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A systematic review of attachment and substance misuse: measurement and outcomes for clinical samples; and a grounded theory study: how non-treatment seeking substance users make sense of their behaviour

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Research Portfolio Abstract

Background/aims

Attachment theory has become widely used to understand interpersonal difficulties and psychological distress in clinical practice. Individuals who have difficulties with substance misuse are thought to be more likely to have an insecure attachment style. Thus, display difficulties with emotion regulation and relating to themselves and others in a helpful way. This in turn is likely to impact on their expression of distress and their ability to engage with services.

Policy and research has aimed to identify links with substance use and attachment and identify barriers to treatment retention and engagement. However, methodological difficulties related to measurement of attachment or only focusing on the views of individuals who have already accessed treatment, make it difficult to generalise the results. Therefore, this thesis aimed to systematically review literature exploring attachment, substance misuse and levels of psychological distress. Focusing on what assessment measures were used, what attachment profiles are linked to this population and any associations with psychological distress. In addition, it aimed to construct a grounded theory model of how non-treatment seeking individuals who use substances, make sense of their behaviour.

Methods

Two studies were conducted to address the research aims. Journal article 1 is a systematic review of the literature on attachment, substance misuse and psychological distress in clinical populations. Electronic databases were searched and any relevant published literature was identified and assessed for quality before the results were synthesised and combined narratively. Journal article 2 is a qualitative grounded theory study in the form of eight in depth interviews with non-treatment seeking individuals who use substances. Data was collected and analysed simultaneously to identify theoretical categories which were explored and expanded upon during subsequent interviews.

Results

Twenty-three studies were identified during the systematic review. Results indicate a general link between substance misuse, an insecure attachment style and increased psychological distress. However, heterogeneity in relation to measurement and samples and an overrepresentation of self-report measures limit the generalisability of the results. The findings from the second study suggest that identity and relational variables influence treatment decisions for individuals who use substances.

Conclusions

The study provides further evidence for the link between attachment insecurity and substance misuse. Reported levels of psychological distress varied between different patterns of insecure attachment which may reflect under reporting of symptoms. This has important research and practice implications on being able to meet the needs of these individuals appropriately. The results also highlight the need to consider identity and relational factors in service design to improve treatment engagement and retention.

Lay Summary

A significant number of people who experience difficulties during childhood such as abuse and neglect go on to develop problems with substance misuse. Understandably, these individuals may also have difficulties with trusting others and managing their emotions, making building healthy relationships difficult. Attachment theory is often used to make sense of the link between these childhood experiences and later problems with substance misuse and relationships. It is recognised that individuals may use substances as a way to cope with their emotions when they have not had the opportunity to learn this through relationships in childhood. However, the research exploring the link between attachment and substance use is difficult to generalise due to the variety of measures used to assess attachment and differences between people who use substances. It is also acknowledged that because of their difficulties with relationships, these individuals often don't access support in relation to their substance use. Due to this, this thesis aimed to review current research that has explored the link between substance use, attachment and levels of distress with individuals who access substance misuse services. In addition, in-depth interviews were carried out with eight individuals who were using substances and not accessing help to stop, with the aim of exploring how they made sense of their behaviour. Results showed that the majority of individuals who access substance misuse services show an insecure attachment style i.e. they have difficulties managing their emotions independently and relating to other people and themselves in a helpful way. These individuals also reported higher levels of distress. However, it was noted that some individuals who have an insecure attachment style may cope with this in a dismissing or avoidant way i.e. may under-report their distress. Findings also show that people who use substances talk about using them to manage difficult thoughts, feelings and behaviours. They also describe substances being easy to access and used widely within the communities they live in. Being part of this community is linked to who they are, particularly when they feel disconnected from wider society due to their substance use. These findings suggest that identity and relationships impact on individual's decisions to get help for their substance use; and services can be improved further to promote their engagement.

Journal article 1: Systematic Review[3]

A systematic review of attachment and substance misuse: measurement and outcomes for clinical samples

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A systematic review of attachment and substance misuse: measurement and outcomes for clinical samples

Abstract

Purpose

Attachment theory has become widely used to understand interpersonal difficulties and psychological distress in clinical practice. The theoretical connection between attachment and substance misuse has long been acknowledged within the research and clinical field. Despite this, a number of methodological issues have affected the ability to generalise the findings and no previous reviews have explored the links with psychological distress. The aim of the current review was to identify, summarise and critically evaluate articles that have explored attachment, substance misuse and psychological distress within clinical populations.

Methods

Searches were conducted on EMBASE, MedLine, PsychINFO, ASSIA and CINAHL to identify studies exploring attachment, substance misuse and psychological distress within clinical populations.

Results

Twenty-three papers were identified. Attachment insecurity was linked to substance misuse and increased psychological distress. Levels of psychological distress varied between insecure attachment patterns. Individuals with an avoidant or dismissing attachment style reported lower levels of distress compared to those with an anxious attachment style. Methodological issues included heterogeneity of assessment measures and an over representation of self-report tools. Research and clinical implications are discussed in light of the results.

Conclusions

This review provides further support for the link between attachment insecurity and substance misuse. In addition, it indicates that attachment influences the expression of psychological distress and this varies between patterns of attachment insecurity. The findings in this review provide further support for an attachment focused framework for treatment of substance misuse.

Practitioner Points

- The findings from this review have important implications for engagement and treatment within substance misuse services
- Self-report measures of distress should be interpreted within the context of an attachment based formulation

- **Key Words:** attachment, substance misuse, systematic review

Introduction

Policy context

There is considerable evidence that traumatic experiences in childhood lead to an increased vulnerability to health and social problems across the lifespan (Austin & Shanahan, 2018; Bellis et al, 2014; Gutierres & Van Puymbroeck, 2006). This increased awareness has helped shape government policy in Scotland to create a trauma informed approach to respond to those in need (NHS Education for Scotland, 2017). It is also recognised that experiencing childhood trauma increases the risk of adult substance misuse (Scottish Government, 2018). Most individuals attending substance misuse services in Scotland report a history of trauma and are at increased risk of experiencing additional trauma (NHS Education for Scotland, 2018).

Attachment theory

Attachment theory has helped to aid understanding of the long-term interpersonal impact of childhood trauma by describing the early interaction between a child and their caregiver and how these experiences are internalised to influence future expectations of others (Fraley, 2002). Attachment theory can also provide a developmental perspective of affect regulation (Bowlby, 1980). A caregiver who creates an environment where the infant feels secure is considered as a "safe base". This gives the infant confidence to explore beyond that relationship and leads them to seek comfort and feel reassured when they return to the caregiver. This teaches the infant to regulate their emotions and develop their own coping strategies to manage adversity and distress. As adults, securely attached individuals would be expected to have internalised a well-rounded and generally positive view of themselves and others. This allows them to value and build secure attachments with other individuals beyond their initial caregivers. They would be more likely to show resilience to adversity by reflecting on and regulating their emotions autonomously without being over reliant on others. In contrast, infants who are insecurely attached will show a different pattern of interaction and may attempt to regulate their emotions in an unhelpful way. Insecure infants with a preoccupied/ambivalent attachment style are likely to experience intense feelings of anxiety and distress leading to fear of exploring beyond the caregiver. As adults they may become over reliant on others to manage their emotional distress and be hypervigilant to all aspects of their attachment experiences. Insecure infants with an avoidant attachment style will not value closeness with the caregiver and as adults will avoid building close and meaningful attachments with others. Evidence suggests that insecure attachment is a significant risk factor for adult social and psychological problems including substance misuse (Borhani, 2013; Fairbairn et al, 2018; Kreis et al, 2016; Schindler et al, 2007).

Attachment and substance misuse

Attachment theory has become widely used to understand interpersonal difficulties and psychological distress in multiple clinical populations including substance misuse (Barazzone et al, 2019; Gumley et al, 2014; Korver-Nieberg et al, 2014). Previous research has suggested a number of similarities between individual's interactions with attachment figures and their

use of substances (Burkett & Young, 2012). For example, becoming excited and euphoric when reunited with an attachment figure and becoming distressed and agitated when apart (Bowlby, 1980). A similar pattern of responding has been described in the context of substance misuse. Individuals will often describe preoccupation and suffering when they are without substances and extreme anticipation and pleasure immediately prior to and during use (Fairbairn et al, 2018). In light of this, attachment theory has been used to argue the "self-medication" hypothesis of substance misuse (Khantzian, 1997; Tronnier, 2015). The hypothesis suggests that as with an attachment figure, substances act as an external means to regulate emotions by soothing negative affect and managing psychological states (Suh et al, 2008). Furthermore, they may also act as a substitute for the "secure base" as they provide a sense of perceived predictability and safety in relation to their affect regulating effects. The authors also note that the physiological aspects of substance use also contribute to their reinforcement value. For example; avoidance of physical and emotional pain and the ability to reduce negative self-awareness (Fairbairn et al, 2018). This would suggest that individuals with insecure attachment styles may be vulnerable to developing substance misuse problems due to unmet emotional needs and underdeveloped emotion regulation skills (Schindler, 2019).

The self-medication hypothesis would also suggest that individuals may use specific substances to regulate different kinds of emotions. On this basis it may be expected that stimulants may be used to increase social connection and closeness and opiates and sedatives would be used to disconnect and distance. Previous reviews investigating the relationship with different substances and attachment styles have been inconclusive, however, provide some evidence for a link between heroin use and extremely insecure attachment styles (Schindler, 2019).

