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RESEARCH ARTICLE

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Obstacles to treatment retention in opioid use disorder: An international substance use disorder treatment worker survey

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Abstract

Introduction: Treatment retention is associated with better outcomes and reduced risk amongst people experiencing opioid use disorder (OUD). Despite this, treatment retention remains low amongst this population.

Methods: We carried out an international cross-sectional survey of substance use disorder (SUD) treatment service workers. We aimed to understand the barriers to treatment retention in the context of OUD from the provider perspective, identify differences in response preference between professional groups, and describe regional differences in treatment provision.

Results: We report data from 497 respondents based in the USA and the UK. Personality disorders, low motivation to change and social problems were the most often reported obstacles to retention. Comorbid SUD, hepatitis and HIV were not reported as often as expected. We identified associations between professional groups and response preferences related to comorbid SUD, low motivation, living arrangements and communication difficulties. UK respondents used behavioural treatments more than their US counterparts. US respondents more often reported using objective methods of measuring retention such as urine analysis, compared to their UK counterparts.

Discussion: The findings from this survey suggest that regional differences exist between US and UK based SUD treatment service workers. Personality disorders represented the most often experienced obstacles to treatment retention amongst patients with OUD, with mental health and social problems more often reported than comorbid drug problems or physical health problems. Statistically significant relationships exist between professional group and obstacles reported. These data may be used to identify additional training needs amongst SUD treatment service staff.

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KEYWORDS
addictions, heroin, opioid use disorder, retention, substance use disorder treatment, survey

1 | INTRODUCTION

The term 'adherence' refers to the extent to which a person's medication-taking or treatment engagement behaviour follows the recommendations of the treatment provider (Chakrabarti, 2014). Terms such as 'attrition', 'drop out', 'persistence', and 'continuation' are all present in the literature and are sometimes used erroneously as synonyms for adherence (Horne et al., 2013). Attrition or 'drop out' refers to the proportion of patients who discontinue their engagement with treatment before optimal response (Roseborough et al., 2016). This can of course occur for different reasons, including death, hospitalisation, or other rapid changes of circumstance which do not necessary reflect how well a patient adhered to their prescribed treatment. Similarly persistence and continuation refer to the longevity of engagement in treatment, and not to the level of adherence to the treatment regime itself (Guerci et al., 2019). We therefore opt to apply the term 'treatment retention' as a term which can be used to describe a patient's continuation in a particular treatment regime, without placing undue responsibility on patients for cessation or interruptions to treatment due to factors out of their control.

In the context of opioid use disorder (OUD), treatment retention is strongly associated with better treatment outcomes (Langdon et al., 2020; Stam et al., 2019; Trafton et al., 2007) and reduced risk of overdose (Wolff, 2002). Despite the benefits of treatment retention in the context of OUD, treatment retention remains low (Parpouchi et al., 2017; Zhou et al., 2017). In addition, there is a paucity of literature concerning the nature of obstacles to treatment retention affecting treatment seeking OUD patients.

We carried out a survey of substance use disorder (SUD) service workers. The aims of this study were to describe treatments delivered by SUD workers for OUD; describe the methods by which SUD service workers measure retention to treatments for OUD; identify obstacles to treatment retention for OUD; and identify any relationships between professional background and years of experience with reported obstacles. As such this study was exploratory and undertaken in the absence of any specific hypotheses related to sample characteristics.

2 | METHODS

2.1 | Design of the survey

Survey items were developed over two phases. In the first phase, items were chosen during open-ended discussion between the study authors who have expertise in survey research, pharmacology of drugs of abuse, psychopathology of addiction, and research methods and statistics. The second phase included piloting of the initial survey items with a sample of $n = 6$ clinical and academic experts including addiction psychiatrists, research academics, a SUD treatment service manager, and a specialist pharmacist.

At the outset of participation in the survey respondents were asked for their age, gender, job title, and years of experience. Respondents were then asked to state the kinds of treatments they delivered for OUD, and how they measure retention on an individual patient basis. Respondents were then presented with the first of two rounds of questions related to patient characteristics and treatment retention to identify primary and then secondary obstacles. Respondents were asked "Based on your clinical experience, which one patient characteristic most often correlates with poorer retention to treatment?". Respondents were then able to choose from items including patient gender; patient age; other drug problems, comorbid mental health problem or disability; comorbid physical health problem or disability; poor family relationships; unstable housing or homelessness; low motivation to change; difficulty communicating; unmet medical or care needs; peripatetic/chaotic lifestyle; financial difficulties; living with peer user; or other (with free-text box). Respondents were able to select more than one obstacle if they felt that more than one factor held equal weighting. Each round included a multiple-choice question with 14 possible responses including a free text option. Of these 14 responses, 9 led to a subsequent multiple-choice question which also included an optional free text response.

Each item led to further items which allowed the respondent to elaborate on their initial answer. For example, if a respondent chose 'Age' as their initial answer, they could then choose from a series of age ranges to elaborate. If a respondent chose 'Comorbid mental health problem' they would be presented with a list of mental health problem diagnostic categories.

Secondly respondents were asked "Thank you for your answer. In your experience, which patient characteristic is the next most often correlated with poorer retention to treatment?". Once respondents answered this question, they were once again able to elaborate on their response.

The survey ended by displaying a debriefing message, and by asking the respondent for their email address via a free-text box for entry into the raffle.

