonstrates no difference between the mean differences for Mental health self-stigma for active (0.05) and control groups (0.03). See Table 6.4 for descriptive statistics for mean differences (post-pre) for KAMHS subscales for active and control groups.

Figure 6.9. Change in scores (post-pre) for KAMHS subscales for active and control groups.

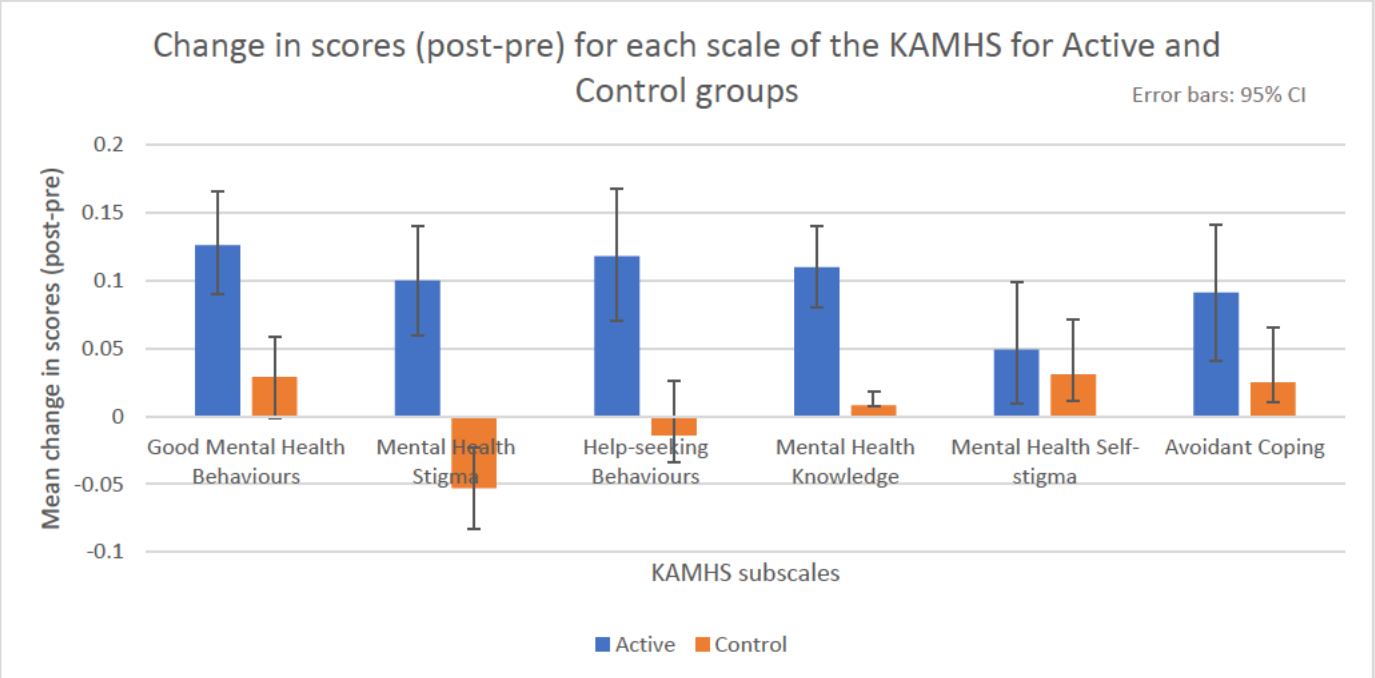


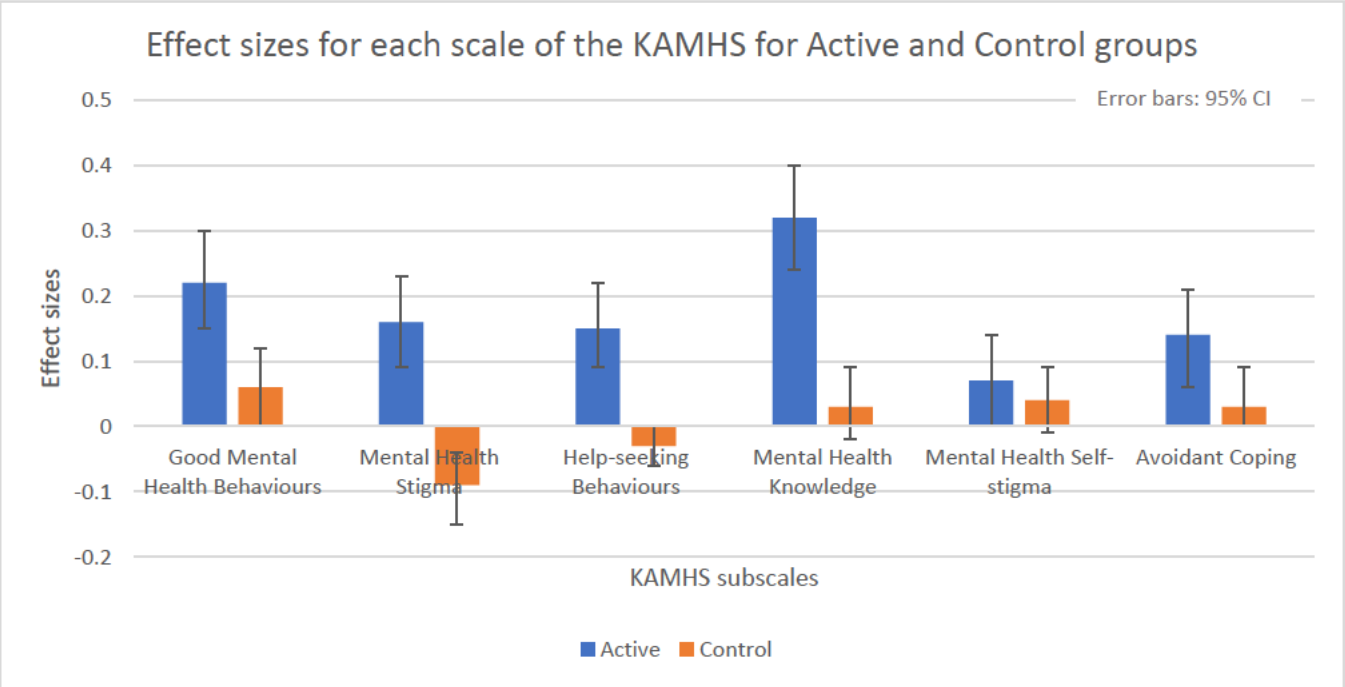
Table 6.4 Descriptive statistics for mean differences (post-pre) for Active and Control groups.

	Active					Control				
KAMHS subscale	**N**	**Mean difference (post-pre)**	**Standard Deviation (SD)**	**Standard Error (SE)**	**Confidence Interval (CI)**	**N**	**Mean difference (post-pre)**	**Standard deviation (SD)**	**Standard Error (SE)**	**Confidence Interval (CI)**
Mental health knowledge	756	0.11	0.37	0.03	[0.08,0.14]	1184	0.009	0.29	0.02	[-0.007, 0.03]
Good mental health behaviours	756	0.13	0.58	0.21	[0.09, 0.17]	1184	0.03	0.51	0.03	[-0.0004, 0.06]
Mental health stigma	756	0.10	0.59	0.04	[0.06,0.14]	1184	0.05	0.52	0.03	[0.02, 0.08]
Mental health self-stigma	756	0.05	0.74	0.05	[-0.003, 0.1]	1184	0.03	0.67	0.04	[-0.009, 0.07]
Avoidant coping	756	0.09	0.68	0.05	[0.04, 0.14]	1184	0.03	0.64	0.04	[0.01, 0.06]
Help-seeking behaviours	756	0.12	0.73	0.05	[0.07,0.17]	1184	-0.01	0.64	0.04	[-0.03, 0.05]

Effect size for KAMHS subscales

Illustrating the effect size demonstrates the magnitude of the differences between pre and post-scores. Figure 6.10 illustrates the hedges *g* effect sizes for each subscale of the KAMHS for active and control groups.

Figure 6.10. Effect sizes for each scale of the KAMHS for active and control groups.



Discussion

The discussion of these results is divided into three parts. Firstly, a general overview of the outcomes of MLM is given. Furthermore, consideration of each of the outcomes of the RCT and how they relate to current literature will be given. Finally, the strengths, limitations, and recommendations for future research will be discussed.

Overview of the findings

This cluster RCT aimed to evaluate the Guide Cymru in secondary schools across Wales. This evaluation aimed to determine whether: i) MHL could be improved in pupils aged between 13 and 14 years; and ii) the Guide Cymru could aid in stigma reduction and improve intentions to seek help in a Welsh context. The key findings of the RCT were a significant improvement in mental health knowledge, mental health stigma, and intentions to seek help for the intervention group (Guide Cymru) when compared to the control group (waitlist control). Pupils across each of the KAMHS subscales were equal in the intervention and control group at baseline before taking part in the programme but increased significantly for pupils that took part in the Guide Cymru programme. We demonstrate that providing teachers with appropriate resources and training to deliver the Guide Cymru programme within their classrooms can improve the MHL of pupils.

Chapter 5 presented preliminary evidence for the Guide Cymru in improving MHL in a number of adolescents without a control group. The current study presents evidence for the Guide Cymru's effectiveness in improving MHL among secondary school pupils with a larger number of adolescents in a more sophisticated and controlled design. These outcomes replicate the findings of Milin et al. (2016) in using a modified version of the Guide Curriculum that was bespoke to the context of Wales. Furthermore, these findings also extend upon those of Milin et al. (2016) as the Guide Cymru was administered to a younger age group (13-14 years) compared to Milin's sample of 15–18-year-olds. Research has often identified that half of all lifetime diagnosable mental health disorders begin by 14 years

(Kessler et al., 2005). Adolescence is a key period in the development of long-lasting mental health problems (Smith et al., 2021). Therefore, we demonstrate that the Guide Cymru successfully improves MHL of younger age groups.