The theoretical connection between attachment and substance misuse has long been acknowledged within the research and clinical field. Research has explored the attachment behaviours of a variety of individuals experiencing substance misuse difficulties including; parents (De Palo et al, 2014; Shieh & Kravitz, 2002), young adults (Bell et al, 2000; McNally et al, 2003; Schindler et al, 2007), incarcerated women (Gasior, 2017) and veterans (Owens et al, 2014). Although research suggests a link between insecure attachment styles and substance misuse, previous reviews have identified methodological issues when attempting to synthesise the findings (Schindler, 2019). These include different attachment measures being used, heterogeneous samples with varied substance use and severity which impacts on the generalisability of these results to other substance using populations. The question of whether

A quantitative review conducted by Madigan et al (2015) examined the association between attachment and "externalising problems" (including substance use) by conducting a meta-analysis. The results indicated an association between attachment and externalising behaviour, however, only included individuals up to the age of 18 years old. It has been

suggested that the link between substance misuse and attachment is particularly strong within this age group due to the developmental phase (Schindler, 2019). In light of this, the appropriateness of generalising this to other age groups remains unclear.

A recent meta-analysis by Fairbairn et al. (2018) explored the link between attachment and substance use in longitudinal studies, across age groups. The findings suggested that attachment significantly predicted later substance use and this effect was significantly larger than that of early substance use in predicting later attachment. The author's note that although this result does not necessarily indicate a causal relationship, it suggests insecure attachment is a significant vulnerability factor for later substance use. They also state that the mechanism that explains the association remains unclear. The current review aims to find further evidence for the general link between attachment and substance misuse whilst also considering the links with attachment and important clinical outcomes.

Attachment and psychological distress

To the author's knowledge, no systematic review of the association between attachment and substance misuse has also explored the relationship between attachment and psychological symptoms or distress. Gumley et al. (2014) conducted a review and found insecure attachment to be moderately associated with more positive and negative symptoms of psychosis and higher levels of depression. They postulated that if considering an individual's attachment style as a pattern of adaptation and coping in relation to early traumatic experiences then these patterns would also influence psychiatric symptoms and outcomes related to psychological distress.

Although Schindler (2019) did not address psychological distress or symptoms specifically they highlighted the importance of considering comorbidity of other psychiatric conditions as a potential mediator of the relationship between attachment and substance use. The review indicated that there was some evidence for differences in attachment patterns between substance misuse populations with differing comorbidities and potentially different levels of psychological distress. However, it was noted the evidence base is still too small to draw any specific conclusions.

A recent review conducted by Barazzone et al. (2019) explored the relationship between attachment and post-traumatic stress (PTS). They identified that individuals with fearful/unresolved attachment tended to display more severe PTS symptoms in comparison to other attachment styles which was consistent with previous reviews (Woodhouse et al, 2015). They also reported that individuals with higher attachment anxiety reported higher levels of PTS than individuals with avoidant attachment styles. They theorised that individuals with an anxious attachment may be more "threat focused" and likely to report distress in comparison with individuals with an avoidant attachment. In contrast, individuals with a more a dismissing attachment style may be expected to under report their levels of distress and therefore be less likely to engage with services aimed at addressing their psychological

needs. They also identified that it was unclear whether a dismissing attachment style acted as a protective factor for PTS or whether this indicated the lack of sensitivity of the measure in being able to capture the full impact of trauma within this population.

Previous research provides tentative evidence for a positive correlation between attachment insecurity and psychological distress; however, a more systematic exploration is required. In the current review, the term psychological distress was used broadly to combine measurements of psychological symptoms (e.g. low mood, anxiety, anger, paranoid ideation) and those which measure a patients experience of distress. This approach was adopted instead of focusing solely on measurements of distress to increase the likelihood of identifying appropriate literature. The authors note that the concept of distress differs from that of psychological symptoms as distress is generally used to describe a state of emotional suffering which may or may not be linked to a diagnosable psychiatric disorder.

Understanding this relationship is important, as if we recognise attachment styles as a way of adapting and coping, they will also impact expression of distress and in turn, recovery (Gumley et al, 2014). Substance misuse services must therefore understand how to appropriately interpret and respond to expressions of distress within an attachment context to appropriately meet the needs of individuals they support.

Justification of current study

Although the evidence base suggests that attachment is an important consideration for understanding and treating psychological distress and substance misuse, the relationship appears to be complex. The current review will look for a replication of the general link between substance misuse and attachment insecurity but specifically within a clinical sample. By exploring the characteristics of the measures used, this will also allow consideration of methodological aspects and implications on results. Lastly, by including psychological distress outcomes within the review this adds a more meaningful picture of the association between attachment and substance use including; implications for clinical practice and future research in relation to the mechanism underlying the association.

Aims

The aim of the current review is to identify, summarise and critically evaluate articles that have explored attachment, substance misuse and psychological distress within clinical populations. The following questions will be addressed:

- What are the characteristics of studies which have investigated attachment and outcomes in relation to psychological distress in a substance misuse population?

- What measures have been used to assess attachment and psychological distress?

- What attachment profiles are associated with the populations in these studies?

- What is the evidence for an association between attachment and outcomes related to psychological distress?

Method

Search strategy

A systematic review was carried out during October 2019 by searching online databases for literature related to attachment and substance misuse. A review protocol was registered with PROSPERO prior to data extraction (see Appendix 2). The following databases were selected EMBASE, MedLine, PsychINFO, ASSIA and CINAHL after identifying which were used in substance misuse literature and consulting an Academic Support Librarian. The search was limited to the period 1978 to present day to coincide with the introduction of the first measure to assess infant-parent attachment, the Ainsworth et al. (1978) strange situation paradigm. The databases were searched using the following search terms "substance* abus*" or "substance* addict*" or "substance* dependen*" or "drug abus*" or "drug addict*" or "drug dependen*" or "alcohol abus*" or "alcohol addict*" or "alcohol dependen*" or "substance* misus*" or "drug misus*" or "alcohol misus*" and "attachment". The search terms could appear anywhere in the document except only the main text. Duplicates were removed and titles, and abstracts were screened to assess their suitability for inclusion in the review.

The lead author read the full texts of each article identified and made decisions regarding inclusion/exclusion. The papers identified in the final search were checked against records from an initial scoping exercise to ensure all relevant literature had been included. Reference lists and citation searches were also completed for all included studies. The following inclusion and exclusion criteria were applied during the selection stage:

Inclusion

1. Studies that include clinical populations for example; individuals with a diagnosis of a substance use disorder (SUD) or receiving inpatient or outpatient treatment related to their substance use;

2. Studies using a validated measure of attachment;

3. Studies using a validated measure of psychological distress or symptoms

4. Peer reviewed

Exclusion

1. Papers not published in English

2. Papers that do not include primary data (e.g. systematic review)

Data extraction

Data was extracted from the studies selected for inclusion by the lead author and included; author, year of publication, country, participant characteristics (e.g. age, gender), setting (e.g. inpatient, community), attachment measure, attachment measure constructs, sample size, psychological distress outcome measures and key findings. The data was then entered into a spread sheet using Microsoft Excel.

Quality criteria

All eligible studies for inclusion were rated on quality and risk of bias by the first author, with a proportion being independently rated by a second party. Any disagreements were resolved through discussion until an agreement was reached. An adapted version of the National Institute for Health and Care Excellence (NICE) quality appraisal checklist for quantitative studies reporting correlations and associations was used to assess study aims, designs, attachment and psychological distress measures and analyses (NICE, 2012; see Appendix 3 for quality appraisal tool). The first section of the tool addresses internal consistency by assessing how well the population have been described and how representative they are to the source population. The remaining sections of the tool addresses external consistency by assessing the appropriateness of the outcomes explored in addressing the research question and the properties of the outcome measures. In addition, the tool assesses the appropriateness of the method of analysis including whether all appropriate variables have been considered. The overall rating provides a combined assessment of how well the study addressed internal and external validity.

Data synthesis

Due to the heterogeneous nature of the data in relation to measures of attachment, psychological distress and analytic approaches, a narrative synthesis was conducted. Findings were synthesised in relation to study outcomes (e.g. attachment styles and psychological distress).

Results

Study Selection

The search described above initially identified 1814 records. After duplicates were removed and exclusion criteria applied, 23 records remained. The search process and reasons for exclusion are summarised in Figure 1 below.