2.2 | Recruitment of SUD treatment service workers

We conducted a cross-sectional survey from 1/1/22 to 1/3/22 recruiting an international sample of SUD treatment service workers. To be included respondents had to work in SUD treatment services and deliver some form of treatment to patients (pharmacological or behavioural). Workers who did not actively provide treatment to patients (e.g. those in administrative roles) were excluded. The survey was developed and accessed using the Qualtrics survey management

system (Qualtrics [Internet], 2023), and the link disseminated via email using snowball sampling, and via Twitter. Emails were sent to service managers at six private or third sector organisations based in the UK (Priory Group, Kaleidoscope Project, Gwent Drug & Alcohol Service (GDAS), Ahed Therapies, Change Grow Live (CGL), Barod); and to five National Health Service (NHS) trusts (Betsi Cadwaladr University Health Board, Hywel Dda University Health Board, Cwm Taf Morgannwg University Health Board, Cardiff & Vale University Health Board, and Swansea Bay University Health Board). The email described the aims of the study, briefly described the survey items, and asked the service manager to disseminate a link to the survey to staff they believed to be eligible based on our inclusion criteria. We did not request data regarding approximate sample sizes from service managers. A twitter account was created and used to advertise the survey using hashtags related to addictions and drug and alcohol service research for example, #addictionsresearch, #healthcaresurvey, #addictionnursing, #addictionpsychiatry, #substanceusedisorder, #healthcareresearch. The account tweeted an invitation to participate fortnightly throughout the study period. As incentives such as shopping vouchers have been found to improve survey response rates amongst clinicians (VanGeest et al., 2007), respondents were able to enter a raffle to win an electronic gift voucher for a major online retailer valued at the equivalent of £50. This was funded by a small Santander scholarship grant. We conservatively calculated a desired sample size of $n = 385$ for an unknown population using Cochran's formula (Cochran & Cochran, 1977): based on a 95% confidence level equating to a Z-score of 1.96, a 0.5 standard deviation, and a margin of error of 5% $n = 1.962 \times 0.5 \times (1 - 0.5)/0.052 = 384.16$.

2.3 | Statistical analysis

We sought to report descriptive statistics including means and standard deviations. Nominal data related to treatments provided and measures of retention employed would also be captured and summarised in table format. Chi-squared tests of independence would be used to identify associations between professional background and primary and secondary obstacle preferences. Kruskal-Wallis tests of independence would be used to identify associations between years of experience and primary and secondary obstacle preference. All analysis was conducted using SPSS (Statistical Package for the Social Sciences, Version 26, 2019, IBM Corp) (SPSS Statistics - United Kingdom [Internet], 2018).

2.4 | Ethics and privacy

This survey study was approved by the Swansea University Medical School ethics board (project reference number 2021-0082). Respondents provided their formal consent to participate and were made aware that their responses were anonymous and that the survey was confidential. Response data was securely stored so that it was not possible for anyone outside of the research team to access or view the data. All respondents were offered the chance to enter a raffle as a thank you for participating and this meant providing a contact email. Email addresses were deemed personal data and so were stored securely and separately to the rest of the study data, and these data deleted once the raffle had been carried out immediately after the close of the survey.

3 | RESULTS

3.1 | Response rate and respondent characteristics

Of $n = 547$ responses, $n = 507$ responses were included at analysis, and $n = 40$ responses were excluded due to incompleteness (less than 97% completeness).

Gender ratio was close to equal at 50.3% ($n = 255$) female and 47.93% ($n = 243$) male, with 1.77% of respondents choosing not to report their gender ($n = 9$). Median age was 35.54 [8.52] years.

Most workers reported between 5 and 10 years of experience in the treatment of OUD. Age was positively correlated with experience ($r = 0.43$, $p = < 0.001$).

Respondents were based in seven different countries: $n = 438$ answered from the USA; $n = 59$ from the UK; $n = 4$ from Spain; $n = 3$ from Netherlands; $n = 1$ from Canada; $n = 1$ from Italy; $n = 1$ from Kenya.

A total of 45 different job titles were reported and professional groups were ascertained where this was clear in the job title for example, if a participant's job title was listed as 'addiction liaison nurse' then professional group would equal nurse. 'Support worker' represents a wider frame of job titles which included "support worker", "case worker", "use worker", "liaison worker", "links worker", "engagement worker", and acronyms thereof like 'HCSW' (Health Care Support Worker). Using this method, respondents fell in to five professional groups based on job titles. Most workers were nurses ($n = 179$), followed by psychologists ($n = 131$), then medical doctors ($n = 108$). A minority were support workers ($n = 68$). $n = 1$ was a social worker, $n = 4$ respondents did not report their job title and $n = 20$ participants did not provide job titles from which it was possible to clearly establish professional background. These respondents' data were excluded from any analysis which sought to identify relationships between item response and professional grouping.

3.2 | Treatments provided

Buprenorphine was the most provided pharmacological treatment (when alone and combined with naloxone buprenorphine represented over 30% of reported treatments provided by respondents), closely followed by methadone. Motivational Interviewing (MI) was the most often provided behavioural treatment The average number of different methods of treatments provided per respondents was 2.41.

Responses varied by region are summarised in Table 1. The most common pharmacological therapies (buprenorphine with and without

TABLE 1 Treatments provided by location.

Treatment	USA responses (*n* = 438)	%	UK responses (*n* = 59)	%	Total responses (*n* = 497)	%
Any treatment	922	100	263	100	1185	100
Pharmacological - buprenorphine	189	20.5	38	14.4	227	19.2
Pharmacological - methadone	180	19.5	39	14.8	219	18.5
Pharmacological - naltrexone	124	13.4	30	11.4	154	13.0
Pharmacological - buprenorphine with naloxone	111	12	25	9.5	136	11.5
Behavioural - motivational interviewing	31	3.4	38	14.4	69	5.8
Pharmacological - lofexidine	47	4.3	14	5.3	61	5.1
Behavioural - CBT	35	3.8	17	6.5	52	4.4
Behavioural - Self-management and recovery training (SMART)	32	3.5	14	5.3	46	3.9
Pharmacological - diamorphine (HAT)	40	4.3	5	1.9	45	3.8
Behavioural - 12 step	37	4	8	3.0	45	3.8
Behavioural - trauma-focussed therapy for example, EMDR or TF-CBT	32	3.5	12	4.6	44	3.7
Pharmacological - dihydrocodeine	32	3.5	11	4.2	43	3.6
Behavioural - contingency management	27	2.9	5	1.9	32	2.7
Behavioural - couples therapy	5	0.5	2	0.8	7	0.6
Behavioural - solution focussed therapy	2	0.2	2	0.8	4	0.3
Behavioural - couples therapy	2	0.2	2	0.8	4	0.3
Behavioural - Core skills for relapse prevention	1	0.1	1	0.4	2	0.2
Pharmacological - clonidine	1	0.1	1	0.4	2	0.2