These findings are also consistent with previous reports demonstrating positive outcomes of MHL after attending a MHL programme compared to those within a control group (Chisholm et al., 2016; Skre et al., 2013). Research has often identified that educational interventions alone are sufficient to promote MHL in secondary school pupils (Olyani et al., 2021). This study adds to the current literature that well-implemented and high-quality schools based MHL interventions are powerful tools for improving pupils' MHL. A significant limitation of several previous MHL evaluations is a lack of quality psychometric measures of MHL, which are limited to knowledge and attitudes alone to evaluate such programmes (Wei et al., 2013). This study also goes beyond traditional measures of MHL, which cover knowledge and attitudes towards mental health. It evaluates the Guide Cymru effectiveness in improving knowledge, good mental health behaviours, help-seeking efficacy, self-stigma and public stigma and avoidant coping using the KAMHS (Simkiss et al., 2021).

Mental health literacy outcomes

Mental health knowledge

Improvements in mental health knowledge following a brief MHL programme are in line with previous research by Skre et al. (2013). They conducted a non-randomised cluster-controlled trial in Norway and found significant improvements in the mental health knowledge of adolescents following the programme. Adolescents were able to identify symptoms of mental health correctly and knowledge of where to seek appropriate support and help for a mental health problem. In line with this research, the Guide Cymru demonstrates that a 6-module programme delivered over 12 weeks is enough to improve mental health

knowledge. Mental health knowledge includes understanding and being able to accurately identify a mental health problem and understanding a mental disorder and its treatments.

As with health literacy, MHL is the knowledge surrounding a mental health condition, which has been considered an important and fundamental component of health (Jorm, 2000). Moreover, conceptual frameworks identify that health literacy is a critical mediator for health outcomes (Paasche-Orlow & Wolf, 2007). Systematic reviews have often identified beneficial effects of improved health literacy and, ultimately improved health. Research often reveals high rates of unidentified and untreated adolescent mental health (Kataoka et al., 2002). The implication is that early identification of adolescent mental health problems may be an important strategy for improving educational and mental health outcomes.

Research has often addressed how knowledge about mental health disorders may be crucial for early recognition of a mental health problem (Rickwood et al., 2007). Once an individual can accurately identify a mental health problem, this may be the first step to receiving appropriate support (Jorm, 2000). In support of this, research by Olsson and Kennedy (2010) found that individuals who were able to accurately identify a mental health problem had a higher probability of seeking appropriate help and support for that problem when compared to individuals who could not correctly identify a mental health problem. Further, they identified that students who were able to correctly identify a mental health problem were also more willing to recommend getting help to another student who showed signs of a mental health problem.

Furthermore, how an individual presents their symptoms to a doctor has been shown to influence the accuracy of a diagnosis, for example, with depression or anxiety, psychologising rather than normalising their symptoms. Psychologising symptom presentation is a style in which rather than normalising symptoms of a mental health disorder,

explaining the pathological significance of their symptoms (Kessler et al., 2009). If a disorder cannot be recognised, it cannot be treated, and ultimately recognition improves the outcome (Jorm, 2000). During the initial assessment in a primary care consultation, the outcome is often influenced by what the individual chooses to present and how they choose to present it. Individuals' beliefs about their symptoms are powerful influences on their decisions to consult a doctor and how they present their problem when they do attend a consultation. They found that individuals who make psychologising attributions are more likely to receive a psychological diagnosis. A normalising style of attribution has the opposite effect. Minimising their symptoms, the less likely they will receive an accurate diagnosis.

Moreover, gaining knowledge about mental health has often demonstrated increased confidence and talking about your mental health. For example, research by Kim et al. (2021) assessed for reported changes in knowledge and attitudes surrounding mental health following a conference. Participants reported changes in knowledge regarding mental health issues and being able to have a more open attitude to discussing and talking about mental health, and greater acceptance of mental health issues in themselves and others. This research illustrates how learning about mental health can significantly impact self-expression and community building for mental health. Therefore, improving mental health knowledge can be increasingly important for adolescents as this period is critical to developing mental health problems. Accurately recognising and being able to discuss mental health concerns openly can impact the lasting effects of mental health and the prevention and early treatment for adolescents.

Good mental health behaviours

This study demonstrates that the Guide Cymru significantly increased knowledge of good mental health behaviours from pre- to post-for intervention group participants compared to control group participants within the waitlist control group. Good mental health behaviours

entail an understanding of how to optimise and maintain good mental health behaviours. As adolescence is a crucial period for developing emotional and social behaviours that are important for mental well-being, particular knowledge surrounding these is important. The World Health Organisation (2013) outlines how healthy sleep patterns, exercising regular, and a healthy diet are important during this developmental period. Many health interventions have begun to promote the adoption of healthy habits that promote both mental and physical health (Happell et al., 2012).

We demonstrate that by implementing the Guide Cymru, schools can play an integral part in promoting good mental health behaviours. They could provide an important component of strategies developed to treat and prevent lifelong disorders. Research by Rickwood et al. (2004) has highlighted that knowledge surrounding good mental health behaviours changed more than behaviours. It has been well-established that a change in behaviour is more difficult to achieve than improvement of knowledge. Future research may consider this when addressing the long-term impacts of the Guide Cymru.

Mental health stigma

Poor recognition and poor understanding of mental health often lead to misbeliefs and mental health stigmas (Corrigan & Watson, 2002). We demonstrate that through delivering a MHL programme, we are able to reduce mental health stigma. These findings are consistent with the literature demonstrating the influential relationship between mental health knowledge and reducing stigma (Evans-Lacko et al., 2010). Through an educational programme such as the Guide Cymru, the current study provides a promising solution to reducing adolescents' mental health stigmatic attitudes. This finding is line with the research by Milin et al. (2016), who found that pupils that received the Guide Mental Health Curriculum in Canada showed a reduction in stigma compared to pupils that were in the teaching as-usual condition. Research has often attempted to understand mental health

stigma. Dijksterhuis et al. (2000) identified a strong link between memory and stereotyping behaviours. As a result, it has often been argued that an inability to retain or recall information regarding mental health may lead to particular stereotypes being formed.

Further, Högberg et al. (2012) in a cross-sectional study, reported that individuals with good mental health knowledge exhibited an increased level of positive attitudes towards mental health and possessed fewer stigmatic views. Consequently, this further supports the argument that a lack of understanding and knowledge constitutes to increased mental health stigmas (Link & Phelan, 2001). We demonstrate that the Guide Cymru programme improved mental health knowledge and led to positive attitudes being developed. This finding adds to the current understanding of stigma theory (Link & Phelan, 2001) and provides further support and strengthens existing research on the impact of knowledge on stigmatising attitudes, suggesting that mental health stigma develops due to a lack of mental health knowledge (WHO, 2013).

Over recent years, there has been growing evidence of mental health stigma among adolescents (Heary et al., 2017). Stigma is becoming a reality for many adolescents and young people who are currently living with mental health problems (Heary et al., 2017). It is evident that young people with mental health difficulties experience stigmatisation from both other young people and adults (Kaushik, Kostaki & Kyriakopoulos, 2016). Recent research has found that adolescents suffering from mental health problems and concerns often feel shame and embarrassment (Ferrie et al., 2020), and often distance themselves from peers, avoiding talking about their problems and worrying about different the reaction they may receive (Silke et al., 2016). Implementing the Guide Cymru into the classroom demonstrates that it is possible to change stigmatic attitudes by modifying negative beliefs about mental illness and treatment. This research suggests that educational programmes aimed at

improving mental health knowledge could be introduced to educate pupils on mental health diagnoses and treatments and could provide a basis for reducing mental health stigma.

Mental health self-stigma

The findings of the RCT indicate no improvement in self-stigma for pupils who received the Guide Cymru as compared to pupils in the waitlist control group. This finding may be explained through a model of self-stigma (Corrigan & Rao, 2012). The model specifies that individuals with a mental health problem are aware of current public stigmas surrounding their condition (Awareness) and ultimately agree with such stereotypes (Agreement). Consequently, the individual then applies these stigmatic views to themselves (Application). These researchers highlighted that a lack of readiness to change and a lack of mental health treatment knowledge might cause poor adherence to psychological treatment. Therefore, these researchers identify and argue that the process of self-stigma takes place through several stages, which include the absorption of public stigma. Hence, it may be necessary to change public stigma before changes in self-stigma may be apparent. While the Guide Cymru might be able to change public stigma (at least for the children who take the programme) it would be unlikely to be able to show its eventual effects on self-stigma within the time frame of this study. It will therefore be of interest to study possible changes over a longer-time period, and to explore if the Guide Cymru might be adapted with the view to producing changes in self-stigma given self-stigma's importance to the mental health of the individual (see Chapter 4).

Furthermore, internalised stigma has often been linked to many negative outcomes such as low self-esteem, low self-efficacy (Budiarto and Helmi, 2021) and social avoidance (Orth, Robins, & Roberts, 2008). In addition, it has also been thought that emotional reactions are an important component embedded within self-stigma, as people who agree with the negative stereotypes often develop strong negative reactions (Corrigan & Rao,

2012). Therefore, such outcomes may result in a longer process to improve symptoms of self-stigma in individuals. As a result, research into improving mental health self-stigma has focused their efforts on reducing these particular symptoms resulting from self-stigma. For example, through empowering individuals and encouraging them to believe they can achieve their life goals (Lean et al., 2019). This seems to be an effective way of improving self-esteem and self-efficacy, and investigations have shown empowerment to be associated with better quality of life (Crisp et al., 2014, Tjaden et al., 2021). Future research may therefore consider this approach alongside implementing the Guide Cymru.

Avoidant coping

Implementing the Guide Cymru into secondary schools across Wales also significantly improved avoidant coping among pupils compared to waitlist control pupils. Avoidant coping techniques involve cognitive and behavioural efforts towards minimising or directly avoiding a stressful demand, which has been strongly linked to distress and depression among adolescents (Chan, 1995; Cronkite & Moos, 1995). For example, adolescents with a high level of depressive symptoms reported employing avoidant coping more frequently than adolescents with a low level of depressive symptoms (Chan, 1995). The relationships between MHL and coping strategies have not been well researched in the literature, however, these findings support the research by (Carvalho & Dias, 2021), who examined the relationship between MHL and the use of different coping strategies amongst adolescents. They found that adolescents with higher levels of MHL reported less use of Denial and Behavioural Disengagement as coping strategies.