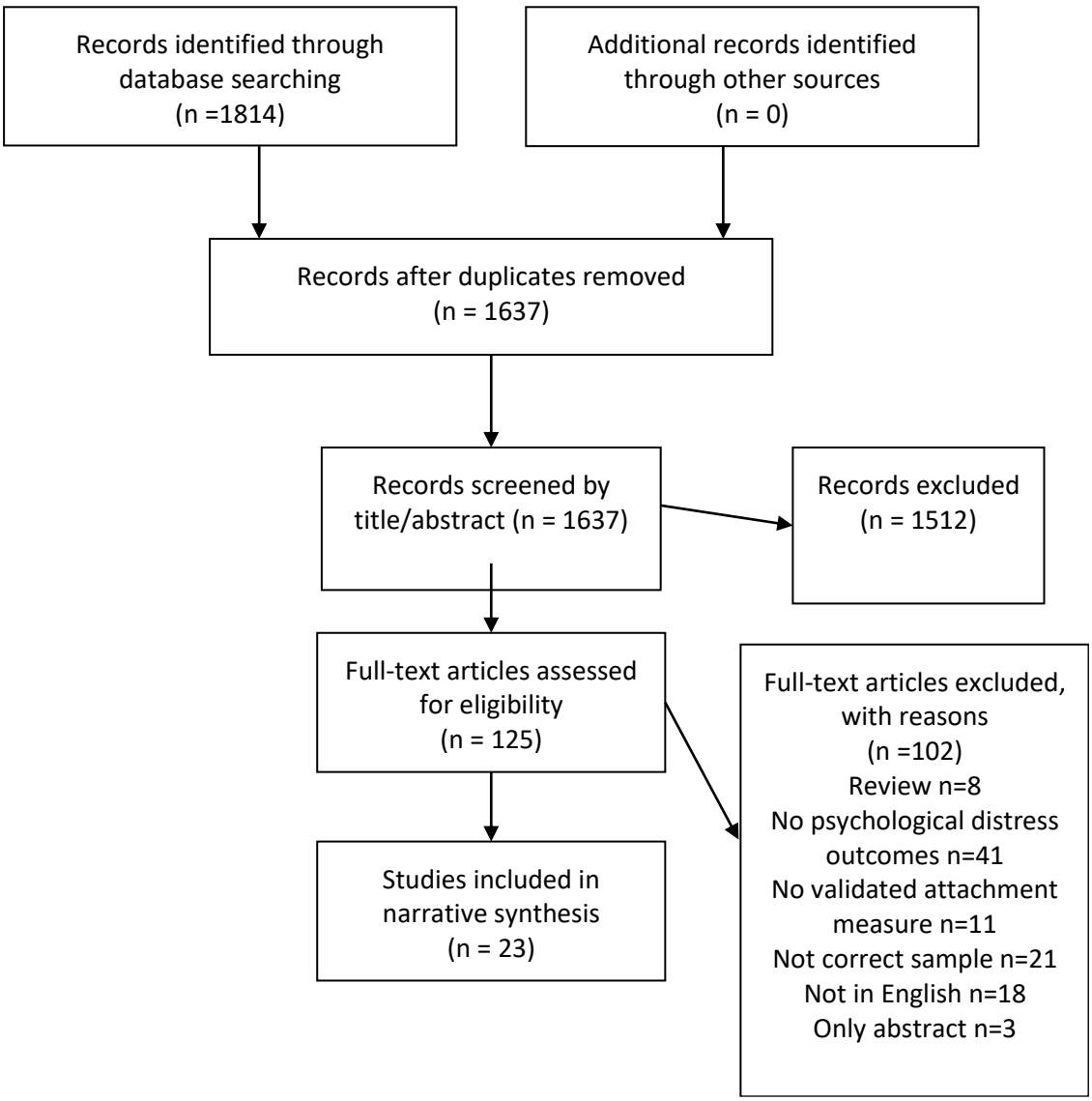

Figure 1 PRISMA flowchart of search and exclusion process (Moher et al; 2009)

Characteristics of Included Studies (table 1)

There were a total of 2239 participants in the included studies. Based on data from 21 studies, the mean age of the participants was 29.9 years (range of 13.1-73 years), 59.3% were male (n=1222) and 40.7% (n=838) were female. No specific data for gender or age was provided for 179 participants (7.9%; Owens et al, 2014; Potik et al, 2014).

Recruitment sites varied across the studies and included; inpatient/residential substance misuse services in 12 studies (59.5% n=1333), outpatient/community substance misuse services in five studies (13.3% n=297), a general psychiatric inpatient service in one study (2.7% n=60), combined inpatient and outpatient substance misuse services in two studies (16.1% n=359), a prison in one study (3.3% n=75) and two studies did not report whether the service was inpatient or outpatient (5.1% n=115).

Most of the studies (17) did not specifically focus on drug or alcohol misuse and considered problematic substance use holistically (83.9% n=1876). Three of the studies focused only on problematic alcohol use (8.9% n=200), one specifically on opioid, cannabis or cocaine dependence (1.8% n=40) and two on heroin use only (5.5% n=123).

Most studies (12) did not specify diagnostic criteria for participants in terms of their substance use (59.8% n=1338). One stated that participants met diagnostic criteria for opioid, cannabis or cocaine dependence (1.8% n=40) but did not state how this was assessed. Six studies required participants to meet DSM-IV criteria in relation to problematic substance use (28.5% n=639) two required participants to meet criteria for ICD-10 alcohol dependence (4.4% n=99) and two required participants to have a primary DSM-IV diagnosis of heroin dependence (5.5% n=123).

Study	Country	Participant No.	Design	Setting	Age (years) Gender	Attachment measures	Outcome measures	Key findings (attachment and psychological distress)	Quality rating
Delvecchio et al (2016)	Italy	40	Non-comparative, cross-sectional study	Residential drug rehab centre	M=32.3 (SD=9.4) 28 m/12 f	Adult Attachment Projective Picture System (AAP)	GHQ-28	Unresolved scored higher on anxiety (z=-2.60, p=0.009) and depression (z=-1.95, p=0.049) than resolved	Adequate
De Palo et al (2014)	Italy	30	Non-comparative, cross-sectional study	Residential therapeutic community	M=30 (SD=6.5) 0 m/30 f	Adult Attachment Interview (AAI)	SCL-90-R	Scores on the SCL-90 did not reach the clinical range (T=65), however, the preoccupied (58.29) and unresolved (61.30) groups scored higher in comparison to dismissing (53.56) or secure (51.25)	Poor
De Rick et al (2009)	Belgium	101	Non-comparative, cross-sectional study	Inpatient	M=43.9 (23-64) 71 m/30 f	Adult Attachment Questionnaire (AAQ)	STAI, BDI	Attachment groups differed on trait but not state anxiety (Wald=5.48; p<.05; estimate=-6.854) with insecure attachment and poor emotion regulation group scoring the highest (exact scores not reported)	Adequate
Diaz , Horton and Malloy (2014)	USA	77	Non-comparative, cross-sectional study	Residential substance abuse treatment centre	M=33.6 (SD=11.7) 43 m/34 f	Relationship questionnaire (RQ)	CES-D	RQ significant predictor of depressive symptoms (p<.01), insecure attachment was associated with higher levels of depressive symptoms when compared to secure	Adequate
Doumas et al (2008)	USA	46	Cross-sectional study with non-clinical control	Intensive outpatient program	M=38 (20-73) 24 m/22 f	Relationship questionnaire (RQ)	BDI, BAI	Attachment related to **BDI** ($F(3, 41) = 31.12$, $p<.001$), fearful (21.5) and preoccupied (21.9) higher than dismissing (7.1) and secure (7.3). **BAI** showed differences between groups ($F(3, 41) = 15.71$, $p<.001$), with fearful (20.8) and preoccupied (21.7) scoring higher than dismissing (5.8) and secure (7.9)	Adequate
Fowler et al (2013)	USA	187	Cohort study	Inpatient	M=30.8 (SD=12.1) 89 m/98 f	Relationship questionnaire (RQ)	BDI-II	Did not report association between BDI-II and RQ	Adequate
Gasior (2017)	Poland	75	Cohort study	Prison	M=38.2 (21-65) 0 m/75 f	Adult Attachment Scale (AAS)	TSI - 2	Anxious attachment positively correlated with symptoms of PTSD ($r^2 = 0.54$ $\beta = 0.38$ $p=<0.01$)	Adequate
Gidhagen et al (2018)	Sweden	108	Pre and post study	Outpatient treatment centres	M=34.9 (16-69) 83 m/25 f	Experiences in Close Relationships Short Form (ECR-S)	CORE-OM	CORE-OM total scores related to attachment ($F(3, 33) = 8.13$, $p<.001$). Fearful higher CORE-OM scores than secure ($p<.001$) and preoccupied higher CORE-OM scores than secure ($p=.042$)	Adequate

Haggerty et al (2015)	USA	180	Non-comparative, cross-sectional study	Inpatient chemical dependency rehab unit	M=34.8 (SD=11.1) 113 m/67 f	Relationship profile test (RPT) Experiences in Close Relationships Short Form (ECR-S)	SCL-90-R	Association between anxious attachment and SCL-90-R scores (r=.45; P<.001), secure attachment showed the opposite pattern (r=-4.3; p<.001)	Adequate
Kerlin (2017)	USA	91	Pre and post study	Residential SUD program	M=36.5 (SD=11.5) 0 m/91 f	Experiences in close relationships short form (ECR-S)	SCL-90-R	Did not report association between ECR-S and SCL-90-R	Adequate
Keskin and Gumus (2017)	Turkey	289	Non-comparative, cross-sectional study	Inpatient and outpatient	M=32.5 (SD=11) 239 m/50 f	Experiences in close relationships inventory (ECR-I)	BDI	Avoidant attachment higher in the group with low depressive symptoms (t=2.2, p=0.04) No sig difference on anxious attachment between low or high BDI groups (t=0.94, p=0.34)	Adequate
Luna et al (2015)	USA	305	Non-comparative, cross-sectional study	Residential substance abuse treatment centre	M=33.7 190 m/115 f	Experiences in close relationships short form (ECR-S)	MCMI-III	Anxious attachment correlated with Major Depressive Disorder (MDD) r=0.33 p≤ 0.01, Dysthymia (DYS) r=0.412, p≤ 0.01 and Bipolar Disorder (BIP) r=0.207, p≤ 0.01. Avoidance correlated with MDD r=0.29, p≤ 0.01, DYS r=0.264 p≤ 0.01 but not BIP	Adequate
Meier et al (2005)	UK	187	Interrupted time series	Residential rehab	M=30.1 (SD=6.3) 102 m/85 f	Relationship questionnaire (RQ)	Addiction Severity Index Psychiatric Scale	Did not report association between RQ and Addiction Severity Index Psychiatric Scale	Good
Miljkovitch et al (2009)	Switzerland	20	Cross-sectional study with non-clinical control and clinical comparison groups	Outpatient treatment centres	M=20 (15-25) 10 m/10 f	The CaMir Q-sort	BDI	Lack of attachment security and preoccupation associated with depression scores. As CaMir scores were introduced into the model secure (=-1.30) and preoccupied (=-0.91) scores were retained explaining 57% of the variance ($F(2, 17) = 11.20$, $p=0.001$, $R^2 =57$)	Adequate