Abbreviations: EMDR, Eye Movement Desensitization and Reprocessing; TF-CBT, Trauma Focussed Cognitive Behavioural Therapy.

naloxone, methadone, naltrexone and lofexidine) were provided by similar proportions of respondents in both the USA and UK. Notably Heroin Assisted Treatment (HAT) was reported as being provided by over 4% of USA respondents. This is an erroneous response as HAT is not a legally mandated treatment in the USA as it is in the UK (Gossop et al., 2005), where a much lower proportion of UK respondents reported providing this treatment. The most often provided behavioural treatment in the USA was 12-step, making up close to 4% of all treatments, with MI the most often provided behavioural treatment in the UK. Behavioural treatments made up over 20% of treatments reported in the US and close to 40% of treatments provided in the UK.

The number of respondents from the EU, Canada and Kenya were very low making meaningful observations from these data impossible. As such they are omitted from this report.

3.3 | Measures of retention

Urine toxicology and medication compliance were the most often employed measures of retention. By dividing the number of responses by the number of respondents we see that on average respondents reported utilising 1.96 methods of retention each.

As presented in Table 2, urine toxicology screening and medication compliance were the most frequently employed measures employed by US respondents. UK respondents reported monitoring attendance as the most often employed measure of retention, though medication compliance was also the second most often employed.

3.4 | Primary and secondary obstacles to retention

By dividing the number of responses by the number of respondents we see that on average respondents identified 1.64 primary obstacles to retention each. Cluster C and B personality disorders were the two most often reported primary obstacles. Cluster A personality disorders are characterised by social awkwardness and social isolation; Cluster B disorders are characterised by poor emotional regulation, and inappropriate or unpredictable behaviours; and Cluster C disorders are characterised by anxiety, fear or panic, and excessive avoidance of feared stimuli (American Psychiatric Association). Mental health and social issues were more often reported than physical illnesses.

Again, by dividing the number of responses by the number of respondents we see that on average respondents reported an average of 1.68 secondary obstacles to retention. Cluster A, B and C

TABLE 2 Measures of retention by location.

Retention measure	No. of responses USA (n = 438)	%	No. of responses UK (n = 59)	%	Total responses (n = 497)	%
Any measure	763	100	207	100	970	100
Urine toxicology screening	247	32.4	43	20.1	290	29.9
Medication compliance	241	31.5	40	19.2	281	29.0
Patient self-report	137	17.9	50	23.5	187	19.3
Attendance	82	10.7	48	23.2	130	13.4
Mouth swab	56	7.3	21	10	77	7.9
Feedback from keyworker and pharmacist	0	0	2	1	2	0.2
History and presentation	0	0	1	0.5	1	0.1
Psychometric outcome measures	0	0	1	0.5	1	0.1
Observation of patient	0	0	1	0.5	1	0.1

personality disorders topped the list of responses, making up 20.9% of all reported secondary obstacles to retention. As with primary obstacles to retention, mental health and social issues were more often reported than physical illnesses.

All primary and secondary obstacles to retention as reported by the sample are summarised in Table 3.

3.5 | Professional background and reported obstacles to retention

Pearson's Chi-squared test were performed to assess the relationship between professional background and primary and secondary obstacles as reported by respondents. The identified professional backgrounds including Doctor, Nurse, Psychologist, and Support Worker (Social Worker was omitted due to low count of n = 1) were grouped in to one 'professional group' string variable in SPSS, and two analyses were run to identify associations between professional group and primary obstacle preference and for professional group and secondary obstacle preference. Each are reported on below:

3.5.1 | Professional grouping and primary obstacles

Regarding primary obstacles, no significant associations were identified between professional group and patient age, gender, comorbid physical health problem, financial difficulties, poor family relationships, service factors, unmet medical or care needs, or unstable housing and homelessness, or peripatetic/chaotic lifestyle.

Statistically significant relationships were found between professional group and comorbid mental health problem X^2 (3, n = 486) = 14.95, p = 0.002. In descending order 30.89% of Support Workers identified this as a primary obstacle to retention, along with 25.7% of Nurses, 21.38% of Psychologists and 9.26% of doctors.

Professional group was significantly associated with low motivation to change X^2 (3, n = 486) = 9.04, p = 0.29. With 13.89% of doctors identifying this as a primary obstacle to retention, and 6.87% of Psychologists, 5.03% of Nurses, and 4.41% of Support Workers.

Professional group was significantly associated with comorbid drug problems as a primary obstacle to retention X^2 (3, n = 486) = 13.34, p = 0.004. Proportions were 21.3% of doctors, 10.3% of Support Workers, 9.16% of Psychologists and 7.82% of Nurses.

Professional group was significantly associated with difficulty communicating or understanding treatment X^2 (3, n = 486) = 10.6, p = 0.014. 9.16% of Psychologists this as a primary obstacle to treatment retention, along with 6.7% of Nurses, 1.47% of Support Workers and 0.93% of doctors.

Professional group was significantly associated with living with a peer user X^2 (3, n = 486) = 8.4, p = 0.04. 4.63% of doctors considered this to be a primary obstacle to treatment retention, as did 1.53% of Psychologists, 0.56% of Nurses, and 0% of Support Workers.

3.5.2 | Professional grouping and secondary obstacles

Regarding secondary obstacles, no significant associations were identified between professional group and patient age, gender, comorbid physical health problem, difficulty communicating or understanding treatment, financial difficulties, living with peer users, low motivation to change, poor family relationships, unmet physical or care needs, or unstable housing or homelessness.