One particularly important aspect of the Guide Cymru programme is that within Module 6, *The Importance of Positive Mental Health*, the Guide Cymru distinguishes between what stress is, the stress response, and how to develop resilience. Pupils are taught different ways to cope with stress in order to develop resilience. The way in which

individuals cope with stress and adversity is fundamental. We demonstrate that the Guide Cymru programme encouraged and improved avoidant coping behaviours, allowing pupils to deal with life stressors head-on and not avoid and ignore various aspects. Stress is a pervasive feature of human development, particularly during the period of adolescence (Compas et al., 1993). A feature of human development involves the ability to cope with psychosocial stress. Throughout life, individuals are continuously confronted with streams of threatening and challenging situations that ultimately require adaptation (Compas, 1987).

Help-seeking behaviours

Implementing the Guide Cymru into secondary schools across Wales also demonstrated a significant improvement in intentions to seek help in the intervention groups compared to a waitlist control (control groups). It is important to also note that these findings are also in line with that of self-stigma as previously discussed. This research further supports Rüsch et al. (2011). They developed an extensive representative survey of adults and found that better mental health knowledge and available treatments predicted stronger intentions to seek help and disclose a mental health problem to a friend or family member. In line with this, Evans-Lacko et al. (2010) found that knowledge of mental health problems and appropriate treatments was the strongest predictor of intentions to seek help. Therefore, this research highlights the importance of MHL in improving pupils' intentions to seek appropriate help and support for a mental health problem.

Interestingly, many mental health interventions often do not include a measure of intentions to seek help (Rickwood et al., 2007). Of the available research, it is acknowledged that poor knowledge reduces help-seeking because individuals who do not recognise symptoms of mental health problems are unaware of available treatments (Jorm et al., 2003). In line with this, the present study supports other research studies that have demonstrated increased MHL levels, resulting in improved attitudes and intentions toward help-seeking

(Hart et al., 2018). However, other research has found that higher MHL levels did not necessarily enhance intentions and attitudes towards help-seeking (Rickwood et al., 2004). Further to this, a systematic review conducted on the effectiveness of school MHL programmes in reducing stigma and improving help-seeking among youth (12 to 25 years of age) concluded that the majority of these studies developed their questionnaires and vignettes to evaluate the outcomes rather than using validated measures. This research goes beyond previous literature through incorporating the use of the KAMHS (Simkiss et al., 2021).

Knowledge deficits in a range of practical areas have also been identified as barriers to help-seeking: for example, being unsure how or where to access help (Sheffield et al., 2004). The current study findings support a theory of help-seeking by Rickwood et al. (2005), who proposed four stages to encourage and improve intentions to seek help. Rickwood et al. identified many barriers to help-seeking for a mental health problem. However, the most prominent one was a MHL deficit. They proposed that an individual's intentions to seek help begins with the awareness that they have a problem. However, a lack of knowledge about the symptoms may propose an initial barrier at this stage. Following this, availability and awareness of support and resources is important. If an individual is not aware of the availability of support to them, they are unable to progress in any intentions to seek help. The final stage is willingness to access resources, which is highly reliant upon beliefs about the appropriate support available to them. Furthermore, it also relies upon stigmatic beliefs and feelings of shame rather than a unidimensional issue (Clement et al., 2015). The Guide Cymru provides promising support for this theory of help-seeking as it informs that knowledge about sources of support locally for both pupils and teachers so that they can support the pupils and reduce stigma (earlier section). Thus, the Guide Cymru systematically addresses each part of the model of Rickwood et al.

Therefore, the current study demonstrates that improvement in MHL through the implementation of the Guide Cymru can improve intentions to seek help. Future research may consider measuring mental health help-seeking behaviours instead of self-report intentions to see whether the Guide Cymru is capable of behavioural change in this age group (Schomerus & Angermeyer, 2008).

Strengths and Limitations

This study has numerous strengths, which ultimately contribute to the reliability of the findings. As such, this study had adequate statistical power provided by a large sample size. Further to this, a study protocol was published prior to data analysis to ensure transparency of the study. A cluster RCT was selected as the study design and was conducted following a rigorous study design with control and intervention groups to reduce bias. This research design is widely recognised as it provides the best evidence for the effectiveness of intervention programmes embedded within a school environment (Mytton et al., 2006). Furthermore, pupils across each of the KAMHS subscales were equal in the intervention and control group at baseline, prior to taking part in the programme. Imbalances between groups at baseline can often lead to systematic biases which can ultimately limit study validity (Linden & Adams, 2011).

A further strength of the current study was the use of the KAMHS measurement tool. The KAMHS measure was specifically designed to capture the potential impact of the Guide Cymru and was developed with good psychometrics, and it was able to demonstrate this (see Chapter 3). As this research is highly reliant upon self-report, the KAMHS includes a measure of social desirability to identify pupils who show high levels of positive impression management. In addition, MLM was chosen for the analysis due to the nested nature of the data (pupils nested within schools and particular time points- pre- and post-intervention). MLM has the advantage of taking into account the dependency among the observations from

the same individual as well as the similarity between pupils who share the same environment, for example, school setting and the same teacher delivering the intervention (Kahn, 2011).

The Guide Cymru was designed to be appropriate for teachers to deliver the programme within their classrooms under required time constraints. This enabled the Guide Cymru to be sustainable and easily embedded within existing school curriculums rather than requiring external resources and time (Kutcher et al., 2018). It has been argued that school teachers must be prepared with appropriate knowledge, skills, and understanding of mental health problems to recognise and support as appropriate (Rothi, Leavey & Best, 2008). The approach we took provides teachers with the appropriate training on the use of the Guide Cymru, allowing teachers to apply these resources within their classrooms using their professional skills. This approach mirrors the way in which educators prepare for teaching in a normal classroom environment. Therefore, as a result, this process is highly familiar for teachers in classroom activities and delivery.

Several schools have highlighted that they will be continuing to embed the programme within their school curriculum going forward. The importance of embedding MHL programmes into an existing school curriculum enables the uptake and use of a sustainable programme that will continue to be used following the end of the evaluation process (Wei et al., 2011). The Guide Cymru incorporates this approach, and we report that this approach positively impacted the MHL of pupils in Wales.

Despite the positive outcomes in improving pupils' MHL, this study is not without limitations. Follow-up of the Guide Cymru impact was only taken immediately after completion of the programme, which is not sufficient in monitoring how the outcomes were sustained or developed over time. The short-term nature of the study and lack of follow-up limits our understanding of the long-term impact of the Guide Cymru in sustaining such

positive outcomes. Therefore, future research should replicate and extend our findings with longitudinal designs.

We were only able to take measurements immediately post-intervention and therefore were not able to follow-up pupils to see whether these effects changed over time or generalised to a change in help-seeking behaviour. According to integrated behaviour change models (Hagger & Chatzisarantis, 2014), an increase in knowledge and intentions to complete a behaviour could predict an increase in behavioural change. Therefore, future research may consider measuring behavioural change instead of intentions to seek mental health support as discussed earlier.

It is essential also to note that the response rate from secondary schools was low at (26.83%). All secondary schools across Wales were invited to participate in the research, and several schools expressed interest. However, given the time restraints of the RCT and the inability to release staff for training, a significant number of schools were unable to adhere to this. Moreover, due to COVID-19 and school closures, the research was limited in accessing schools across Wales, leading to the omission of schools in mid-Wales.

Due to anonymity and ethical implications, demographic information of pupils was limited to that of gender, age and school. Future research may consider collecting ethnicity and socioeconomic status. Research has often identified that ethnic minority students are less likely to use mental health services and seek help (Kim et al., 2015), and mental health stigma is often higher among ethnic minority groups (Eylem et al., 2020; Misra et al., 2021). Further, research may also consider obtaining an evaluation of the programme from teachers on the practicality and use of the Guide Cymru. Qualitative feedback from pupils who received the Guide Cymru may also be a beneficial addition to future research.

Chapter summary

This chapter presents a detailed description of the methods and results of a cluster RCT that investigated the effectiveness of the Guide Cymru in Wales. This study examines the considerations of using an RCT in an educational setting across Wales and outline the RCT design, including key characteristics of the sample. Using Multi-level modelling (MLM), this study demonstrates how good mental health behaviours, intentions to seek help, and avoidant coping improved significantly for pupils having received the Guide Cymru compared to pupils in the control condition. Furthermore, this study demonstrates no significant differences in a lack of self-stigma in pupils who received the Guide Cymru and controls. These findings indicate that the Guide Cymru is highly effective at improving knowledge about mental health, increasing intentions to seek help, and reducing avoidant coping in young people in Wales. The next chapter will consider a general conclusion of the thesis, recommendations for future directions, and policy implications on the outcomes of the RCT.

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Chapter 7: General discussion chapter

Chapter introduction

This final chapter will discuss and provide a general overview of the key findings of the research presented in this thesis, a discussion regarding their broader implications, and recommendations for future research. Strengths and limitations and future research recommendations will then be explored. Finally, findings will be discussed regarding their wider implications and concluding thoughts.

Aims of the thesis

This thesis aimed to contribute to the expanding field of Mental Health Literacy (MHL) among adolescents and young people. This thesis includes the development of a new measure of MHL, known as the Knowledge and Attitudes to Mental Health Scale (KAMHS) (Simkiss et al., 2021), which presents good psychometric properties within an adolescent sample. Associations between mental health and MHL constructs were made to assess the importance of MHL as more than just mental health knowledge, extending to the broader construct of help-seeking efficacy, stigma, and coping mechanisms. Furthermore, a cluster randomised control trial (RCT) was used to evaluate a MHL programme (The Guide Cymru) within secondary schools across Wales. We, therefore, contribute to the field of MHL by demonstrating that providing teachers with appropriate resources and training to deliver the Guide Cymru can significantly improve the MHL of pupils.

Main findings and overview of the thesis

Chapter 1: General Introduction

Adolescent and young people's mental health problems are increasingly prevalent within the United Kingdom (UK) (Deighton et al., 2021). However, it is often demonstrated that young people's attitudes toward seeking help and knowledge surrounding mental health are critical barriers to seeking appropriate help (Schomerus et al., 2019).