Musetti et al (2016)	Italy	70	Non-comparative, cross-sectional study	Community and inpatient drug treatment services	M=28.9 (SD=5.7) 54 m/16 f	Adult Attachment Interview (AAI) Relationship Questionnaire (RQ) Parental Bonding Instrument (PBI)	SCL-90-R	**AAI** related to SCL-90 in relation to 'somatisation' ($F(3, 52) = 12.31$, $p<0.001$), secure attachment showed the highest level ($m=6.1$, $p<0.05$) **RQ**- related to paranoid ideation ($F(3,52) = 62.58$, $p < 0.001$), fearful higher (1.05) than secure (0.01), preoccupied (0.14), or dismissing attachment (0.48, $p < 0.001$ for all) RQ related to hostility ($F(3,52) = 3.54$, $p < 0.05$), fearful higher (1.73) than secure (0.83) or preoccupied (0.57, $p < 0.05$ for all) **PBI** related to paranoid ideation ($F(3,52) = 6.44$, $p < 0.01$), affectionate constraint (0.46)higher than affectionless control (0.04) or neglectful parenting (0.22, $p < 0.05$ for all). Opposite bonding (0.60) higher than affectionless control (0.04) or optimal bonding (0.02, $p < 0.05$ for all). PBI related to hostility ($F(3,52) = 4.65$, $p < 0.05$), affectionate constraint (1.06) higher than affectionless control (0.20, $p < 0.05$). Opposite bonding (1.38) higher than affectionless control or neglectful parenting (0.35, $p < 0.05$ for all). PBI related to depression ($F(3,52) = 5.31$, $p < 0.05$), affectionate constraint (1.02) and opposite bonding (1.02) higher than affectionless control (0.15, $p < 0.01$). PBI related to phobic anxiety ($F(3,52) = 6.82$, $p < 0.01$), opposite bonding (1.24) higher than affectionless control (0.25, $p < 0.05$)	Adequate
Owens et al (2014)	USA	78	Cross-sectional study with clinical comparison groups	Veterans seeking treatment in SUD program (did not state if inpatient or outpatient)	NOT REPORTED	Experiences in close relationships short form (ECR-S)	CES-D	Did not report association between ECR-S and CES-D	Adequate
Potik et al (2014)	Israel	101	Cohort study	Outpatient Methadone treatment program	18+ NOT REPORTED	Vulnerable Attachment Style Questionnaire (VASQ)	SCL-90	Vulnerable attachment higher SCL-90 scores on; interpersonal sensitivity ($m=0.53 \pm 0.74$, $p=0.01$), anxiety ($m=0.48 \pm 0.73$, $p=0.03$), hostility ($m=0.37 \pm 0.49$, $p=0.01$), phobic anxiety ($m=0.35 \pm 0.53$, $p=0.02$) and paranoid ideation ($m=0.60 \pm 0.73$, $p=0.02$) compared to secure	Adequate
Rosenstein & Horowitz (1996)	USA	60	Non-comparative, cross-sectional study	General psychiatric inpatient	M=16.4 (13.1-19.8) 32 m/28 f	Adult Attachment Interview (AAI)	SCL-90-R	SCL-90 scores were not significantly related to attachment classification ($F(9, 42) = 0.737$, $p<.673$)	Adequate
Schindler and Sack (2015)	Germany	36	Cross-sectional study with clinical comparison groups	Inpatient	M=29.8 M=31.1 20 m/16 f	Bartholomew attachment interview coding system	SCL-90	SCL-90 scores negatively correlated with secure attachment ($p=0.065$; $n^2=0.067$)	Adequate
Schindler et al (2009)	Germany	22	Cross-sectional study with non-clinical control	Outpatient treatment centres	M=19.6 (SD=3.1) 16 m/6 f	Family Attachment Interview (FAI)	SCL-90-R, GAF	Did not report association between FAI, SCL-90-R or GAF	Adequate

Schindler et al (2007)	Germany	37	Non-comparative, cross-sectional study	Not stated	M=18.7 (SD=2.8) 25 m/12 f	Family Attachment Interview (FAI)	GAF	GAF was significantly higher for near secure group in comparison to 'triangulated family group' (p=<.01) where both parents and their child show insecure attachment	Adequate
Tikka et al (2014)	India	40	Cross-sectional with non-clinical control	Inpatient addiction centre	M=38.2 (SD=7.7) 40 m/0 f	Relationship Styles Questionnaire (RSQ)	STAXI	Did not report association between RSQ and STAXI	Adequate
Wedekind et al (2013)	Germany	59	Non-comparative, cross-sectional study	Inpatient	M=46.1 (SD=10) 43 m/16 f	Relationship Styles Questionnaire (RSQ)	STAI	No significant difference between insecure and secure attachment on state anxiety but insecure higher on trait anxiety (t(57)=2.92, p=.005)	Adequate

BAI Beck Anxiety Inventory; *BDI* Beck Depression Inventory; *CES-D* The Centre for Epidemiologic Studies Depression Scale; *CORE-OM* Clinical Outcomes in Routine Evaluation – Outcome Measure; *GHQ-28* The General Health Questionnaire-28; *GAF* The Global Assessment of Functioning Scale; *MCMI-III* The Millon Multiaxial Clinical Inventory-III; *M* Mean; *STAI* Spielberger Stait Trait Anxiety Inventory; *SCL-90-R* Symptom Checklist – 90; *TSI-2* Trauma Symptom Inventory – 2.

Table 1 Summary of study characteristics

Measure	Author	Constructs	Administration	Psychometric support
Adult Attachment Interview (AAI)	George, Kaplan & Main (1996)	Secure, dismissing, preoccupied and unresolved with respect to a loss and/or trauma	Semi-structured interview	Strong psychometric properties and widely used in psychosomatic research (Ravitz et al, 2010)
Adult Attachment Projective Picture System (AAP)	George and West (2001)	Secure, dismissing, preoccupied or unresolved	Presented with drawings that are designed to activate the participants attachment system	Scoring on the AAP in comparison to the AAI is said to match around 94% (George & West, 2001) and inter-rater reliability is high
Adult Attachment Scale (AAS)	Collins & Read (1990)	Secure, anxious or avoidant	Self-report	Test retest reliability of 70% and internal consistency reliability and test retest reliability after 2 months was >.58 for the three subscales (Ravitz et al, 2010)
Adult Attachment Questionnaire (AAQ)	Hazan and Shaver (1987)	Secure, avoidant or anxious/ambivalent	Self-report	The AAQ has been shown to have satisfactory internal reliability and test-retest reliability (Ravitz et al, 2010)
Bartholomew Attachment Interview Coding System	Bartholomew & Horowitz (1991)	Secure, preoccupied, fearful or dismissing/avoidant	Semi-structured interview	Inter-rater reliability has been shown to range from 0.87 to 0.95 (Griffin & Bartholomew, 1994b) and internal consistency ranging from 0.86 to 0.91 (Grau, 1998). Agreement with AAI classifications was 78% (Bartholomew & Shaver, 1998)
The CaMir Q-sort.	Pierrehumbert (1996)	Secure, avoidant or preoccupied	Self-report	Miljkovitch et al (2009) reported satisfactory internal consistency and test re-test reliability ranging from 0.68 to 0.95
The Experiences in Close Relationships (ECR), Experiences in Close Relationships – Relationship Structures (ECR-RS)	Brenan et al (1998) Fraley et al (2011)	Anxiety or avoidance. Secure, preoccupied, fearful and dismissing	Self-report	α coefficients are reported to be .90 and test-retest coefficients are reported to be between .50 and .75. The ECR-R is widely used in research exploring romantic attachment and has shown excellent reliability (Ravitz et al, 2010)
Family Attachment Interview (FAI)	Bartholomew & Horowitz (1991)	Secure, preoccupied, fearful or dismissing	Semi-structured interview	Good validity and reliability have also been established (Bartholomew and Shaver, 1998; Griffin & Bartholomew, 1994)

Parental Bonding Instrument (PBI)	Parker et al (1979)	Affectionate constraint (high degree of care and overprotection), affectionless control (low degree of care and overprotection), optimal bonding (high degree of care and little control) and neglectful parenting (low degree of care and over-protection)	Self-report	Good discriminant validity between clinical and non-clinical populations (Manassis et al, 1999). Explorations of convergent validity have shown good convergence of the PBI and AAI on secure attachment but not with individuals with unresolved attachment (Manassis et al, 1999)
Relationship profile test (RPT)	Bornstein & Languirand (2003)	Destructive Overdependent (DO), Dysfunctional Detachment (DD) and Healthy Dependency (HD)	Self-report	Hagerty et al (2016) showed internal consistency reliability of .85 for DO, .65 for DD and .76 for HD
Relationship Questionnaire (RQ)	Bartholomew and Horowitz (1991)	Secure, dismissing, preoccupied or fearful	Self-report	Adequate test-retest scores with some evidence of convergent, discriminant and predictive validity (Ravitz et al, 2010)
Relationship Styles Questionnaire (RSQ)	Griffin and Bartholomew (1994a)	Measured within four patterns and two dimensions, namely; secure, avoidance, ambivalence, closeness, anxiety and dependency	Self-report	Correlations between the RQ and the RSQ have been found to be high with the RSQ also showing adequate test-retest scores with some evidence of convergent, discriminant and predictive validity (Ravitz et al, 2010)
Vulnerable Attachment Style Questionnaire (VASQ)	Bifulco et al (2003)	Overall score of either secure or vulnerable attachment and two subscales in relation to insecurity and proximity seeking	Self-report	Bifulco et al (2003) reported Chronbach's α as 0.82 for the insecurity items and 0.67 for the proximity seeking scale