Statistically significant association was found between professional group and comorbid mental health problem X^2 (3, n = 486) = 17.54, p = < 0.001. 36.9% of Nurses, 30.9% of Support Workers, 29% of Psychologists and 13.9% of doctors identified this as a secondary obstacle to retention.

Professional group was significantly associated with other comorbid drug problems X^2 (3, n = 486) = 14.98, p = 0.002. 20.37% of

TABLE 3 Primary and secondary obstacles to retention.

Primary obstacles	No. of responses	%	Secondary obstacles	No. of responses	%	Combined %
Cluster C personality disorder	51	6.1%	Cluster C personality disorder	65	7.6%	13.7%
Cluster B personality disorder	47	5.6%	Cluster B personality disorder	63	7.4%	13.0%
Cluster A personality disorder	32	3.8%	Cluster A personality disorder	50	5.9%	9.7%
Low motivation to change	38	4.6%	Low motivation to change	36	4.2%	8.8%
Bipolar disorder	33	4.0%	Bipolar disorder	40	4.7%	8.7%
Peripatetic/chaotic lifestyle	39	4.7%	Peripatetic/chaotic lifestyle	33	3.9%	8.6%
Anxiety disorders	35	4.2%	Anxiety disorders	36	4.2%	8.4%
Poor family relationships	26	3.1%	Poor family relationships	44	5.2%	8.3%
Unstable housing or homelessness	34	4.1%	Unstable housing or homelessness	35	4.1%	8.2%
Schizophrenia	27	3.2%	Schizophrenia	33	3.9%	7.1%
Depression	28	3.4%	Depressive disorder	28	3.3%	6.7%
Other trauma presentation	15	1.8%	Other trauma presentation	27	3.2%	5.0%
Male gender	14	1.7%	Male gender	26	3.0%	4.7%
PTSD	17	2.0%	PTSD	23	2.7%	4.7%
Comorbid cannabis use	20	2.4%	Comorbid cannabis use	18	2.1%	4.5%
Comorbid solvents use	23	2.8%	Comorbid solvents use	12	1.4%	4.2%
Cardiovascular disease	18	2.2%	Cardiovascular disease	17	2.0%	4.2%
Attention deficit hyperactivity disorder	17	2.0%	Attention deficit hyperactivity disorder	17	2.0%	4.0%
Unmet social care needs	20	2.4%	Unmet social care needs	13	1.5%	3.9%
Neurological disease or injury	23	2.8%	Neurological disease	8	0.9%	3.7%
Comorbid hallucinogens use	21	2.5%	Comorbid hallucinogenic use	9	1.1%	3.6%
Respiratory disease	19	2.3%	Respiratory disease	10	1.2%	3.5%
Hepatitis	19	2.3%	Hepatitis	9	1.1%	3.4%
Unmet chronic health condition management needs	19	2.3%	Unmet chronic health condition management needs	9	1.1%	3.4%
Chronic pain	14	1.7%	Chronic pain	14	1.6%	3.3%
Brain injury related speech disorder	18	2.2%	Brain injury related speech disorder	8	0.9%	3.1%
Comorbid alcohol use	12	1.4%	Comorbid alcohol use	14	1.6%	3.0%
Female gender	3	0.4%	Female gender	22	2.6%	3.0%
HIV	13	1.6%	HIV	11	1.3%	2.9%
Autism spectrum disorder	8	1.0%	Autism spectrum disorder	15	1.8%	2.8%
Intellectual disability	10	1.2%	Intellectual disability	12	1.4%	2.6%
Age of 25–40 years	14	1.7%	Age 25–40 years	7	0.8%	2.5%
Comorbid Benzodiazepines use	10	1.2%	Comorbid Benzodiazepines use	11	1.3%	2.5%
Comorbid cocaine use	5	0.6%	Comorbid cocaine use	16	1.9%	2.5%
Psychiatric speech problem (e.g. disorganised speech)	11	1.3%	Psychiatric speech problem	8	0.9%	2.2%
Comorbid stimulants use	11	1.3%	Comorbid stimulants use	7	0.8%	2.1%
Living with peer user	9	1.1%	Living with peer user	7	0.8%	1.9%
Foreign language speaker	8	1.0%	Foreign language speaker	7	0.8%	1.8%
Unmet pain control needs	5	0.6%	Unmet pain control needs	10	1.2%	1.8%

TABLE 3 (Continued)

Primary obstacles	No. of responses	%	Secondary obstacles	No. of responses	%	Combined %
Age of 16–25 years	9	1.1%	Age 16–25 years	1	0.1%	1.2%
Patient unable to afford treatment costs	10	1.2%	Patient unable to afford treatment costs	0	0.0%	1.2%
Patient unable to afford transport costs	9	1.1%	Patient unable to afford transport costs	0	0.0%	1.1%
Diabetes	7	0.8%	Diabetes	2	0.2%	1.0%
Comorbid NPS use	1	0.1%	Comorbid NPS use	5	0.6%	0.7%
Transgenderism/gender dysphoria	0	0.0%	Transgenderism/gender dysphoria	6	0.7%	0.7%
Comorbid pregabalin use	0	0.0%	Comorbid pregabalin use	5	0.6%	0.6%
Unmet psychological care needs	5	0.6%	Unmet psychological care needs	0	0.0%	0.6%
Cancer	1	0.1%	Cancer	2	0.2%	0.3%
Age of 40–60 years	1	0.1%	Age 40–60 years	1	0.1%	0.2%
Service factors	2	0.2%	Service factors	0	0.0%	0.2%
Age of <16 years	1	0.1%	Age of <16 years	0	0.0%	0.1%
Difficulty understanding treatment	0	0.0%	Difficulty understanding treatment	1	0.1%	0.1%

doctors identified this as a secondary obstacle to retention to treatment, as did 13.26% of Support Workers, 10.69% of Psychologists, and 5.59% of Nurses.

Professional group was also associated to statistically significant degree with peripatetic/chaotic lifestyle X^2 (3, n = 486) = 11.59, p = 0.009. 13% of doctors, 8.82% of Support Workers, 4.58% of Psychologists and 3.35% of Nurses identified this as a secondary obstacle to retention.