Chapter 2: Mental health stigma

Through a review of the conceptualisation of stigma, stigma theory and mental health stigma amongst adolescents**,** we understand the role of knowledge in reducing stigma. It has often been proposed that a lack of mental health knowledge can lead to negative stereotypes of mental illness (Corrigan et al., 2000). Furthermore, it has been thought that having an inaccurate knowledge and understanding of mental health disorders could be a critical barrier to seeking support and guidance from close family and friends due to the fear of triggering negative perceptions of mental illness (Read et al., 2006).

The World Health Organisation (2013) explicitly states that negative attitudes are generated due to a lack of subject knowledge. However, research also demonstrates that the type of knowledge of mental health is equally as important. Research often indicates that young adolescents can distinguish between medical and psychological disorders (Roberts et al., 1981), along with a mixed ability to accurately label a mental health disorder (Burns & Rapee, 2006; Wright & Jorm, 2009). However, this is limited as there is a clear difference between accurately identifying a disorder and having accurate knowledge and understanding of a mental health disorder. For example, knowledge of how to identify symptoms and appropriate treatments, how to seek help and demonstrate good mental health behaviours is more beneficial for young people.

Chapter 3: Development of the Knowledge and Attitudes to Mental Health Scale (KAMHS) (Simkiss et al., 2021).

Improving adolescents' knowledge about mental health is crucial for reducing stigma and improving attitudes toward mental health (Watson et al., 2004). This led to a review of the literature on current measures of MHL, identifying that while there are several measures of MHL, there are reasons for developing a new measure. For example, the lack of reported psychometric properties. Several MHL reviews have been conducted (O'Connor et al., 2014; Wei et al., 2013), which have evidenced a lack of reporting of psychometric properties.

Further to this was a lack of clarity within the field of a clear definition of MHL, leading to the development of the KAMHS**,** demonstrating good internal constancy and moderate test-retest validity (.40–.64).

Since the publication of the KAMHS (Simkiss et al., 2021), there has been a growing interest in the use of the scale. We have had requests from 9 research groups wishing to utilise the KAMHS within their research. These researchers are based in Germany, United States of America, Netherlands, Australia and Iran. This demonstrates a strong need for a measure of MHL among young people within the literature.

Chapter 4: Relationship between Mental Health Knowledge and Mental Health

Health literacy is often considered a strong determinant of health (Pelikan et al., 2018). Furthermore, research has repeatedly demonstrated that health literacy is one of the strongest predictors of quality of life (DeWalt & Hink, 2009). While the importance of health literacy is well acknowledged, MHL has been comparatively neglected (Jorm, 2000). Moreover, higher scores on measures of MHL have been associated with more effective help-seeking behaviours and maintaining a better mental health status (Wright et al., 2007). We, therefore, considered the relationships between various factors of MHL, such as the relationship between help-seeking behaviours and mental health. We propose the importance of MHL as more than mental health knowledge which is extended to include the broader construct of help-seeking efficacy, stigma, and coping mechanisms. The findings indicate that good MHL can benefit adolescents' mental health and quality of life**.** As adolescents often avoid appropriate treatment for mental health problems and seek help as a last resort (Yap et al., 2011), these findings highlight the importance of how mental health services and early interventions should help young people improve their MHL.

Chapter 5: Pre and Post study design

Since the COVID-19 pandemic in March 2020, we have learnt that mental health and well-being are essential for everyone (Kumar & Nayar, 2021) and must therefore be at the forefront of education. The classroom environment has been identified as the optimal context for educating young people about mental health (Conley & Durlak, 2017). This context also allows for the promotion of resilience and early intervention for young people and adolescents (Allen & McKenzie, 2015). There is a strong desire from youth to learn about mental health and a shared view that teaching health within schools should include both physical and mental health education (Kostenius et al., 2020). Education surrounding mental health can help to minimise stigmas and increase confidence in taking appropriate action among young people and adolescents (Kostenius et al., 2020).

In 2018, Action for Children (AFC) received funds from the Welsh Government to deliver a MHL programme (The Guide Cymru). Swansea University was commissioned by AFC to conduct the evaluation, with the research presented within the thesis forming the basis of this. Through conducting a pre- and post-research study, we present preliminary evidence for the Guide Cymru's effectiveness in improving MHL among secondary school pupils within the classroom environment. However, this research is limited due to the lack of a RCT design and, hence, in our ability to conclude that the improvements in knowledge and attitudes directly resulted from the Guide Cymru. The pre-post design was set up as a pilot study before the outcome of the RCT, presented in Chapter 6, as it could be completed much more quickly and easily than the RCT.

Chapter 6: A Randomised Controlled Trial evaluating the Guide Cymru Mental Health Literacy intervention programme in Year 9 (age 13-14) school pupils in Wales.

Through a cluster RCT, an evaluation of a MHL programme (The Guide Cymru) took place. It was evaluated using a newly developed measure of MHL using the final Version 3 (The KAMHS) (Simkiss et al., 2021). The findings demonstrated a significant improvement

in mental health knowledge, mental health stigma and intentions to seek help for the intervention group (the Guide Cymru) compared to the control group (waitlist control). We demonstrate the potential of schools to represent an important area for promoting adolescent mental health. Furthermore, we demonstrate that school-based educational interventions can be a powerful tool to improve MHL in adolescents and young people.

The Guide Cymru strengths

Public Health approach

There are two approaches to intervention and education about mental health. First, some interventions specifically target children and young people with specific risk factors or existing mental health problems. The second are interventions that target everybody by educating the general child and adolescent population (O'Connor, Dyson, Cowdell, Watson, 2018). The Guide Cymru aimed to improve the MHL of all Year 9 pupils. A strength of the Guide Cymru was the public health approach to MHL that was taken. Most mental health problems manifest in early life as one in five children worldwide experiences a mental health problem (Kieling et al., 2011) and most individuals will at some point have close contact with someone developing a mental disorder (Yap et al., 2011). Furthermore, it is important to acknowledge that young people strongly prefer obtaining help from their family and friends (Wright et al., 2005). Given this view, a public health approach to MHL aims to educate *all* children and young people (O'Connor et al., 2018).

Over the years, there has been increasing evidence to support the public health approach, otherwise known as the universal approach within schools to support the mental health and well-being of children and young people (Wells et al., 2003). A public health approach aims to deliver a programme so that it can be easily embedded within a school curriculum. Implementing MHL into school curriculums will encourage conversation among pupils and also help reduce stigmas surrounding mental health (Fadus & Harrison, 2019). Without appropriate mental health education and awareness, children and young people may

misinterpret symptoms, develop stigmas surrounding mental health and fail to seek appropriate help and support if needed later in life (Fadus & Harrison, 2019). Further, a limitation of the targeted approach is being unable to identify individuals with mental health problems accurately. Not all individuals with mental health problems self-identify due to the stigma that is attached to mental health problems (Stolzenburg et al., 2019). Through the evaluation of the Guide Cymru, we demonstrate the schools' potential to positively promote adolescent mental health.

Good mental health approach

A further strength of the Guide Cymru is the consideration of the importance of good mental health as not the absence of a mental disorder but symptoms of positive feelings and functioning in life (Keyes, 2002). Mental health promotion, as opposed to mental illness prevention, has been shown to promote adolescent and young people's mental health (O'Mara & Lind, 2013). The key aims of the Guide Cymru are to aid students and their teachers in improving their Mental Health knowledge, reduce stigma, and increase help-seeking behaviours.

A further strength to note is that, to date, most mental health education programmes have only assessed knowledge and attitudes towards mental health. MHL, however, is an evolving concept, and our conceptualisation of MHL throughout this thesis is currently in line with the World Health Organisations' definition of mental health. The WHO definition states that mental health is more than the absence of a mental health disorder and includes well-being, functioning and coping behaviours (World Health Organisation, 2013).

Younger age group

Previous research using the Guide Mental Health Curriculum (Milin et al., 2014) demonstrated the effectiveness of the Guide Curriculum in improving MHL and reducing stigma towards mental health among pupils in Grade 11 and 12 (aged 16 to18 years). Given

that adolescence is an important time period for positive focuses on mental health as discussed in Chapter 2. The Guide Cymru was targeted at a younger group of pupils aged between 13 and 14 (Year 9). We demonstrate that the Guide Cymru is appropriate for improving MHL of pupils aged 13 and 14 years. This is a key strength within the research as given that most mental health problems manifest in early life, as 50% of mental health problems are evident by the age of 14 years (Kessler et al., 2005) targeting the programme at a younger age holds an important role in facilitating early identification and intervention for mental disorders.

Translation into the Welsh Language

A further key strength is that in line with the Welsh Language Act (1993) all materials for the Guide Cymru were translated and made available in the Welsh language for schools to deliver. A Welsh translator was also made available during the Guide Cymru training sessions for schools that requested the Guide training to be delivered in Welsh.

Collaborative project working across academia and the third sector

The collaboration between Swansea University, Cardiff University, and Action for Children greatly benefited the project. This allowed an opportunity to work in a collaborative team and pool knowledge, skills and expertise in mental health and young people. Insight from the Child and Adolescent Mental Health Service Advisor to the Welsh Government and the Senior Policy Advisor of the National Association of Head Teachers helped contribute to many valuable discussions that also helped shape the project.

Feedback from a service user

Involving a service user (14-year-old pupil) in the development of the Guide Cymru is a further strength as it increases the likelihood of meaningful improvements and that the project would be responsive to pupils' needs (Sampson et al., 2022). This is a fundamental approach that recognises the expertise of a service user and gains valuable insights into it. We

were able to identify particular strengths and make appropriate adaptations to the Guide Cymru.

Limitations and future research

Lack of long-term follow-up

Several limitations should be considered within this thesis, for example, the lack of follow-up data within the third wave of follow-up data 3 obtained for the Guide Cymru evaluation. The follow-up data had been scheduled to be completed 12 to 14 weeks following the delivery of the Guide Cymru to schools. However, due to the COVID-19 pandemic and as a result of the school closures, it wasn't possible to receive the follow-up data. Future research may consider investigating the long-term effect of the Guide Cymru.

School drop-out rate

Moreover, there were several reasons for school drop-out. In particular, the practicality of delivering the programme within 12 weeks was a common problem identified by schools as the programme was aimed to be embedded within the PSHE (Personal, Social, Health and Education) classes. PSHE classes within schools ranged from being delivered for one hour weekly to fortnightly, resulting in time restraints on the ability to deliver the Guide Cymru programme within the given time frame for the evaluation. The Guide Cymru involves six modules designed to be taught consecutively over a period of 8 to 12 hours. Given this, future research may consider a longer time period to ensure schools have sufficient time to deliver the programme within their curriculums.