Table 2 Summary of attachment measures

Measure	Administration	Studies using the measure	Results
Adult Attachment Interview	Interview	De Palo et al, 2014; Musetti et al, 2016; Rosenstein & Horowitz, 1996	Attachment data was available for 156 participants; 34.6% (n=54) were classed as dismissing, 25.6% (n=40) preoccupied, 23.7% (n=37) secure, and 16.1% (n=25) unresolved
Adult Attachment Projective Picture System	Projective interview	Delvecchio et al. (2016)	18% (n=7) were dismissing, 12% (n=5) preoccupied and 70% (n=28) unresolved with no secure attachment patterns identified
Bartholomew Attachment Interview Coding System	Interview	Schindler and Sack (2015)	Fearful M=3.28 (SD=1.07), preoccupied M=2.82 (SD=1.03), dismissing M=2.03 (0.88) and secure M=1.90 (SD=0.75)
Family Attachment Interview	Interview	Schindler et al, 2007; Schindler et al, 2009	Data in relation to categories of attachment was available from one of the studies (Schindler et al, 2009 Of these participants (n=22), 77.3% (n=17) were fearful-avoidant, 22.7% (n=5) were preoccupied and zero were dismissing/avoidant or secure. The substance misuse group also showed significantly higher attachment insecurity in comparison to healthy controls (p=.019)
Adult Attachment Questionnaire	Self-report	De Rick et al. (2009)	Attachment data was available for 96 of their participants, 65.6% (n=63) were classified as insecure and 34.4% (n=33) secure
Relationship Questionnaire	Self-report	Diaz, Horton & Malloy, 2014; Doumas et al, 2008; Fowler et al, 2013; Meier et al, 2005; Musetti et al, 2016	Of those studies, data in relation to specific attachment styles was available for 183 participants, 28.9% (n=53) reported a fearful attachment, 27.9% (n=51) preoccupied, 25.1% (n=46) secure and 18.1% (n=33) dismissing. Doumas et al. (2008) reported that the percentage of insecure attachment profiles were significantly higher in a substance misuse population in comparison to healthy controls ($X^2(43,3) = 20.85$, $p<.001$)
Relationship Styles Questionnaire	Self-report	Tikka et al, 2014; Wedekind et al, 2013	Wedekind et al. (2013) reported that 33% (n=20) of their sample were secure, 24% (n=14) insecure ambivalent, 24% (n=14) insecure dismissive and 19% (n=11) insecure avoidant. Tikka et al. (2014) compared the attachment profiles of alcohol-dependent patients with healthy controls and found no significant difference. The mean scores for the alcohol-dependent group in terms of attachment style were secure M=11.55 (SD=3.9), fearful M=9.92 (SD=3.5), preoccupied M=10.10 (SD=3.1), dismissing M=14.98 (SD=4.4) and avoidant M=18.90 (SD=4.9)
The Experiences in Close Relationships	Self-report	Gidhagen et al, 2018; Haggerty et al; 2015; Kerlin, 2017; Keskin and Gumus, 2017; Luna et al, 2015; Owens et al, 2014;	Of those studies, specific data in relation to attachment styles was available for one study (n=108, 4.8%). Gidhagen et al. (2018) reported that 31% (n=33) of their participants showed secure attachment, 29% (n=31) preoccupied, 15% (n=16) dismissing, 26% (n=28) fearful
Vulnerable Attachment Style Questionnaire	Self-report	Potik et al. (2014)	79.2% (n=81) showed a vulnerable attachment with the other 20.8% (n=20) showing secure attachment. In relation to the vulnerably attached group, 80 scored highly on the insecure subscale and 66 a high score on the proximity seeking scale
Parental Bonding Instrument	Self-report	Musetti et al. (2016)	Attachment categories were available for 67 participants, 46.1% (n=31) showed affectionate constraints, 1.1% (n=1) showed optimal bonding, 14.9% (n=10) showed affectionless-control and 11.9% (n=8) neglectful parenting. They also chose to include a fifth category were there was an opposite parenting style between parents and 26% (n=17) of participants showed this pattern
The CaMir Q-sort	Self-report	Miljkovitch et al. (2009)	They did not report attachment categories within their study. However, noted that their substance misuse group scored the lowest on secure attachment cognitions M=0.15 (SD=0.4) in comparison to healthy controls M=0.49 (SD=0.38) and participants with an eating disorder M=0.25 (SD=0.42; $F[2, 90] = 6.31$, $p<0.01$)

Relationship profile test	Self-report	Hagerty et al. (2016)	They reported overall mean scores in relation to each attachment classification; dysfunctional detachment M=33.61 (SD=5.76), healthy dependency M=33.37 (SD=6.18) and destructive over-dependent M=28.35 (SD=8.05).
Adult Attachment Scale	Self-report	Gasior (2017)	The study compared three groups of women; incarcerated, addicted and addicted incarcerated. They found no significant difference in relation to avoidant attachment, however, the addicted (M=33.83) and incarcerated addicted (M=37.28) groups showed significantly higher levels of anxious attachment than the incarcerated group (M=28.39; F[151]=9.11, p<0.001).

Table 3 Summary of attachment classifications

Attachment and substance misuse

There were a total of 13 different attachment measures used across the studies. See Table 2 for a description of each measure and psychometric properties. The methodological quality of the included studies was generally adequate with some areas of particular strength or weakness (see Table 4 for quality ratings). Four studies included a non-clinical control group (Doumas et al, 2008; Miljkovitch et al, 2009; Schindler et al, 2009; Tikka et al; 2014) and another three included a clinical comparison group (Gasior 2017; Owens et al, 2014; Schindler and Sack, 2015), with one using a non-clinical control and clinical comparison (Miljkovitch et al, 2009). Four of the studies failed to give an adequate description of their recruitment procedures, setting, or number of individuals who had refused to participate (De Palo et al, 2014; Gasior, 2017; Potik et al, 2014; Tikka et al, 2014). All studies used convenience sampling where individuals were approached on admission with one study advertising for participants with promotional material in treatment centres (Miljkovitch et al, 2009). Sample sizes tended to be small with only one study reporting a power analysis (Schindler & Sack, 2015). Only one of the included studies was conducted in the UK and the others locations were diverse including; USA, India, Israel and Turkey.

Interview and projective measures (table 3)

Seven of the included studies used interview or projective measures to assess attachment (Delvecchio et al, 2016; De Palo et al, 2014; Musetti et al, 2016; Rosenstein & Horowitz, 1996; Schindler et al, 2007; Schindler et al, 2009; Schindler and Sack, 2015). These forms of assessing attachment do not rely on the participant's conscious interpretations of attachment states. Interviews tend to assess narrative coherence and reflective capacity, where an incoherent, over generalised description of relational experiences indicates a more insecure profile. Projective measures activate an individual's attachment style, which allows observation of their ability to resolve attachment related problems (Ravitz et al, 2010). The interview and projective measures used within the studies have been shown to have excellent psychometric properties with high levels of reliability and validity (see table 2). The studies using these measures mostly had adequate quality ratings overall with the exception of De Palo et al (2014) who had the lowest quality rating of all the studies due to insufficient reporting of their population and analysis.

From the interview and projective studies, all reported a high level of insecure attachment styles. Secure attachment was by far the lowest represented attachment style with two of the studies finding no secure attachment profiles within their samples (Delvecchio et al, 2016; Schindler et al, 2009). The studies also suggested that within the insecure groups, they tended to show a more dismissing or preoccupied attachment style.

Self-report measures (table 3)

In contrast to interview or projective measures, self-report focuses on the individual's conscious understanding of their patterns of responding within relationships. Of the included studies, the remaining 16 used self-report measures of attachment, with only one using both interview and self-report measures (Musetti et al, 2016).

Similarly to the interview and projective measures, self-reports also suggest a high representation of insecure attachment profiles within a substance misuse population. The studies also indicated that in comparison to non-clinical and other clinical controls, substance misuse groups show significantly higher levels of insecure attachment. Tikka et al. (2014) reported no significant difference with healthy controls. However, the control group characteristics and recruitment procedures were poorly defined impacting on the validity of the finding.

Attachment and psychological distress (table 1)

Measures

All included studies contained a measure of psychological distress and 17 specifically investigated the association between attachment style and psychological distress. See Table 5 for descriptions of the psychological distress measures used to investigate this association within the included studies. All studies used measures which demonstrated acceptable psychometric properties as this constituted one of the inclusion criteria prior to selection (see Table 5). However, all but one study used self-report measures to assess psychological distress with one study adopting the clinician rated GAF (Schindler et al, 2007).