3.6 | Experience and reported obstacles to retention

To measure the relationships between experience and age and primary and secondary obstacles as reported by respondents we carried out Kruskal-Wallis test. The sample was grouped based on experience ranging from 0 to 5 years, 5–10 years, 10–20 years, 20–30 years, 30+ years.

3.6.1 | Experience and primary obstacles

No statistically significant associations were found between experience and age, gender, comorbid mental health problems, comorbid physical health problems, comorbid substance use, difficulty communicating or understanding treatment, financial difficulties, living with peer user, poor family relationships, unmet health or social care needs, or unstable housing and homelessness.

Significant associations were found between experience and low motivation to change, H (4, n = 492) = 9.47, p = 0.05. Respondents reporting 20–30 years of experience were more likely to identify low motivation as a primary obstacle (mean rank = 268.1) than those with 0–5, 5–10, 10–20 years of experience (mean ranks of 239.3, 242.3, 250.3); and of those with 30+ years of experience (mean rank = 229.5).

Statistically significant associations were also found between experience and peripatetic/chaotic lifestyle as a response preference, H (4, n = 492) = 14.6, p = 0.006. Respondents reporting 30+ years of experience were more likely to identify lifestyle as a primary obstacle to retention (mean rank = 290) than those reporting with 0–5, 5–10, 10–20, or 20–30 years of experience (mean ranks = 264.6, 238.94, 245.82, 242.97).

Finally, service factors were significantly associated with experience H (4, n = 492) = 40.0, p = < 0.001. Respondents with 30+ years of experience were exclusively likely to report service factors (mean rank = 266.5) compared to all other experience groups (mean rank 246.00).

3.6.2 | Experience and secondary obstacles

No statistically significant associations were found for age, gender, comorbid physical health problem, difficulty communicating or understanding treatment, financial difficulties, living with peer users, low motivation to change, other comorbid SUD, poor family relationships, unmet medical or social care needs, or unstable housing and homelessness.

Statistically significant association did exist between years of experience and preference for comorbid mental health problem as secondary obstacle to retention, H (4, n = 492) = 15.08, p = 0.005. Respondents with 5–10 years of experience were most likely to return this preference (mean rank = 262.53) compared to those with 0–5 years of experience (mean rank = 244.38); or those with 10–20, 20–30, or 30+ years (mean ranks = 243.1, 209.3, 209.3).

Significant associations were also identified for years of experience and peripatetic/chaotic lifestyle, H (4, n = 492) = 10.2,

$p = 0.038$. Respondents in the 30+ years of experience group were most likely to identify peripatetic/chaotic lifestyle as a secondary obstacle to retention (mean rank = 291.5) compared to those with 0–5, 5–10, 10–20, and 20–30 years (mean ranks = 256.24, 243.92, 240.4, and 249.3).

A significant association was also found between experience and unstable housing/homelessness, H (4, $n = 492$) = 9.3, $p = 0.05$. Respondents in the 30+ years of experience grouping were more likely to identify this as an obstacle to retention (mean rank = 293.5) than those with 0–5, 5–10, 10–20, or 20–30 years of experience (mean ranks = 245.12, 242.44, 249.32, and 246.5).

4 | DISCUSSION

The findings of this study describe an OUD treating workforce, mostly in their thirties, with a close to equal number of men and women. There were less support worker staff, counsellors or psychotherapists amongst the sample than expected. This may be due to there being less support workers, counsellors or psychotherapists (who are not psychologists by background) employed by drug services than other professional groups, or it is possible that members of the other professional groups were more likely to have a work email address by which to receive the survey link. Exploring why this underrepresentation has occurred would be a useful investigation for further research.

The number of job titles in the sample was considerably higher (9x) than the professional groupings identified. Commentators and researchers within the nursing profession posit that a high number of job titles within healthcare service settings have the potential to be confusing to service users, service providers, and other stakeholders such as commissioning services (Leary et al., 2017; Watson, 2011). Further research to establish the consequences of a high number of job titles in SUD treatment services is welcomed.

In terms of treatments provided, the prevalence of buprenorphine and methadone as the most often reported pharmacological agents used are in keeping with the wider literature concerning the application of medications in the treatment of OUD (Alderks, 2013; Whelan & Remski, 2012). Regional differences were apparent in treatments provided and in measures of retention utilised. UK respondents used behavioural treatments more than their US counterparts. US respondents more often reported using objective methods of measuring retention such as urine toxicology and medication compliance. UK respondents more often reported subjective methods with patient self-report topping the list.

The reasons behind these differences are hard to pinpoint, but it may be that the American approach to the treatment of OUD is more 'medicalised' than the British. We see that UK respondents were more likely to provide behavioural treatments, which are inherently more holistic and less medical than pharmaceutical treatments, and so it may be that social issues (and general poor motivation irrespective of a mental health diagnosis) are more apparent to the SUD treatment service worker speaking to the patient about their problems as part of a behavioural intervention than it is to the SUD treatment service worker providing medication for a problem. Service-user insurance cover and scope of practice limitations may also be a factor. In the case of measures of retention, more objective measures cost more and take more time, whereas patient feedback is quick and low cost. Further research is necessary to shed light on these findings.

In terms of obstacles to retention, studies have found comparatively high prevalence of personality disorders (especially antisocial and borderline/emotionally unstable) amongst people experiencing OUD (Santo et al., 2022; Wojciechowski, 2019), though the proportion of respondents in this study who consider these diagnoses to be obstacles to treatment retention is disproportionate to reported prevalence (Volkert et al., 2018). Low motivation and social problems including interpersonal difficulties were also frequently reported as obstacles to treatment retention. The available literature demonstrates that these problems are often reported by people experiencing OUD (Fernandez et al., 2022; Karow et al., 2008; Pérez-Figueroa et al., 2021) often alongside personality disorder and interpersonal difficulties (Damen et al., 2005; Karow et al., 2008).