A further practical problem identified was the inability of some schools to release staff for the training of the Guide Cymru. The training was delivered over two days to up to three staff members from each school. The designated teachers receiving the Guide Cymru training were advised that teachers that attend the training would then be required to deliver the Guide Cymru to the pupils. Future evaluations may consider online resources that can be made available for schools to access at a practical time to reduce the inability to release staff

for training days. Currently, the Guide Cymru is being adapted for online delivery for schools to reduce barriers to access to the training.

Moreover, school closures during the COVID-19 pandemic also resulted in a response rate of 26.83%. Whilst a substantial sample size (*N*=1,926) was obtained, a further limitation of the evaluation was unmatched data, as 484 pre-measures and 771 post-measures were unmatched (24.42%). Unmatched questionnaires were due to missing information provided in the four code answers, incorrect responses to the coding questions, and absences in school on the day of data collection. Future research may consider non-anonymised approaches to matching participant data across the three waves of data collection. However, research has often identified that disclosure of sensitive information on self-administered questionnaires is enhanced when the data obtained is anonymous as opposed to confidential (Harenberg et al., 2022). Therefore, this implies that the optimal method for accurately obtaining information regarding attitudes and help-seeking behaviours towards a sensitive topic such as mental health would be anonymous.

Lack of feedback

Informal positive feedback was received from schools following participation in the evaluation research; however, it would be beneficial to have obtained formal qualitative feedback upon both the Guide Cymru and completion of evaluation measures (KAMHS). This would have been beneficial for our understanding of how well the programme was embedded within the school's curriculum and identification of any practicality problems that could be improved for future evaluations. Further to this, evaluation should be embedded to understand better how well the programme was implemented within each school.

Feedback on the programme delivery adds potential depth to what is known and could provide beneficial information regarding future adaptations to the programme. Identifying what both pupils' and teachers' thoughts were on receiving the Guide Cymru programme

could add potential for improvement to the programme. Focus groups have often been seen as a successful method of gathering qualitative feedback from young people and adolescents (Heary & Hennessy, 2002). Focus groups are also influential in researching sensitive issues such as mental health among children and young people (Wong, 2008). Therefore, this approach would be beneficial for obtaining qualitative feedback on an MHL programme.

Lack of data on ethnicity

Age, gender and school were obtained from pupils within the demographic information. Due to the anonymity of participant data collected throughout this thesis, we could not collect data on the ethnicity of the pupils participating in the research. Future research may also consider other relationships between demographic variables such as ethnicity and MHL. Research has often found that ethnic minority students are even less likely to seek psychological help for mental health difficulties (Memon et al., 2016; Suresh & Bhui, 2006). One of the reasons could be a lack of culturally sensitive services (Masuda et al., 2009).

Moreover, amongst older pupils, research has often found that ethnically diverse college students with higher levels of mental health self-stigma are less likely to seek appropriate support and help (Nam et al., 2013). Recent research by Mumbauer-Pisano and Barden (2020) demonstrate how the Mental Health Curriculum Guide (Kutcher et al., 2013) can significantly influence mental health knowledge, stigma and help-seeking attitudes amongst ethnic minority youths. 60 adolescents, aged between 11 and 17 years in the United States took part in the research, of which the majority of participants identified as Black African/American (75%) and Asian/Pacific. The significant improvements were all sustained one month after.

Reported help-seeking behaviours

Research has often identified that individuals with high levels of MHL engage in appropriate help-seeking behaviours more so than individuals with lower reported MHL

(Ratnayake & Hyde, 2019). We demonstrate increased intentions to seek help following the completion of the Guide Cymru; future research may also consider measures of reported help-seeking behaviours following the completion of the Guide Cymru. One of the key barriers to seeking appropriate help and support for a mental health problem is a lack of knowledge and stigma (Rickwood et al., 2007). Regarding help-seeking outcomes, interventions with literacy or mental health stigma reduction strategies have led to significant short-term improvements (Xu et al., 2018). Moreover, the teen Mental Health First Aid programme was delivered to pupils aged 15 to 16 years in Australia and found that pupils reported increased improvements in their confidence in their ability to support a peer with a mental health problem were found over time (Hart et al., 2018). Measures of reported help-seeking behaviours could provide helpful information for the Guide Cymru programme's effectiveness in encouraging children and young people to seek the appropriate help and support they need.

Furthermore, help-seeking behaviours should be measured concerning both formal and informal sources, as adolescents and young people are more likely to initially seek support from family and friends (Divin et al., 2018). This, however, would not have been possible within the research presented within this thesis, given the timeframe of the current research.

Other developments in the field

Over recent years, the development of MHL programmes has increased. This growth and interest indicate the significant importance of the subject to health policymakers and the general public. MHL is becoming an essential strategy for mental health promotion, empowering schools to take better action to tackle mental health (Morgado et al., 2021). Recently, the impact of the COVID-19 pandemic on mental health has become a global concern (Pierce et al., 2020). Research has illustrated lower levels of mental well-being during the COVID-19 pandemic compared to previous years (Gray et al., 2020), with

evidence of recent increases in the prevalence of mental health problems in children and young people (Newlove-Delgado et al., 2021). Young people have often expressed concern about their mental health before COVID-19, and these concerns have escalated in response to the pandemic. A lack of knowledge, stigma, and unfamiliarity with how to seek help contribute to low self-efficacy in mental health care. There is, therefore, a strong need for school contexts to include mental health education.

Since the COVID-19 pandemic, preventative interventions have increased globally, and one particularly interesting approach is digital MHL interventions. It is known that digital interventions often represent effective tools for engaging audiences (Ito-Jaeger et al., 2021). Moreover, digital interventions are easily accessible and cost-effective (Tennant et al., 2020). As a result, digital programmes have become a popular approach to improving the MHL of children and young people (Yamaguchi et al., 2020). One particular example is by Aller et al. (2022), using a non-randomised, quasi-experimental design to examine MHL outcomes of the Mental Health Awareness and Advocacy (MHAA) course delivered both online compared to in-person. They found that the MHAA effectively improved students' online and in-person knowledge, supporting the efficacy of delivering MHL courses online. However, this research is limited as the authors note a significant limitation of this research was the high treatment condition scores at baseline, for many of the outcome variables, the treatment condition often started with high scores to begin with prior to completing the intervention.

Moreover, Tuijnman et al. (2022) recently developed a game-based school program, otherwise known as Moving Stories, which combines MHL with contact with someone with lived experience, both in the digital and non-digital world. Through an RCT, they aimed to evaluate the effectiveness of the newly developed game-based programme. They found that participation in the game reduced personal stigma as compared to the control condition. However, improvements of such were not present at three months, suggesting that

implementation of a programme needs to have repeated exposure to ensure long-term benefits. A programme, therefore, needs to be embedded within a school curriculum to ensure repeated exposure in the hope of longer-lasting effects. Further, it is important to note that no differences were found in symptom recognition or knowledge of MHL. It is possible that the experiences in the video game did not sufficiently lead to improved knowledge. A significant strength of the research is that unlike many other MHL programmes, they were able to test the effects over a period of time (follow-up of 6 months). The authors note a key limitation within their research: the relatively low reliability of some of the outcome measures (i.e., beliefs about help and personal stigma). The use of the KAMHS (Simkiss et al., 2021), may address this particular limitation in future research.

The literature demonstrates that the public's MHL levels are increasing (Tay et al., 2018), yet still remain low as the public has minimal understanding of mental disorders, leading to poor recognition and a significant delay in treatment (Tay et al., 2018). Early adolescence is a key period when risk and protective factors can significantly impact the trajectory of children's mental health. Early identification and intervention for mental disorders are beneficial (Giles-Kaye et al., 2022). Research acknowledges the importance of introducing programmes applicable to a younger cohort. Ojio et al. (2015) examined the effectiveness of a teacher-led programme for MHL in pupils aged 10-12 years. The programme consisted of a 45-minute session and film identifying mental health problems and seeking help. Following a pre-post design, participants completed a self-report questionnaire before, after the programme and three months post-intervention. They found significant improvements to knowledge and intentions to seek help at three months post-intervention, demonstrating that short programmes on MHL can have lasting effects on pre-adolescent pupils. A limitation to the research was a lack of control group as a comparison and the self-report questionnaire had not been tested prior to the research.

Further to this, there still however, remains considerable variability and lack of homogeneity regarding the concept of MHL and the measurement tools used to evaluate given interventions (Mansfield et al., 2020). Moreover, there is a constant tendency to focus solely on one's ability to accurately identify a mental health disorder as a measure of MHL instead of understanding the disorder and how to seek appropriate help. Through the implementation of the Guide Cymru with a key focus on improving mental health knowledge and understanding of good mental health behaviours, this approach to MHL considers the disorders from a more positive perspective (Amado-Rodríguez et al., 2022). Future research should therefore consider taking a positive approach improving MHL.

Implications

Child and adolescent mental health is paramount, considering that half of all mental illnesses begin before age 14, and research into young people's mental health is underfunded (Dubicka & Bullock, 2017). This study was the first RCT evaluation of the Guide Cymru. There has been other research using the Guide (Kutcher, 2015) internationally (Milin et al., 2014, Kutcher et al., 2013), however, we demonstrate the effectiveness of the Guide Cymru on a younger age group (13 to 14 years). In addition to this, the programme was adapted for a UK audience and a more valid outcome measure, the KAMHS (Simkiss et al., 2021) was used to evaluate the Guide Cymru. The evaluation of the Guide Cymru used a gold standard RCT, providing evidence that delivery of the Guide Cymru as compared to the control condition (teaching as normal), significantly improved mental health knowledge, knowledge of good mental health behaviours and public stigma. These findings, therefore, support that the Guide Cymru should be considered appropriate for delivery in secondary schools. The results may help pupils maintain their own mental health and encourage discussion of mental health amongst their peers. These encouraging findings provide evidence for the continued need for education providers to focus on promoting MHL.