Author	Population/sampling	Outcomes	Analysis	Overall
Delvecchio et al (2016)	Adequate	Adequate	Adequate	Adequate
De Palo et al (2014)	Poor	Adequate	Poor	Poor
De Rick et al (2009)	Adequate	Adequate	Adequate	Adequate
Diaz , Horton and Malloy (2014)	Adequate	Adequate	Adequate	Adequate
Doumas et al (2008)	Adequate	Adequate	Adequate	Adequate
Fowler et al (2013)	Adequate	Adequate	Adequate	Adequate
Gasior (2017)	Poor	Adequate	Adequate	Adequate
Gidhagen et al (2018)	Well covered	Adequate	Adequate	Adequate
Haggerty et al (2015)	Adequate	Adequate	Adequate	Adequate
Kerlin (2017)	Adequate	Adequate	Adequate	Adequate
Keskin and Gumus (2017)	Well covered	Adequate	Adequate	Adequate
Luna et al (2015)	Adequate	Adequate	Adequate	Adequate
Meier et al (2005)	Well covered	Adequate	Well covered	Good
Miljkovitch et al (2009)	Well covered	Adequate	Adequate	Adequate
Musetti et al (2016)	Adequate	Adequate	Well covered	Adequate
Owens et al (2014)	Adequate	Adequate	Adequate	Adequate
Potik et al (2014)	Poor	Adequate	Adequate	Adequate
Rosenstein & Horowitz (1996)	Well covered	Adequate	Adequate	Adequate
Schindler and Sack (2015)	Adequate	Adequate	Well covered	Adequate
Schindler et al (2009)	Adequate	Adequate	Adequate	Adequate
Schindler et al (2007)	Adequate	Adequate	Adequate	Adequate
Tikka et al (2014)	Poor	Adequate	Adequate	Adequate
Wedekind et al (2013)	Adequate	Adequate	Adequate	Adequate

Table 4 Summary of quality appraisal

Attachment and anxiety

Six studies explored the relationship between attachment and anxiety and all reported significantly higher levels of anxiety within the insecure attachment groups (De Rick et al (2009; Delvecchio et al; 2016; Doumas et al, 2008; Musetti et al, 2016; Potik et al, 2014; Wedekind et al, 2013). More specifically, two found that insecure groups were significantly higher than secure on trait but not state anxiety (De Rick et al, 2009; Wedekind et al, 2013). One study indicated that a dismissing attachment style had the lowest level of self-reported anxiety (Doumas et al, 2008). All of the studies had generally adequate levels of methodological quality. However; none used a non-clinical control, one showed a particular weakness in reporting on the population sampled (Potik et al, 2014) and all relied on subjective self-report measures of anxiety.

Measure	Author	Constructs	Administration	Psychometric support
Addiction Severity Index Psychiatric Scale	McLellan et al (1980)	Anxiety and depression	Self-report	Widely used in clinical and research settings. Psychometric properties can be variable (Mäkelä, 2004) but some evidence of acceptable psychometric properties (McLellan et al 1985; Zanis et al, 1994)
Beck Anxiety Inventory (BAI)	Beck et al (1988)	Anxiety	Self-report	Generally excellent internal consistency with a coefficient α of .92, good test-retest reliability with a coefficient of .75 and demonstrated convergent and discriminant validity (Beck et al, 1988; Steer et al, 1993). Showed adequate discriminant validity within a substance misuse population (Lykke et al, 2008)
Beck Depression Inventory (BDI)	Beck (1967)	Depression	Self-report	Generally good internal consistency with a coefficient α of .73-.92 (Beck et al, 1988) and convergent and discriminant validity (Steer et al, 1986). Showed good discriminant validity within a substance misuse population (Lykke et al, 2008)
The Centre for Epidemiologic Studies Depression Scale (CES-D)	Radloff (1977)	Mood	Self-report	Reported to have good psychometric properties (Orme et al, 1986; Radloff, 1977). Used frequently within substance misuse populations (Grigsby et al, 2014; Skitch & Abela, 2008; Madruga et el, 2011)
Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM)	Evans et al (2002).	Subjective well-being, symptoms, functioning and risk	Self-report	Internal and test–retest reliability is good (0.75–0.95), as is convergent validity (Evans et al, 2002). Used frequently within substance misuse populations (Brooks et al, 2011; Testoni et al, 2018)
The General Health Questionnaire-28 (GHQ-28)	Goldberg (1978)	Depression, anxiety, social impairment, somatic complaints	Self-report	Test retest reliability has been shown as .78 to .90 (Robinson and Price, 1982) with excellent inter-rater reliability, Chronbach's α .90-.95 (Failde et al, 2000). Showed good validity within substance misuse population (Ardakani, 2016)
The Global Assessment of Functioning Scale (GAF)	American Psychiatric Association (1996)	Functioning - based on the DSM-IV multi-axial diagnosis	Clinician-rated	Inter-rater reliability has been shown to be satisfactory 0.53–0.66 (Rey et al, 1995). Regularly used within substance misuse populations (Link et al, 1997)
The Millon Multiaxial Clinical Inventory-III (MCMI-III)	Millon et al (2009)	Mood disorder traits, personality disorders and the validity and response style	Self-report	Has shown good psychometric properties (Millon, 1997; Craig and Olsen, 1998). It has also been used in studies with individuals who use substances (Diaz et al, 2009)

Spielberger Stait Trait Anxiety Inventory (STAI)	Spielberger (1977)	Trait and state anxiety	Self-report	Widely researched and used. Internal consistency alpha coefficients reaching 0.86 (Julian, 2011)
Symptom Checklist – 90 (SCL-90-R)	Derogatis (1983)	Somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. The scores can also be combined to produce an overall level of distress, Global Severity Index (GSI)	Self-report	Widely used and has shown internal reliability between .77 to .90, and test-retest reliability between .68 to .90 (Kerlin, 2017). Regularly used within substance misuse populations (Ardakani et al, 2016; Carpenter & Hittner, 1995)
Trauma Symptom Inventory – 2 (TSI-2)	Briere (2012)	PTSD and other related psychological symptoms	Self-report	The TSI-2 has been shown to have good psychometric properties (Briere et al, 1995; Snyder et al, 2009) and has also been used within substance misuse populations (Cosden et al, 2015; Najavits & Walsh, 2012)

Table 5 Summary of measures of psychological distress

Attachment and depression

Six studies explored the relationship between attachment and depression (Delvecchio et al, 2016; Diaz, Horton and Malloy, 2014; Doumas et al, 2008; Keskin & Gumus, 2017; Miljkovitch et al, 2009; Musetti et al, 2016). Again, all reported significantly higher levels of depression in the insecurely attached groups. Doumas et al. (2008) identified the lowest level of self-reported depression in the dismissing group. A similar result was also found by Keskin and Gumus (2017), who reported avoidant attachment as higher in the group with low depressive symptoms. Again, all studies showed adequate levels of methodological quality. Miljkovitch et al. (2009) showed a particular strength in using a non-clinical control and clinical comparison groups, however, their sample size was small (n=20) which impacts the external validity of the results.

Attachment and overall distress

Six studies explored the relationship between attachment and overall scores of distress. One study found SCL-90 scores were not significantly related to attachment classification and interestingly was the only included study to recruit from a general psychiatric population rather than a substance misuse specific service (Rosenstein & Horowitz, 1996). The remaining five studies indicate a trend for insecure attachment relating to higher levels of psychological distress (De Palo et al, 2014; Gidhagen et al, 2018; Haggerty et al, 2015; Schindler et al, 2007; Schindler and Sack, 2015). One study found that SCL-90 scores did not reach the clinical range but noted preoccupied and unresolved groups scored higher than dismissing or secure (De Palo et al, 2014). Schindler et al. (2007) was the only study to use a clinician reported measure for psychological distress. Within this study, clinicians rated functioning as significantly higher in the near secure group as opposed to the group where both parents and child show insecure attachment.

Attachment and Post Traumatic Stress Disorder

One study explored the link between attachment and PTSD and found that anxious attachment was positively correlated with symptoms of PTSD (Gasior, 2017). Unfortunately, the study had methodological difficulties as they failed to report on recruitment procedures and provide sufficient detail in relation to the sample population.

Attachment and Psychiatric diagnosis

One study explored the correlation between attachment classification and specific diagnoses (Luna et al, 2015). They found that anxious attachment correlated with Major Depressive Disorder (MDD), Dysthymia (DYS) and Bipolar Disorder (BIP), whereas avoidant attachment correlated with MDD, DYS but not BIP. The study had a particular strength in that it contained the biggest sample of the included studies (n=305) and also provided further evidence for a differentiation between specific classifications of insecure attachment and self-reporting of symptoms related to psychological distress (e.g. avoidant Vs anxious).

Discussion

Summary of results

The aim of the current review was to identify, summarise and critically evaluate articles that have explored attachment, substance misuse and psychological distress within clinical populations. This included exploring the measures used to assess attachment and psychological distress, identifying the prevalence of particular attachment styles and identifying any associations between attachment and psychological distress.

This review provides further support for the increased prevalence of insecure attachment styles within a substance misuse population. In line with previous literature, most studies reported higher levels of insecure attachment styles in comparison to secure. This result was also consistent across different types of attachment measures. Fairbairn et al (2018) suggested that an insecure attachment style may act as a vulnerability factor for later substance misuse. They hypothesised that individuals who have not been able to develop healthy emotion regulation skills through relationships, may turn to substances for emotional relief.

In addition, findings indicate that individuals with substance misuse difficulties and an insecure attachment style tend to report higher levels of psychological distress including symptoms related to anxiety, low mood and PTSD. The association between attachment and expression of distress is in line with previous research within other populations including; psychosis (Gumley et al, 2014) and PTSD (Barazzone et al, 2019). The findings also fit within an attachment framework as if attachment were a reflection of an individual's adaptation to early adverse experiences and their strategies for coping with distress, we would expect attachment styles to be associated with expression of psychological distress (Gumley et al, 2014). In addition, when considering specific attachment patterns, there is further evidence that individuals with a dismissing or avoidant style report lower levels of psychological distress (Barazzone et al, 2019).

Strengths and limitations

The current review was strengthened by the focus on outcomes within clinical populations. This was an attempt to create a more homogenous account of substance misuse as defined by the need to access treatment services. Previous reviews tended to include individuals with varying degrees of substance use or only those with a formal diagnosis of SUD (Schindler, 2019).