Respondents also often reported bipolar disorder, anxiety disorders and schizophrenia as obstacle to retention consistent with the literature (Langdon et al., 2019; Li et al., 2020). In isolation PTSD accounts for less responses than expected, but when PTSD is combined with Other Trauma, the combined proportion of responses is 9.7% of the total, in reflective of a robust body of literature supporting a high prevalence of trauma amongst people with OUD (Levin et al., 2021; Mills et al., 2006; Moustafa et al., 2021).

Comorbid substance use problems were not reported as obstacle to retention as often as expected. Comorbid use of cannabis was the most often reported substance related obstacle to retention, followed by solvent and hallucinogen. These findings are fully congruent with the literature on polydrug use and OUD, where in alcohol cannabis and sedatives are the most common comorbid problem substances in OUD (Hassan & Le Foll, 2019; Moustafa et al., 2021). The comparative infrequency of solvent and hallucinogen use may itself explain why managing these forms of polydrug use presents such an obstacle to treatment retention.

Despite the well documented risk of hepatitis and HIV among people who use heroin (Harrell et al., 2012), in combination these conditions accounted for less than 3% of obstacle responses. Once again, it may be the case that SUD treatment service workers are aided by training and experience and thus are confident in helping people manage their HIV and OUD.

Though neither age or gender were reported as obstacles in any significant frequency, male gender was more often reported as a primary or secondary obstacle compared to female gender, and age of 25–40 years was most often reported as an obstacle in both lists compared to other age groups. This is consistent with the literature concerning differences in problem severity and outcomes between genders in OUD (McHugh et al., 2018; Sordo et al., 2012).

Despite the commonality of dual diagnosis presentations (Ahmad et al., 2001; Langdon et al., 2019; Sørensen et al., 2005), Chi-squared

results suggest that dual diagnosis training specific to certain problem substances could be of use to non-medical SUD treatment service workers (especially support workers and nurses). Similarly, psychologists may benefit from additional support in manging patient difficulty in communicating and/or understanding treatment. Such training packages have been found to be effective in cancer and primary care settings (Haskard et al., 2008), so the evaluation of such a package in substance use settings would be welcome.

Low motivation to change was significantly associated with professional group, with doctors the most likely to identify this as a primary obstacle to retention. All respondents are likely to be familiar with training in motivating patients to adhere to treatment utilising empirical values based methods such as Motivational Interviewing (MI) or Acceptance and Commitment Therapy (ACT) (Bricker & Tollison, 2011). However, based on our results further research into this area is welcomed.

Living with peer user(s) was also significantly associate with professional group, with doctors most likely to choose this preference. Based on these data it would be useful to establish whether or not improved access to training in evidence based couples' treatment for addictions (O'Farrell & Schein, 2000) would be of benefit to SUD treatment service workers.

Our data regarding respondent age and obstacle responses suggest that SUD treatment service workers become more proficient in managing certain obstacles to treatment retention over time, but that motivation to change, lifestyle and housing related obstacles remain challenging. This may be due to these factors remaining independent from SUD treatment service worker skill, or because SUD treatment service workers do not encounter sufficient opportunity to upskill regarding managing these obstacles throughout their careers. Further research to establish why these issues remain as obstacles to retention seemingly irrespective of SUD treatment service worker experience is welcomed.

The findings of this survey study suggest that SUD treatment workers should be familiar with the management of mental health problems, especially those related to personality disorder, and the often-related phenomena of social problems. The mental and social aspects of a SUD presentation should be regarded as clinically relevant in the same sense as the actual substance use behaviour or the physical health consequences of said use. As different professional groups, and differently experienced workers differ in what they understand to be obstacles to treatment retention in OUD, training should reflect these differences. Patients stand to benefit from staff who can help them adhere to evidence-based treatments due to their confidence in tackling the most problematic aspects of the addictions they are experiencing.

5 | LIMITATIONS

The survey had an adequate response size, and an adequate number of responses were applicable to analysis. However, few respondents were based in places other than the USA and the UK. We can therefore draw no conclusions about differences or similarities between US and UK based respondents and those situated elsewhere.

We also under-recruited support staff, counsellors, and psychotherapists, with the latter groups completely absent from our sample. Our inability to apply our findings to these groups due to under representation is a limitation, and so we would welcome further work targeting these staff to learn more about their experiences of providing care to people suffering from addictive disorders.

Question items omitted details which would have been useful in understanding the kinds of OUD related treatments provided by respondents. Respondents were able to say if they provided patients with maintenance medications including methadone and buprenorphine, but were not able to say what kind of preparations they used (e.g. extended release depot buprenorphine injection vs. the same drug in sublingual tablet form).

One example of known erroneous responding was identified as US based respondents reported providing HAT, despite it's illegality in the USA (Gossop et al., 2005). It is therefore possible that there are other erroneous responses amongst the data.

The survey design could be criticised for being over engineered to the point where the multiple layers of response possible, and the freedom for respondents to choose multiple response to certain items, made analysis difficult and time consuming.

6 | CONCLUSIONS

US-based SUD treatment service workers appear to provide behavioural treatment for OUD patients considerably less than UK-based SUD treatment service workers. They more often use objective measures of treatment retention and are less likely to consider social difficulties as obstacles to retention.

SUD treatment service workers reported that personality disorders represented the most often experienced obstacles to treatment retention amongst patients with OUD. The responses of the whole sample reflected how mental health and social problems were the most often experienced obstacles to retention to treatment for OUD. These problems were considerably more often reported than comorbid drug problems or physical health problems.