Along with the Welsh Government's Mental Health and Wellbeing Strategy for Wales 'Together for Mental Health' (Welsh Government, 2019), this research strongly aligns with the current aims of promoting mental well-being and preventing mental health problems. Furthermore, the priority areas for action outlined by the Welsh Government are to improve the mental health and well-being of the Welsh population and reduce inequalities, mainly by focusing on strengthening protective factors. Through an evidence-based evaluation of the Guide Cymru, we demonstrate the potential of secondary schools across Wales to improve pupils' MHL and reduce mental health stigma.

Overall conclusions

Overall, this research makes several significant contributions to the literature by addressing several methodological shortcomings related to the current literature on MHL. The recent study extends upon previous research in the field of adolescent MHL through the development of a cluster RCT to evaluate the Guide Cymru. Secondly, the development of a reliable measure of MHL. The findings throughout this thesis, therefore, provide exciting opportunities for future research in support of child and adolescent mental health.

With sufficient time and resources, I would conduct an evaluation of the Guide Cymru within a younger cohort of age 11 years. We demonstrate that the Guide Cymru is appropriate for delivery to pupils aged 13 to 14 years, a critical time period for developing mental health problems. I would like to evaluate the programme at a younger age group such as 11 years as this is typically prior to developing mental health problems, whether we can aid pupils with the appropriate knowledge and resources prior to developing mental health problems.

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APPENDIX A
Knowledge and Attitudes towards Mental Health Scale (KAMHS)

Version 1

Understanding how to optimise and maintain good mental health

1. Spending time interacting with friends and family helps your mental health. (6) T
2. Drinking alcohol does not help when you are stressed (9) T
3. It's often best to ignore problems and hope they go away (15) F
4. It is best not to tell anyone if you feel you have a problem (26) F
5. Sometimes taking illegal drugs can actually help when you are stressed by something. (28) F
6. A good night's sleep helps your mental health. (33) T
7. The same things that help our physical health also help our mental health. (35) T
8. Playing sport is bad for your mental health. (40) F
9. Sometimes things that stress you should be faced head-on (43) T
10. Healthy eating helps you maintain good mental health (51) T
11. Talking to someone can help if you are distressed. (53) T
12. Physical exercise has no effect on your mental health (68) F

Stigma/attitudes

1. People with a mental disorder are dirty. (5) F
2. I would feel scared if I was around someone with a mental disorder. (8) F
3. If a person with a mental disorder came to my school, I would try to be friends with them. (11) T
4. People with a mental disorder will not be able to play certain sports such as football. (18) F
5. Having a mental disorder is something to be ashamed of. (27) F
6. People with a mental disorder aren't really ill and should just get on with things. (34) F
7. Receiving help for a mental disorder is a sign of weakness. (36) F
8. I would still be friends with my best friend if they had a mental disorder. (41) T
9. People with mental disorders are dangerous. (44) F
10. Mental disorder cannot happen to me. (48) F
11. Mental disorders are caused by people being wicked or bad. (54) F
12. I believe someone with a mental disorder should be blamed for their problem. (60) F
13. An individual with a mental disorder should not be allowed to join in classroom activities (63) F
14. I would feel comfortable sitting next to a person with a mental disorder. (70) T

Understanding mental disorders and their treatments

1. Anorexia only affects women (1) F
2. Lack of pleasure, hopelessness and feeling tired can all be symptoms of a Depression. (2) T
3. Symptoms of Panic Disorder include moving quickly and feeling that people are staring at you. (3) F
4. Emotions are controlled by your heart. (7) F
5. An Anxiety Disorder happens when a person's brain detects the presence of danger – such as a dog barking. (10) F
6. Medicines should never be used to treat a mental disorder. (13) F
7. Most mental disorders start before the age of 18 (16) T
8. People with Schizophrenia have a split personality. (19) F
9. Hallucinations are where people hear or see things that aren't really there. (20) T
10. People who wash their hands have Obsessive-Compulsive disorder (OCD). (23) F
11. Symptoms of Panic Disorder include the heart beating fast, sweating, and feeling dizzy. (25) T
12. Severe and repeated stress can affect the brain. (29) T
13. The most common mental disorders in teenage girls are eating disorders. (30) F
14. Depression is not a true mental disorder (31) F
15. If you are worried about something then you probably have Generalised Anxiety Disorder. (32) F
16. People with Bipolar Disorder have trouble making their minds up. (38) F
17. Anorexia Nervosa is an eating disorder that can lead to death. (39) T
18. People with Bipolar Disorder have periods of clinical Depression and periods of Mania. (45) T
19. Vitamins and yoga are effective treatments for most mental disorders. (47) F
20. Attention Deficits Hyperactivity Disorder (ADHD) is caused by watching too much TV or eating too much sugar. (49) F
21. A delusion is seeing something that is not real.(50) F
22. Everybody feels stressed some of the time. (55) T
23. People on a diet probably have Anorexia Nervosa.(56) F
24. Getting people to talk about a traumatic event immediately after the event helps prevent PTSD. (58) F
25. Three symptoms of clinical Depression are feeling sad, eating a lot, and hearing voices. (61) F
26. Obsessions are thoughts that occur often that the person wants to get rid of but can't. (62) T
27. Schizophrenia can be treated with medication and psychological therapy. (66) T
28. Depression is usually caused by an event such as falling out with your friends or with your family. (71) F

Help seeking behaviours

1. For me, it would be easy to ask for help for a mental health problem. (17) T
2. I wouldn't tell anyone if I had a mental health problem in case they made fun of me. (21) F
3. If I have a mental health problem, I know I will ask for help. (42) T
4. Asking for help with a mental health problem will probably make it worse (52) F
5. I am confident that I could ask for help if I had a mental health problem. (59) T
6. If one of my close friends needed help with a mental health problem, I would encourage them to seek help. (64) T
7. If one of my family members had a mental health problem, I would encourage them to seek help. (67) T
8. If I had a mental health problem would try to hide it from everyone. (72) F

Social Desirability

1. I always eat a healthy diet (4) F
2. I sometimes gossip about others (12) T
3. I am always patient when waiting in a queue (14) F
4. I always do what my parent ask first time (22) F
5. I have pretended to be ill in order to not go to school. (24) T
6. I am always honest. (37) F
7. I always admit when I am wrong (46) F
8. I sometimes think bad thoughts about people (57) T
9. I always keep my promises (65) F
10. I have never dropped rubbish (69) T

APPENDIX B
Ethical Approval

5 July 2019

Dear Ms NICOLA SIMKISS, , , Nicola Gray, Associate Professor Andrew Kemp, Re: 0272 , Mental Health Literacy

Your application - https://swansea.forms.ethicalreviewmanager.com/ProjectView/Index/272 - has been reviewed and approved by the Department of Psychology Ethics Committee.

The list of additional students (if any) are included in the table below:

Other student applicant - first name	Other student applicant - Surname	Other student applicant - email

additional researcher or student - first name	additional researcher or student - surname	additional researcher or student - email

The conditions of this approval are as follows:

- To conduct your study strictly in accordance with the proposal that has been approved by the committee, including any approved amendments
- To advise the ethics committee chair of any complaints or other issues that may warrant ethical review of the project
- To submit for approval any changes to the approved protocol before implementing any such changes
- To keep any information obtained from your participants absolutely confidential

Please note that failure to comply with these conditions of approval may result in the withdrawal of approval for the project.

To advertise your study on the departmental Participant Pool: You will need to send send a request for your study to be made visible, via the link on the Experiment Management System website (see Researcher Documentation for details). Please ensure that you attach this letter to your request. (If you are unable to attach the Ethics approval, send it in a separate email to Dr. Phil Tucker [redacted]).

For students: Please ensure that the signed copy of this Ethical Approval, together with any other paperwork associated with your research, is included in your final write up.

Yours Sincerely,
Dr Megan Crawford (Reviewer of Application)
Dr Gabriela Jiga Boy (Committee Chair)

APPENDIX C
Knowledge and Attitudes towards Mental Health Scale (KAMHS)

Version 2

Understanding how to optimise and maintain good mental health

1. Drinking alcohol does not help when you are stressed (1) (SA)
2. It's often best to ignore problems and hope they go away (6) (SD)
3. Taking illegal drugs can never help when you are stressed by something (21) (SA)
4. The same things that help our physical health also help our mental health (34) (SA)
5. Healthy eating helps you maintain good mental health (37) (SA)
6. Sometimes things that stress you should be faced head-on (35) (SA)

Public Stigma (lack of)

1. People with a mental disorder can be unpredictable at times (2) (SD)
2. I would be happy for a person with a mental disorder to come to my house (36) (SA)
3. Mental disorders are caused by people being wicked or bad (38) (SD)
4. A child with a mental disorder should be carefully watched during classroom activities (16) (SD)
5. I wouldn't want to marry or date a person with a mental disorder (27) (SD)
6. I would feel comfortable sitting next to a person with a mental disorder (17) (SA)

Understanding mental disorders and their treatments (Knowledge)

1. Emotions are controlled by your heart (28) (SD)
2. An Anxiety Disorder happens when a person's brain detects the presence of danger- such as a dog barking (3) (SD)
3. Medicines should never be used to treat a mental disorder (15) (SD)
4. People with Schizophrenia have a split personality (18) (SD)
5. Most mental disorders start before the age of 18 (7) (SA)
6. Severe and repeated stress can affect the brain (29) (SA)
7. If you are worried about something, then you probably have Generalised Anxiety Disorder (13) (SD)
8. People with Bipolar Disorder have periods of clinical depression and periods of Mania (31) (SA)
9. Vitamins and yoga are effective treatments for most mental disorders (26) (SD)
10. Attention Deficit Hyperactivity Disorder (ADHD) is caused by watching too much TV or eating too much (20) (SD)
11. Obsessions are thoughts that occur often that the person wants to get rid of but can't (12) (SA)
12. Schizophrenia can be treated with medication and psychological therapy (32) (SA)

Help-seeking behaviours

1. For me, it would be easy to ask for help for a mental health problem (11) (SA)
2. I wouldn't tell anyone if I had a mental health problem in case they made fun of me. (5) (SD)
3. I am confident that I could ask for help if I had a mental health problem (8) (SA)
4. If I had a mental health problem I would try to hide it from everyone (24) (SD)

Social Desirability

1. I sometimes gossip about others. (4) (SA)
2. I always do what my parents ask first time (30) (SA)
3. I have pretended to be ill in order to not go to school (22) (SA)
4. I always admit when I am wrong (19) (SA)
5. I have never dropped rubbish (9) (SA)
6. I always keep my promises (14) (SA)

Self-stigma (lack of)

1. If I had a mental disorder, I would feel worthless like I had failed my family (33) (SD)
2. I would feel a failure if I had a mental disorder (25) (SD)
3. If I had a mental disorder I would avoid socialising (23) (SD)
4. If I had a mental disorder I would feel ashamed (10 (SD)

APPENDIX D
Ethical approval

29 January 2019

Dear Ms NICOLA SIMKISS, , , Nicola Gray, Associate Professor Andrew Kemp, Re: 0301 , Pilot Study

Your application - https://swansea.review.ethicalreviewmanager.com/projectTimeline/Index/287 - has been reviewed and approved by the Department of Psychology Ethics Committee.