Steps were taken to increase the methodological rigour of the review. Authors published a protocol on PROSPERO prior to conducting the review which reduced the likelihood of inclusion/exclusion bias based on data extraction (Boothe et al, 2012). Search terms were designed to be as inclusive as possible within the study parameters and risk of bias was independently assessed by two raters. However, the inclusion and exclusion criteria may have resulted in a publication bias and the omission of key foreign language texts. Due to the large amount of published, peer-reviewed literature available the decision was made to focus

the review within these parameters. This method of focusing only on published, peer reviewed literature has been shown to increase the ability to search systematically and report clear results. (Boland et al, 2017).

The studies included in the review were also largely cross-sectional therefore causality cannot be inferred from these results. However, a previous meta-analysis by Fairbairn et al (2018) provided evidence that insecure attachment may temporally precede substance use. Furthermore, the current study did not aim to separate insecure attachment styles into particular patterns (e.g. anxious, avoidant) so we are not able to determine whether it is a particular pattern of insecure attachment that is driving the relationship with substance misuse. Again, the review did not attempt to differentiate between different substances therefore we are unable to identify whether there are differential effects of attachment styles related to particular substances.

In line with previous reviews, the generalisability of these findings is limited due to methodological issues related to the variability in measures (Iglesias et al, 2014; Schindler, 2019) and the focus on self-report measures of psychological distress. There were 13 different attachment measures used across the studies and nine of those were self-report. Self-report measures tend to focus on the individual's current views and do not have the ability to identify when a response is biased by an attachment related defence (Ravitz, 2010). Whereas interview and projective measures reduce response bias and activate the attachment system without relying on conscious processes (Madigan et al, 2016). The studies also differed on the focus relationships including current romantic relationships and early developmental relationships. Although attachment styles tend to remain relatively stable over time, there is also evidence that they can change in response to new relational experiences and life events (Barazzone et al, 2019; Gidhagen et al, 2018). However, the results suggest that both forms of measure indicate a tendency for an insecure attachment style within this population. This is in line with previous research indicating a moderate association between the two types of measure (Schindler et al, 2005).

Research implications

The results of this review indicate a need for improved methodology including more comprehensive measures of psychological distress. Future studies should also aim to give richer descriptions of their samples and recruitment procedures including any factors which could impact reporting of symptoms. In line with previous findings, there was evidence that individuals with a dismissing or avoidant attachment style reported lower levels of psychological distress (Barazzone et al, 2019; Woodhouse et al, 2015). However, it remains unclear whether this demonstrates a higher level of resiliency (Kanninan et al, 2003) or whether it is a reflection of a lack of sensitivity of self-report measures in capturing other areas of psychological distress (Barazzone et al, 2019). It is also worth noting that some of the sample populations were from environments where individuals were detained or where there may have been other motives to express lower levels of distress (e.g. parenting

programme; Richter & Johnson, 2001). Previous studies have suggested a link between a dismissing attachment style and higher levels of somatisation after experiencing a traumatic event (Kanninan et al, 2003). In contrast, one of the included studies found that a secure attachment style showed the highest levels of somatisation (Musetti et al, 2016). Further replication of existing findings could expand the limited evidence base on differences between particular patterns of attachment and their experiences of psychological distress (Schindler, 2019). To do so, there needs to be more uniformity in the measures used to assess attachment and psychological distress to address any methodological bias.

In addition, only one of the studies was conducted in the UK and did not report results on the specific attachment styles of their sample or the association between attachment and psychological distress (Meier et al, 2005). Therefore, future research is required to explore potential associations between substance misuse, attachment and psychological distress within this population.

Clinical implications

The findings in this review provide further support for an attachment focused framework for treatment of substance misuse. It also provides evidence that attachment is an important consideration when formulating an individual's expression of distress and their interaction with services. Previous evidence suggests that individuals with a dismissing or avoidant attachment style are less likely to seek help for their difficulties due to problems with intimacy and trust (Muller, 2009). In contrast, individuals with a more anxious attachment fear abandonment and seek interpersonal closeness so are more likely to seek help (Cheng et al, 2015). It is worth noting that the review only covered clinical samples of individuals who had already engaged with substance misuse services. Therefore, may not be generalisable to those who do not engage with treatment services at all. Services should be aware of the help seeking process being different for different attachment orientations. In particular, alternative methods of engaging those with avoidant attachment that do not rely on interpersonal closeness, should be considered (e.g. self-help; Barazzone et al, 2019). Services should also be aware that low scores on self-report measures of psychological distress may reflect under-reporting as opposed to absence of symptoms. Scores should therefore be interpreted within the context of an individual's formulation and attachment style. In the case of an avoidant or dismissing attachment style, it may be helpful to supplement self-reports with more objective measures of psychosocial functioning. This may include; ability to perform tasks of daily living, engagement in relationships and community and the level of pleasure derived from this (Mehta et al, 2014).

In conclusion, this review provides further support for the increased prevalence of insecure attachment styles within a substance misuse population. It also indicates a general relationship between an insecure attachment style and increased levels of psychological distress. However, there was also evidence to support variability in expression of psychological distress between different attachment orientations. Methodological issues

with the literature make it challenging to determine whether this was related to under-reporting of symptoms or reflected a level of resilience. Future studies should explore the underlying mechanism of the association between attachment insecurity and psychological distress within different attachment orientations.

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Journal Article 2: Empirical Study[3]

A grounded theory study: how non-treatment seeking substance users make sense of their behaviour

"I want to be me but I don't know who me is"

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Abstract

Despite the global impact of substance misuse, there are inadequate levels of specialist service provision and continued difficulties with treatment engagement. Within policy and research, there is substantial consideration of the importance of these factors. However, there is little empirical evidence of the views of non-treatment seeking substance users, who make up the majority of the substance using population. The aim of this study was to understand how these individuals make sense of their behaviour and their reasons for not accessing treatment. A constructivist grounded theory approach was used to interview eight individuals who were currently using substances and not seeking help to stop. Results indicated that identity and relational variables influence treatment decisions for individuals who use substances. Findings were considered in relation to the existing evidence base and recommendations are made for further research and clinical practice.

Key words: attachment, substance misuse, identity.

Introduction

National context

In 2018, Scotland experienced a 27% increase in drug related deaths in comparison to the previous year. At 1,187, this was Scotland's highest number of drug related deaths ever recorded which had more than doubled over a ten-year period (National Records of Scotland, 2019). In response to this, and in line with the national drug and alcohol strategy (Rights Respect and Recovery, 2018) the Scottish Government established the Drugs Deaths Taskforce with the aim of reducing the risk and harm towards people who use drugs (Scottish Government, 2020). The emergency response from the Taskforce identified the need for research which incorporates the preferences, priorities and values of those with lived experience and who are most at risk. In 2016 the Scottish Drugs Forum and the Scottish Government published the Staying Alive in Scotland report which sets out good practice indicators for strategies designed to address drug related deaths (Scottish Drugs Forum, 2016). Within the report they identified the need for a number of local strategies including addressing access to services and treatment retention.

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Theories of substance misuse

An early theory in relation to substance misuse was the "self-medication" hypothesis (Khantzian, 1997). The hypothesis suggests that individuals are vulnerable to substance misuse if they have difficulties in tolerating, regulating and recognising their emotions. Later versions identified three further areas of vulnerability to substance misuse i) inability to sustain a coherent sense of self ii) inability to create and maintain containing, supportive relationships and iii) an inability to regulate behaviour, impacting on daily functioning (Khantzian, 2012). However, there has been criticism of the hypothesis' capacity to capture the complex biopsychosocial drivers of substance misuse (Lembecke, 2012). The hypothesis also postulates that specific substances would be used to ameliorate particular affective states (e.g. alcohol for emotional suppression and cocaine for restlessness; Suh et al, 2008). However, empirical research exploring the association between affect and substance use has been inconclusive (Schindler, 2019; Tronnier, 2015).

Regulation theory builds upon the self-medication hypothesis by integrating attachment theory as a way to provide further detail in relation to the self-regulatory aspects of substance misuse (Tronnier, 2015). Positive and responsive early attachment relationships are seen as pivotal in shaping an individual's ability to regulate arousal. Therefore, in the absence of this, an individual will be more likely to rely on external means such as substance use. Due to this, treatment interventions tend to focus on building skills in self-regulation whilst fostering attachment security within the therapeutic relationship (Waters et al, 2014). The regulatory nature of substance use in managing distress is well recognised within the clinical field. Services also acknowledge that a large majority of individuals who access support have experienced trauma so they are trained in being able to recognise and respond to this at all levels (NHS Education for Scotland, 2017). In 2018, NHS Education for Scotland set out a guide for the delivery of psychological interventions for substance misuse. This included a matched stepped care model that addresses both substance misuse and co-morbid trauma in parallel.

Workers at all levels of the model should be working in a psychologically informed way with safety, trust, choice, collaborative treatment and empowerment at the heart.

Helpseeking and barriers to recovery

Despite the global impact of substance misuse there are inadequate levels of specialist service provision and continued difficulties with treatment engagement and retention (Boniface & Strang, 2019). Due to this, a substantial amount of research has been dedicated to exploring the factors that influence treatment engagement and drop out within substance misuse services (Heyes et al, 2016; Tsogia et al, 2001). It has been suggested that factors such as fear of experiencing emotions (which have been supressed through substance use), difficulties breaking ties with substance using communities and institutional expectations and stigma can act as barriers to treatment (Notley et al, 2013). Many believe the construction of a non-addict identity is fundamental for the recovery process and a key element to this process is for the individual to have a coherent biographical narrative (Giddens, 1991). Studies exploring identity and addiction have suggested that treatment engagement is often preceded by a conflict between an addict identity and one opposed to substance use, for example, being a parent or an employee (McIntosh & McKeganey, 2000; McKeganey, 2001, Shinebourne & Smith, 2009).