Statistically significant relationships exist between professional group and obstacles reported, as were years of experience. If a workforce varies by professional background and years of experience in what it considers to be obstacles to treatment retention, then that workforce stands to benefit from a targeted approach to additional training needs that discriminates based on professional background and years of experience. A multidisciplinary workforce in SUD treatment is necessary to meet needs of the patient population and so uniformity in professional background is not desirable. A uniformity in confidence and ability to manage common obstacles to treatment retention on the other hand is a desirable proposition. We recommend the development of training tailored to SUD worker populations based on background and experience and evaluation of this approach in terms of worker and patient outcomes.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest related to the current study.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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REFERENCES

Ahmad, B., Mufti, K. A., & Farooq, S. (2001). Psychiatric comorbidity in substance abuse (opioids). *JPMA Journal Philippine Medical Association*, *51*(5), 183–186.

Alderks, C. E. (2013). Trends in the use of methadone, buprenorphine, and extended-release naltrexone at substance abuse treatment facilities: 2003-2015 (update). [Internet]. In *The CBHSQ report*. Rockville (MD): Substance Abuse and Mental Health Services Administration (US). Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK469748/

American Psychiatric Association *Diagnostic and statistical manual of mental disorders* (5th ed.). (DSM-5): Amazon.co.uk: American Psychiatric Association. Retrieved from https://www.amazon.co.uk/Diagnostic-Statistical-Manual-Mental-Disorders/dp/0890425558

Bricker, J., & Tollison, S. (2011). Comparison of motivational interviewing with acceptance and commitment Therapy: A conceptual and clinical review. *Behavioural and Cognitive Psychotherapy*, *39*(5), 541–559. https://doi.org/10.1017/s1352465810000901

Chakrabarti, S. (2014). What's in a name? Compliance, adherence and concordance in chronic psychiatric disorders. *World Journal of Psychiatry*, *4*(2), 30–36. https://doi.org/10.5498/wjp.v4.i2.30

Cochran, W. G., & Cochran, W. G. (1977). *Sampling techniques* (p. 456). Wiley.

Damen, K. F. M., DeJong, C. A. J., Nass, G. C. M., VanderStaak, C. P. F., & Breteler, M. H. M. (2005). Interpersonal aspects of personality disorders in opioid-dependent patients: The convergence of the ICL-R and the SIDP-IV. *European Addiction Research*, *11*(3), 107–114. https://doi.org/10.1159/000085545

Fernandez, S. B., Lopez, C., Ibarra, C., Sheehan, D. M., Ladner, R. A., & Trepka, M. J. (2022). Examining barriers to medication adherence and retention in care among women living with HIV in the face of homelessness and unstable housing. *International Journal of Environmental Research and Public Health*, *19*(18), 11484. https://doi.org/10.3390/ijerph191811484

Gossop, M., Keaney, F., Sharma, P., & Jackson, M. (2005). The unique role of diamorphine in British medical practice: A survey of general practitioners and hospital doctors. *European Addiction Research*, *11*(2), 76–82. https://doi.org/10.1159/000083036

Guerci, B., Chanan, N., Kaur, S., Jasso-Mosqueda, J. G., & Lew, E. (2019). Lack of treatment persistence and treatment nonadherence as barriers to glycaemic control in patients with type 2 diabetes. *Diabetes Therapy*, *10*(2), 437–449. https://doi.org/10.1007/s13300-019-0590-x

Harrell, P. T., Mancha, B. E., Petras, H., Trenz, R. C., & Latimer, W. W. (2012). Latent classes of heroin and cocaine users predict unique HIV/HCV risk factors. *Drug and Alcohol Dependence*, *122*(3), 220–227. https://doi.org/10.1016/j.drugalcdep.2011.10.001

Haskard, K. B., Williams, S. L., DiMatteo, M. R., Rosenthal, R., White, M. K., & Goldstein, M. G. (2008). Physician and patient communication training in primary care: Effects on participation and satisfaction. *Health Psychology*, *27*(5), 513–522. https://doi.org/10.1037/0278-6133.27.5.513

Hassan, A. N., & Le Foll, B. (2019). Polydrug use disorders in individuals with opioid use disorder. *Drug and Alcohol Dependence*, *198*, 28–33. https://doi.org/10.1016/j.drugalcdep.2019.01.031

Horne, R., Chapman, S. C. E., Parham, R., Freemantle, N., Forbes, A., & Cooper, V. (2013). Understanding patients' adherence-related beliefs about medicines prescribed for long-term conditions: A meta-analytic review of the necessity-concerns framework. *PLoS One*, *8*(12), e80633. https://doi.org/10.1371/journal.pone.0080633

Karow, A., Verthein, U., Krausz, M., & Schafer, I. (2008). Association of personality disorders, family conflicts and treatment with quality of life in opiate addiction. *European Addiction Research*, *14*(1), 38–46. https://doi.org/10.1159/000110409

Langdon, K. J., Dove, K., & Ramsey, S. (2019). Comorbidity of opioid- and anxiety-related symptoms and disorders. *Current Opinion Psychology*, *30*, 17–23. https://doi.org/10.1016/j.copsyc.2018.12.020

Langdon, K. J., Ramsey, S., Scherzer, C., Carey, K., Ranney, M. L., & Rich, J. (2020). Development of an integrated digital health intervention to promote engagement in and adherence to medication for opioid use disorder. *Addiction Science & Clinical Practice*, *15*(1), 16. https://doi.org/10.1186/s13722-020-00189-4

Leary, A., Maclaine, K., Trevatt, P., Radford, M., & Punshon, G. (2017). Variation in job titles within the nursing workforce. *Journal of Clinical Nursing*, *26*(23–24), 4945–4950. https://doi.org/10.1111/jocn.13985

Levin, Y., Lev Bar-Or, R., Forer, R., Vaserman, M., Kor, A., & Lev-Ran, S. (2021). The association between type of trauma, level of exposure and addiction. *Addictive Behaviors*, *118*, 106889. https://doi.org/10.1016/j.addbeh.2021.106889

Li, K. J., Chen, A., & DeLisi, L. E. (2020). Opioid use and schizophrenia. *Current Opinion in Psychiatry*, *33*(3), 219–224. https://doi.org/10.1097/yco.0000000000000593