The conditions of this approval are as follows:

1. To conduct your study strictly in accordance with the proposal that has been approved by the committee, including any approved amendments

2. To advise the ethics committee chair of any complaints or other issues that may warrant ethical review of the project

3. To submit for approval any changes to the approved protocol before implementing any such changes

4. To keep any information obtained from your participants absolutely confidential

Please note that failure to comply with these conditions of approval may result in the withdrawal of approval for the project. To advertise your study on the departmental Participant Pool: You will need to send send a request for your study to be made visible, via the link on the Experiment Management System website (see Researcher Documentation for details). Please ensure that you attach this letter to your request. (If you are unable to attach the Ethics approval, send it in a separate email to Dr. Phil Tucker [redacted]). For students: Please ensure that the signed copy of this Ethical Approval, together with any other paperwork associated with your research, is included in your final write up.

Yours Sincerely, Dr Ceri Bradshaw (Reviewer of Application) Associate Professor Andrew Kemp (Committee Chair)

APPENDIX E
Knowledge and Attitudes towards Mental Health Scale (KAMHS)

Outline

Understanding mental disorders and their treatments

1. An Anxiety Disorder happens when a person's brain detects the presence of danger- such as a dog barking (SD) (3)
2. Most mental disorders start before the age of 18 (SA) (7)
3. Obsessions are thoughts that occur often that the person wants to get rid of but can't (SA) (12)
4. If you are worried about something, then you probably have Generalised Anxiety Disorder (SD) (13)
5. Medicines should never be used to treat a mental disorder (SD) (15)
6. People with Schizophrenia have a split personality (SD) (18)
7. Attention Deficit Hyperactivity Disorder (ADHD) is caused by watching too much TV or eating too much sugar (SD) (20)
8. Vitamins and yoga are effective treatments for most mental disorders (SD) (26)
9. Emotions are controlled by your heart (SD) (28)
10. Severe and repeated stress can affect the brain (SA) (29)
11. People with Bipolar Disorder have periods of clinical depression and periods of Mania. (SA) (31)
12. Schizophrenia can be treated with medication and psychological therapy (SA) (32)

Public Stigma- lack of

1. If my friend had a mental disorder I would avoid them (SD) (2)
2. I would not like to be in the same classroom as someone with a mental disorder (SD) (16)
3. I would feel comfortable sitting next to a person with a mental disorder (SA) (17)
4. I wouldn't want to marry or date a person with a mental disorder (SD) (27)
5. I would be happy for a person with a mental disorder to come to my house (SA) (36)
6. Mental disorders are caused by people being wicked or bad (SD) (38)

Social Desirability

1. I sometimes think bad thoughts about people (4) (SD)
2. I have never dropped rubbish (9) (SA)
3. I always keep my promises (14) (SA)
4. I always admit when I am wrong (19) (SA)
5. I am always honest (22) (SA)
6. I always do what my parents/carers asks first time (30) (SA)
7. I have said unkind things about a person (41) (SD)
8. I always wash my hands before every meal (48) (SA)

Understanding how to optimise and maintain good mental health

1. The same things that help our physical health also help our mental health (SA) (34)
2. Sometimes things that stress you should be faced head-on (SA) (35)
3. Healthy eating helps you maintain good mental health (SA) (37)
4. A good night's sleep is good for your mental health (SA) (39)
5. Regular exercise has no effect on your mental health (SD) (44)
6. Talking about your feelings can help with mental health problems (SA) (50)

Lack of- Avoidant Coping

1. Drinking alcohol never helps when you are stressed (SA) (8)
2. It's often best to ignore problems and hope they go away (SD) (6)

3. Taking illegal drugs can never help when you are stressed by something (SA) (21)
4. The best way to cope with problems is not to think about them (SD) (40)
5. I do my best not to think about my problems (SD) (47)

Self-stigma- lack of

1. If I had a mental disorder I would not feel ashamed (SA) (10)
2. If I had a mental disorder I would not avoid socialising (SA) (23)
3. I would feel a failure if I had a mental disorder (SD) (25)
4. If I had a mental disorder, I would feel worthless like I had failed my family (SD) (33)
5. I would feel weak if I had a mental disorder (SD) (43)
6. If I had a mental disorder, I would feel I'd let everyone down (SD) (49)

Help-seeking behaviours

1. I wouldn't tell anyone if I had a mental health problem in case they made fun of me (SD) (5)
2. I am confident that I could ask for help if I had a mental health problem (SA) (1)
3. For me, it would be easy to ask for help for a mental health problem (SA) (11)
4. If I had a mental health problem I would try to hide it from everyone (SD) (24)
5. If I had a mental health problem, I would be happy to tell my teacher or school counsellor (SA) (42)
6. It's best not to tell anyone about your mental health problems (SD) (45)
7. If I had a mental health problem, I would not tell friends and family (SD) (46)

APPENDIX F
Strengths and Difficulties Questionnaire (Goodman, 2001)

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last six months.

Male/Female

	Not True	Somewhat True	Certainly True
I try to be nice to other people. I care about their feelings	☐	☐	☐
I am restless, I cannot stay still for long	☐	☐	☐
I get a lot of headaches, stomach-aches or sickness	☐	☐	☐
I usually share with others (food, games, pens etc.)	☐	☐	☐
I get very angry and often lose my temper	☐	☐	☐
I am usually on my own. I generally play alone or keep to myself	☐	☐	☐
I usually do as I am told	☐	☐	☐
I worry a lot	☐	☐	☐
I am helpful if someone is hurt, upset or feeling ill	☐	☐	☐
I am constantly fidgeting or squirming	☐	☐	☐
I have one good friend or more	☐	☐	☐
I fight a lot. I can make other people do what I want	☐	☐	☐
I am often unhappy, down-hearted or tearful	☐	☐	☐
Other people my age generally like me	☐	☐	☐
I am easily distracted, I find it difficult to concentrate	☐	☐	☐
I am nervous in new situations. I easily lose confidence	☐	☐	☐
I am kind to younger children	☐	☐	☐
I am often accused of lying or cheating	☐	☐	☐
Other children or young people pick on me or bully me	☐	☐	☐
I often volunteer to help others (parents, teachers, children)	☐	☐	☐
I think before I do things	☐	☐	☐
I take things that are not mine from home, school or elsewhere	☐	☐	☐
I get on better with adults than with people my own age	☐	☐	☐
I have many fears, I am easily scared	☐	☐	☐
I finish the work I'm doing. My attention is good	☐	☐	☐

Do you have any other comments or concerns?

Please turn over - there are a few more questions on the other side

Overall, do you think that you have difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

No	Yes-minor difficulties	Yes-definite difficulties	Yes-severe difficulties
☐	☐	☐	☐

If you have answered "Yes", please answer the following questions about these difficulties:

- How long have these difficulties been present?

Less than a month	1-5 months	6-12 months	Over a year
☐	☐	☐	☐

- Do the difficulties upset or distress you?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

- Do the difficulties interfere with your everyday life in the following areas?

	Not at all	Only a little	Quite a lot	A great deal
HOME LIFE	☐	☐	☐	☐
FRIENDSHIPS	☐	☐	☐	☐
CLASSROOM LEARNING	☐	☐	☐	☐
LEISURE ACTIVITIES	☐	☐	☐	☐

- Do the difficulties make it harder for those around you (family, friends, teachers, etc.)?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

APPENDIX G
Paediatric Quality of Life Inventory (PedsQL)

ID#_____

PedsQL™

Paediatric Quality of Life Inventory

Version 4.0 - English (United Kingdom)

CHILD REPORT (ages **8-12**)

INSTRUCTIONS

On the following page is a list of things that might be a problem for you. Please tell us **how much of a problem** each one has been for you over the **PAST MONTH** by circling:

0 if it is **never** a problem
1 if it is **almost never** a problem
2 if it is **sometimes** aproblem
3 if it is **often** a problem
4 if it is **almost always** a problem

There are no right or wrong answers.
If you do not understand a question, please ask for help.

*Over the **PAST MONTH**, how much of a **problem** has this been for you...*

ABOUT MY HEALTH AND ACTIVITIES *(problems with...)*	Never	Almost Never	Some-times	Often	Almost Always
1. It is hard for me to walk more than a couple of streets (about 100 metres)	0	1	2	3	4
2. It is hard for me to run	0	1	2	3	4
3. It is hard for me to do sports activities or exercise	0	1	2	3	4

4. It is hard for me to lift heavy things	0	1	2	3	4
5. It is hard for me to have a bath or shower by myself	0	1	2	3	4
6. It is hard for me to do chores around the house	0	1	2	3	4
7. I have aches and pains	0	1	2	3	4
8. I feel tired	0	1	2	3	4

ABOUT MY FEELINGS ***(problems with…)***	**Never**	**Almost Never**	**Some-times**	**Often**	**Almost Always**
1. I feel afraid or scared	0	1	2	3	4
2. I feel sad	0	1	2	3	4
3. I feel angry	0	1	2	3	4
4. I have trouble sleeping	0	1	2	3	4
5. I worry about what will happen to me	0	1	2	3	4

HOW I GET ON WITH OTHERS ***(problems with…)***	**Never**	**Almost Never**	**Some-times**	**Often**	**Almost Always**
1. I have trouble getting on with other children	0	1	2	3	4
2. Other children do not want to be my friend	0	1	2	3	4
3. Other children tease me	0	1	2	3	4
4. I cannot do things that other children my age can do	0	1	2	3	4
5. It is hard to keep up when I play with other children	0	1	2	3	4

ABOUT SCHOOL ***(problems with…)***	**Never**	**Almost Never**	**Some-times**	**Often**	**Almost Always**
1. It is hard to pay attention in class	0	1	2	3	4
2. I forget things	0	1	2	3	4
3. I have trouble keeping up with my school work	0	1	2	3	4
4. I miss school because of not feeling well	0	1	2	3	4
5. I miss school to go to the doctor or hospital	0	1	2	3	4

APPENDIX H
Service Level Agreement

Service Level Agreement

'The Guide', Wales

Mental Health Literacy Programme

Partnership Agreement for receiving the Mental Health & High School Curriculum Guide in Wales

Purpose

This agreement outlines the expectations from both parties for delivering and receiving an intervention, including the communications required to achieve the necessary tasks involved for a research team to collect vital data in participating schools as part of a major research study for a random controlled trial (RCT).