McHugh, R. K., Votaw, V. R., Sugarman, D. E., & Greenfield, S. F. (2018). Sex and gender differences in substance use disorders. *Clinical Psychology Review*, *66*, 12–23. https://doi.org/10.1016/j.cpr.2017.10.012

Mills, K. L., Teesson, M., Ross, J., & Peters, L. (2006). Trauma, PTSD, and substance use disorders: Findings from the Australian national survey of mental health and well-being. *American Journal of Psychiatry*, *163*(4), 652–658. https://doi.org/10.1176/ajp.2006.163.4.652

Moustafa, A. A., Parkes, D., Fitzgerald, L., Underhill, D., Garami, J., Levy-Gigi, E., Stramecki, F., Valikhani, A., Frydecka, D., & Misiak, B. (2021). The relationship between childhood trauma, early-life stress, and alcohol and drug use, abuse, and addiction: An integrative review. *Current Psychology*, *40*(2), 579–584. https://doi.org/10.1007/s12144-018-9973-9

O'Farrell, T. J., & Schein, A. Z. (2000). Behavioral couples Therapy for alcoholism and drug abuse. *Journal of Substance Abuse Treatment*, *18*(1), 51–54. https://doi.org/10.1016/s0740-5472(99)00026-4

Parpouchi, M., Moniruzzaman, A., Rezansoff, S. N., Russolillo, A., & Somers, J. M. (2017). Characteristics of adherence to methadone maintenance treatment over a 15-year period among homeless adults experiencing mental illness. *Addiction Behavior Reports*, *6*, 106–111. https://doi.org/10.1016/j.abrep.2017.09.001

Pérez-Figueroa, R. E., Obonyo, D. J., Santoscoy, S., Surratt, H., Lekas, H. M., Lewis, C. F., Lyons, J. S., & Amesty, S. C. (2021). Housing instability,

structural vulnerability, and non-fatal opioid overdoses among people who use heroin in Washington heights, New York city. *Behavioral Medicine*, *0*(0), 1–11. https://doi.org/10.1080/08964289.2021.1922347

Qualtrics [Internet]. (2023). Qualtrics XM - experience management software. Retrieved from https://www.qualtrics.com/

Roseborough, D. J., McLeod, J. T., & Wright, F. I. (2016). Attrition in psychotherapy: A survival analysis. *Research on Social Work Practice*, *26*(7), 803–815. https://doi.org/10.1177/1049731515569073

Santo, T., Campbell, G., Gisev, N., Martino-Burke, D., Wilson, J., Colledge-Frisby, S., Clark, B., Tran, L. T., & Degenhardt, L. (2022). Prevalence of mental disorders among people with opioid use disorder: A systematic review and meta-analysis. *Drug and Alcohol Dependence*, *238*, 109551. https://doi.org/10.1016/j.drugalcdep.2022.109551

Sordo, L., Chahua, M., Bravo, M. J., Barrio, G., Brugal, M. T., Domingo-Salvany, A., Molist, G., & De la Fuente, L. (2012). Depression among regular heroin users: The influence of gender. *Addictive Behaviors*, *37*(1), 148–152. https://doi.org/10.1016/j.addbeh.2011.09.009

Sørensen, H. J., Jepsen, P. W., Haastrup, S., & Juel, K. (2005). Drug-use pattern, comorbid psychosis and mortality in people with a history of opioid addiction. *Acta Psychiatrica Scandinavica*, *111*(3), 244–249. https://doi.org/10.1111/j.1600-0447.2004.00445.x

SPSS Statistics - United Kingdom [Internet]. (2018). Retrieved from https://www.ibm.com/uk-en/products/spss-statistics

Stam, N. C., Gerostamoulos, D., Smith, K., Pilgrim, J. L., & Drummer, O. H. (2019). Challenges with take-home naloxone in reducing heroin mortality: A review of fatal heroin overdose cases in victoria, Australia. *Clinical Toxicology*, *57*(5), 325–330. https://doi.org/10.1080/15563650.2018.1529319

Trafton, J. A., Humphreys, K., Harris, A. H. S., & Oliva, E. (2007). Consistent adherence to guidelines improves opioid dependent patients' first year outcomes. *The Journal of Behavioral Health Services & Research*, *34*(3), 260–271. https://doi.org/10.1007/s11414-007-9074-2

VanGeest, J. B., Johnson, T. P., & Welch, V. L. (2007). Methodologies for improving response rates in surveys of physicians: A systematic review. *Evaluation & the Health Professions*, *30*(4), 303–321. https://doi.org/10.1177/0163278707307899

Volkert, J., Gablonski, T. C., & Rabung, S. (2018). Prevalence of personality disorders in the general adult population in western countries: Systematic review and meta-analysis. *British Journal of Psychiatry*, *213*(6), 709–715. https://doi.org/10.1192/bjp.2018.202

Watson, A. C. (2011). Finding common ground in case management: New titles and terminology along the health care continuum. *Professional Case Management*, *16*(2), 52–54. https://doi.org/10.1097/ncm.0b013e318209a01a

Whelan, P. J., & Remski, K. (2012). Buprenorphine vs methadone treatment: A review of evidence in both developed and developing worlds. *Journal of Neurosciences in Rural Practice*, *3*(1), 45–50. https://doi.org/10.4103/0976-3147.91934

Wojciechowski, T. (2019). Borderline personality disorder symptoms and exposure to violence as risk factors for opioid use in adulthood. *Psychiatry Research*, *281*, 112549. https://doi.org/10.1016/j.psychres.2019.112549

Wolff, K. (2002). Characterization of methadone overdose: Clinical considerations and the scientific evidence. *Therapeutic Drug Monitoring*, *24*(4), 457–470. https://doi.org/10.1097/00007691-200208000-00001

Zhou, K., Li, H., Wei, X., Li, X., & Zhuang, G. (2017). Medication adherence in patients undergoing methadone maintenance treatment in Xi'an, China. *Journal of Addiction Medicine*, *11*(1), 28–33. https://doi.org/10.1097/adm.0000000000000263

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