This working partnership exists in order to achieve better mental health outcomes for young people.

Context

The Guide is a proven evidenced based mental health literacy programme which aims to improve mental health literacy in teachers and in year 9 pupils.

The components which make up The Guide include three core elements which include, training for designated teachers, on-line and self-study resources for teachers and six curriculum modules with resources, ready to delivery in the classroom.

The six modules are taught consecutively, over a period of 8-12 hours in total.

The training delivery and guidance provided to school staff will be delivered by Action for Children staff who have been trained in The Guide programme.

The government funders have agreed that the training and intervention in schools will also be independently evaluated by Swansea University. As such, this All Wales programme will also be a major research study where an All Wales random controlled trial (RCT) will be conducted to measure

the provisions impact and effectiveness and its findings will generate both insight and lessons learned, which as a result will inform future recommendations.

Agreement

The school will:

- Nominate up to three members of teaching staff per school to receive training, one of which will be a Designated Lead who is a member of the Senior Leadership Team
- Release the staff to attend training over two days
- Confirm start and finish dates of when the intervention will be planned for delivery in school to Yr.9's
- Ensure that staff receiving the training will complete pre and post-evaluation measures
- Ensure that the staff organising the delivery in schools will facilitate the completion of pre- and post-evaluation measures by children receiving the intervention in school
- Optional: It would be much appreciated if schools could provide a training space if possible for the 'Go-To' Training when it is delivered in their area.

Action for Children will:

- Provide two days free training for up to three teachers in each school
- Provide free access to teacher resources and video aids to support teaching delivery in schools
- Provide free access to The Guide's six curriculum modules
- Provide guidance and support to teaching staff that have received the training
- Ensure that whilst visiting school premises, if there's any reason to be concerned about a child, this will be reported to the school's Safeguarding Designated Teacher
- Provide research findings to schools at the end of the project, when they become available

2.Service Level Agreement, 'The Guide', Wales

Mental Health Literacy Programme

We would like to receive The Guide Training and Intervention in our school

School Name: _____

Local Education Authority: _____

Headteacher Name: _____

Headteacher Email: _____

Headteacher Signature: _____

Date: _____

Designated Teachers to Receive Training:

1 Name: _____ **Role:** _____

Email: _____

2 Name: _____ **Role:** _____

Email: _____

3 Name: _____ **Role:** _____

Email: _____

Please note that once staff have received the Go-To Training, the intervention to year 9 pupils needs to start and be completed within 10-14 weeks. There is flexibility in how the modules are delivered and we would suggest that up to two modules *could* be delivered within a week, where there's capacity.

Action for Children, Wales Divisional Office, St David's Court, 68a Cowbridge Rd East, Cardiff, CF11 9DN

Gweithredu dros Blant, Swyddfa Ranbarthol Cymru, Llys Dewi Sant, 68a Heol y Bontfaen, Caerdydd, CF11 9DN

Tel: 02920 222127 Email:TheGuide@actionforchildren.org.uk


Do what's right for children.
Do what's needed.
Do what works.
HOW
ACTION FOR CHILDREN
WORKS
SUT MAE
GWEITHREDU DROS BLANT
YN GWEITHIO
Gwneud beth sy'n iawn i blant.
Gwneud beth sydd ei angen.
Gwneud beth sy'n gweithio.


Ariennir gan
Lywodraeth Cymru
Funded by
Welsh Government

APPENDIX I
Guide Cymru information for schools

The Guide Project

What is it?

A Mental Health Literacy Programme designed to aid students and their teachers to improve their Mental Health knowledge, reduce stigma, and increase help seeking behaviours.

Mental health literacy for this project is defined as:

- Understanding how to optimise/maintain good mental health
- Understanding mental disorders and their treatments
- Decreasing stigma
- Increasing help-seeking efficacy

Early adolescence is a time where a dramatic increase in mental disorder diagnosis can be seen. It is therefore essential to equip young people with the skills to manage their own mental health and help recognise if others are struggling. The Guide Project in Wales has been adapted to be delivered to 13-15 year olds (year 9 pupils) in mainstream secondary schools and consists of three aspects:

1.) 'Go-To' Training for Educators
2.) Access to on-line resources and videos for teachers to support teaching delivery
3.) Six curriculum modules ready for delivery into the classroom

Why was the Guide needed?

A training gap was identified across educators in Canada.

90% of educational staff did not feel confident in managing mental health difficulties in schools and the mental health resources available were limited and had not been measured or proven to be successful at aiding students or teachers addressing such difficulties.

The Guide was designed by Dr Stan Kutcher and his team to create evidence-based resources, evaluated by students, educators and mental health professionals that would aid educators to identify and prevent mental health disorders. The Guide was developed over ten years and has had three revisions based upon feedback and findings.

Since its implementation The Guide has been adapted and shown to be effective across the world at improving mental health literacy in countries such as China, Bangladesh, Malawi, USA and Finland.

Action for Children Objectives

The project aims to positively impact:

- **30,000 year 9 pupils**
- **615 Teachers**
- **205 Secondary Schools**

To achieve these objectives, the Go-To Educator training will be delivered to designated teachers and consequently The Guide curriculum will then be delivered to Year 9 Pupils.

'Go-To' Educator Training

The 'Go-To' Educator training is a prerequisite to the guide which provides comprehensive mental health literacy training for teachers.

The aim of this two-day training is to equip up to 3 teachers from every school across Wales with enough knowledge necessary to be able to help prevention and assist early identification, of mental disorders. The designated teachers receiving the training need to be those who children would naturally seek out for support and "Go-To" to access the help they need.

The Curriculum Guide

The guide consists of six modules and is aimed at providing year 9 pupils with knowledge and awareness of positive mental well-being and common mental health conditions and providing information regarding how to seek help should they need it. Teachers are encouraged to amend the delivery of the curriculum to suit the ethos of their school and needs of their pupils. The modules are designed to be taught consecutively over a period of 8-12 hours in total. The six modules within the curriculum are:

Module 1. *Stigma: Myths and Realities of Mental Illness. This module explores the nature of stigma and some common myths and realities associated with mental illness.*

Module 2. *Understanding Mental Health and Mental Illness. This module will introduce young people to brain development and brain function and will help them understand that it is responsible for both mental and physical health.*

Module 3. *Information on Specific Mental Illnesses. Young people will learn about common mental health disorders they or their friends might experience. This module is about raising their knowledge and understanding of mental disorders.*

Module 4. *Experiences of Mental Illness and the Importance of Family Communication. This module focuses upon case studies of young people with experiences of mental illness, and explores how those experiences affected their relationships with peers, family etc.*

Module 5. *Seeking Help and Finding Support. This module will provide students with the necessary information they need to access the support and guidance available when required.*

Module 6. *The Importance of Positive Mental Health. This module focuses upon teaching students the importance of good mental health, including understanding what constitutes good mental health, and how best to maintain it.*

How will we prove together that it has been a success?

To evaluate the success of the intervention a Randomised Control Trial (RCT) will be conducted in partnership with Swansea University. An RCT is designed to identify whether there is a cause-effect outcome of the intervention and is the accepted 'gold standard' methodology for evaluating outcomes of health interventions. Within this project, an RCT will be used to identify:

- the impact of delivering The Guide to all Year 9 pupils across Wales, in terms of improving their mental health knowledge and help-seeking efficacy, and to reduce levels of stigma about mental disorder, in comparison to "business as usual"

Furthermore, the RCT will help teachers and educators recognise how The Guide best fits alongside the new national curriculum and identify the barriers, as well as the best facilitators, to successful delivery.

Please see overleaf for further details on how this intervention will be evaluated.

INDEPENDENT **EVALUATION**

OF THE

GUIDE PROJECT INTERVENTIONS

Conducting a **Randomised Control Trial** (RCT) is fundamental for providing evidence that the intended project outcomes have been achieved and that these outcomes are due to the impact of the intervention. To perform the RCT, Year 9 children and teachers in each school will be tested both **BEFORE** and **AFTER** training on The Guide. The testing will consist of short questionnaires (containing true vs false questions) about mental health that only take approximately 10-20 minutes to complete.

All schools who wish to take the training will be randomized to one of two conditions:

1.) Immediate intervention group

For the immediate intervention group, we will test just before The Guide delivery, at completion of The Guide and then a few months later (to test for sustainability of positive outcome).

2.) Delayed intervention group

For the delayed intervention group, we will test about two months before The Guide, just before The Guide, and at the completion of The Guide.

This will allow us to compare outcomes in schools before and after the training, but also to compare schools that have received The Guide with a matched school that has not yet received it. All schools that have signed-up to the project will receive the intervention.

The person leading the research and evaluation at Swansea University is Professor Nicola Gray and data collection will be conducted by Nicola Simkiss (PhD student) who will be working alongside the Action for Children delivery team of Elizabeth Lawrence (Project Support Officer) and Janine Thomas (Clinical Lead).

Please note the evaluation and research from the Guide Project will be published in peer reviewed scientific journals.

If you should have any queries or would like to discuss this exciting new training and intervention further, please contact Janine Thomas at TheGuide@actionforchildren.org.uk or call **02920 222127** or **07967 208153**.