In contrast, very little is known about the experiences of those who encounter substantial difficulties related to their substance misuse but choose not to access treatment. The consequence of this is a large proportion of individuals with problematic substance use do not have their perspectives adequately represented in research. It is unclear whether this non-treatment seeking population would be motivated to engage in substance misuse research and potential recruitment difficulties may arise if they are not linked with a clinical team. However, recent research has indicated that individuals who initially approach services but do not access treatment have still expressed enthusiasm for being involved in research (Boniface & Strang, 2019). By building a better understanding of this population, services will identify barriers to treatment and identify any differences compared to those who seek-treatment. In turn, this will highlight potential service gaps or improvements which will promote increased treatment engagement, retention and outcomes.

Justification and aims of current research

Although there is substantial consideration of the importance of treatment engagement and retention throughout policy and research, there is little empirical evidence of the views of non-treatment seeking substance users. Existing research suggests a complex interaction of factors at individual, societal and systemic levels which lead to poor treatment engagement (Tsogia, et al, 2001). However, historically this body of research has tended to be retrospective in nature, after treatment engagement. To the author's knowledge, no previous research has focused solely on gathering the perspectives of non-treatment seeking substance users, who represent a large proportion of those with problematic substance use (Narrow et al, 1993). Therefore, the aim of this study is to understand how they make sense of their behaviour and their reasons for not accessing treatment. This is turn will support services to identify any gaps in provision and tailor services to better meet their needs.

Method

Grounded theory

Due to the limited nature of research on the topic area, qualitative methods were identified as being the most suitable. Qualitative methods allow for the production of rich data and an in-depth understanding of the research area (Corbin & Strauss, 2015). Grounded theory was identified as the most suitable approach for the present study as it involves an inductive process which allows for the development of theory as opposed to testing hypotheses (Lauridsen & Higginbottom, 2014). This process involves simultaneous data collection and analysis which guides the direction of further enquiry (Alemu et al., 2017). A grounded theory approach is unique in its emphasis on developing theory shaped by the data. This in turn allows for more flexibility and creativity in developing new theory that is not necessarily shaped by existing literature. Initial coding in grounded theory is flexible and evolves throughout the coding process. This makes it unique from other qualitative methods for analysing data such as thematic analysis where themes are often pre-specified.

Glaser and Strauss originally developed grounded theory in 1967 and it has since been developed into a number of different forms (Lauridsen & Higginbottom, 2014). The current study adopts the Constructivist Grounded Theory (CGT) approach which was developed by Charmaz in 1995 (Charmaz, 2014). The CGT approach adopts a social scientific perspective where the impact of the researcher's own interpretations (based in their own beliefs and experiences) interacts with those of the individuals they are researching. The findings from CGT research are considered to be co-constructed by the researcher and their participants as opposed to a purely objective reality which was proposed by earlier forms of grounded theory (Howard-Payne, 2016). Due to this, it is important for the researcher to consider the interaction between their own characteristics, the data they are collecting and the influence on their interpretation. A statement of reflexivity from the main author is included to identify any potential influences (see Appendix 5).

Participants and recruitment

During initial consultation with the NHS Addiction Psychology Service, recruitment organisations were identified where individuals who use substances may access support not directly related to addressing their substance use (e.g. harm reduction, homeless services, Blood Bourne Virus Network), including third sector, NHS and local authority services. Contact was made with service managers who disseminated study information within their teams (see Appendix 6 for Participant Information Sheet). Staff were requested to identify any individuals who met inclusion criteria and approach them to take part in the study. To be included in the study individuals had to consider themselves to be someone who uses substances and not actively trying to stop. They were also required to have capacity to consent to take part in the study and have a sufficient capability of the English language.

Capacity of participants was assessed by the lead researcher prior to requesting formal written consent.

Procedure

Support workers provided potential participants with both verbal and written information in relation to the study and they were given at least 24 hours to decide if they would like to take part. Interviews were conducted by the main author who liaised with support workers to identify suitable times to promote participant attendance. Where appropriate, support workers facilitated initial introductions with participants. Participants completed a written consent form and were asked some background, demographic information (e.g. age, substance use and age of first substance use). Interviews were recorded using an encrypted digital voice recorder and transcribed verbatim. A semi-structured interview schedule was developed to generate the data for the study (see Appendix 7). After every 1-2 interviews data was analysed through open coding and initial tentative interpretations were made. These were recorded in memos and used to adapt the interview schedule prior to the next interview so that emerging categories could be explored. Unfortunately, due to the transient nature of many of the participants within the recruitment services it was not realistic to attempt further contact requesting feedback on the emerging themes or connections in the data.

Ethical considerations

The study was approved by the NHS West Midlands – Coventry and Warwickshire Research Ethics Committee, the local NHS Research and Development office and the University of Edinburgh (see Appendix 8). Data was securely managed in line with the European General Data Protection Regulation (EU) 2016/679 (GDPR) and NHS code of confidentiality. This included obtaining written, informed consent from each participant. Capacity to give informed consent was assessed by the main author in line with principles from Scottish Government guidance (Adults with incapacity: guide to assessing capacity, 2008). Data was pseudonymised by replacing participant's names with a number and any other identifying information such as names of people or places were also removed. Participation in the study was voluntary and participants were explicitly informed of their right to withdraw, at any time, prior to consenting to take part. Participants were also informed of the main researcher's dual role as a Trainee Clinical Psychologist aligned to the Addiction Psychology Service.

Data Analysis

Transcribed interviews were analysed in line with guidelines set out by Charmaz (2014) where data was collected and analysed in parallel. Dedoose software (version 8.3.17) was used to support the analysis and to provide an audit trail. Line-by-line coding was completed initially to identify potential paths for analysis. Focused coding was then conducted by reading and re-reading transcripts, comparing and combining initial codes to identify the theoretical direction of the analysis (see Appendix 9 for coding examples). Emerging themes were also explored and expanded upon during supervision with the second author. Memos were used

throughout data collection and analysis to aid construction of the theoretical categories by identifying further lines of enquiry, assumptions and comparison and connections of codes (See Appendix 9 for memo examples).

Sample

Purposive sampling was used to include participants who were knowledgeable and experienced in relation to substance use to provide rich data (Palinkas et al, 2015). In total, 8 participants were interviewed across five different services. This included one NHS and four third sector services. Participants were all males and Scottish; aged between 25-52 years (M=42.6, SD=9.2). The length of time they had engaged with the support organisation ranged from 18 days to six years (M=1.7, SD=2 years). Six participants reported their main substance use as heroin, one reported cannabis use only and one reported prescription medication abuse only. The age they first began using substances ranged from 13-32 years (M=20.4, SD=6.9).

Barriers to recruitment

There were a number of recruitment and data collection difficulties related to population characteristics and service pressures. Two individuals who had initially agreed to take part felt uneasy about the use of a digital recorder and declined participation and several failed to attend for interview. Two interviews were cut short, one due to a disturbance within the service and another due to the individual finding it difficult to concentrate for more than a very short period. In addition, three recruited individuals moved on from the service before the interviews could take place. Timing of the interviews had to be co-ordinated with staff and individuals in line with their substance use. At times this left a very short window where individuals were willing to engage and where their substance use was at a level so as not to have overly impacted on their cognitive functioning. This required assessing their ability to attend to and hold information in mind. This was particularly relevant for participants who reported heroin use as previous research indicates an association between opiate use and deficits in working memory, planning, impulse control, and decision making (Loeber et al, 2012). At the service level, there were management restructures in at least two of the recruitment organisations that delayed recruitment processes. There were also frontline staff changes which resulted in some initially agreed interviews not taking place. A number of participants did not meet the inclusion criteria as they were already linked with substance misuse services; despite this, staff felt these individuals did not want to address their substance use. Unfortunately, time limitations prevented recruitment from being extended.

Results

The main aim of the study was to create an explanatory theory of how non-treatment seeking individuals, who use substances, make sense of their behaviour. As with all constructivist grounded theory research the final theory is considered to be co-constructed with the researcher and the participants so is therefore influenced by the researcher's own

perceptions (Charmaz, 2014). The grounded theory model 'drug identity – sense of self' is depicted in Figure 1 and is composed of four linked theoretical categories. The categories are mostly inter-related and overlapping, reflecting the complexity of the variables that influence treatment decisions for individuals who use substances. All participants described their substance use as essential to their day to day functioning and their primary 'self-regulation strategy' (subthemes: predictability and safety, coping with relational trauma, block out thoughts and emotions and managing physical pain). They depicted life in a 'drug community' (subthemes: morality, accessibility and normalisation within a subculture) where drugs are easily accessible, and normalised if you adhere to street rules and values. Descriptions alluded to a 'connection Vs disconnection' category (subthemes: disconnection, self-stigma and connection) where participants felt distanced and judged by others and disconnected as a way to protect themselves. Findings also indicated an 'incoherent sense of self – stuck in the here and now' with incoherent narratives and inconsistencies when describing their sense of control over their substance use. Participants would also flit between pro-substance use standpoints and self-stigmatising statements. Linked with this, there was little future planning, a sense of inevitability in their continued substance use and hopelessness for the future. In summary, the model outlined indicates that participant's attachment to their drug identify – sense of self, appears to be the main explanatory variable in preventing treatment seeking behaviour. Categories and sub-categories are described in detail below using pseudononymised excerpts from interviews.

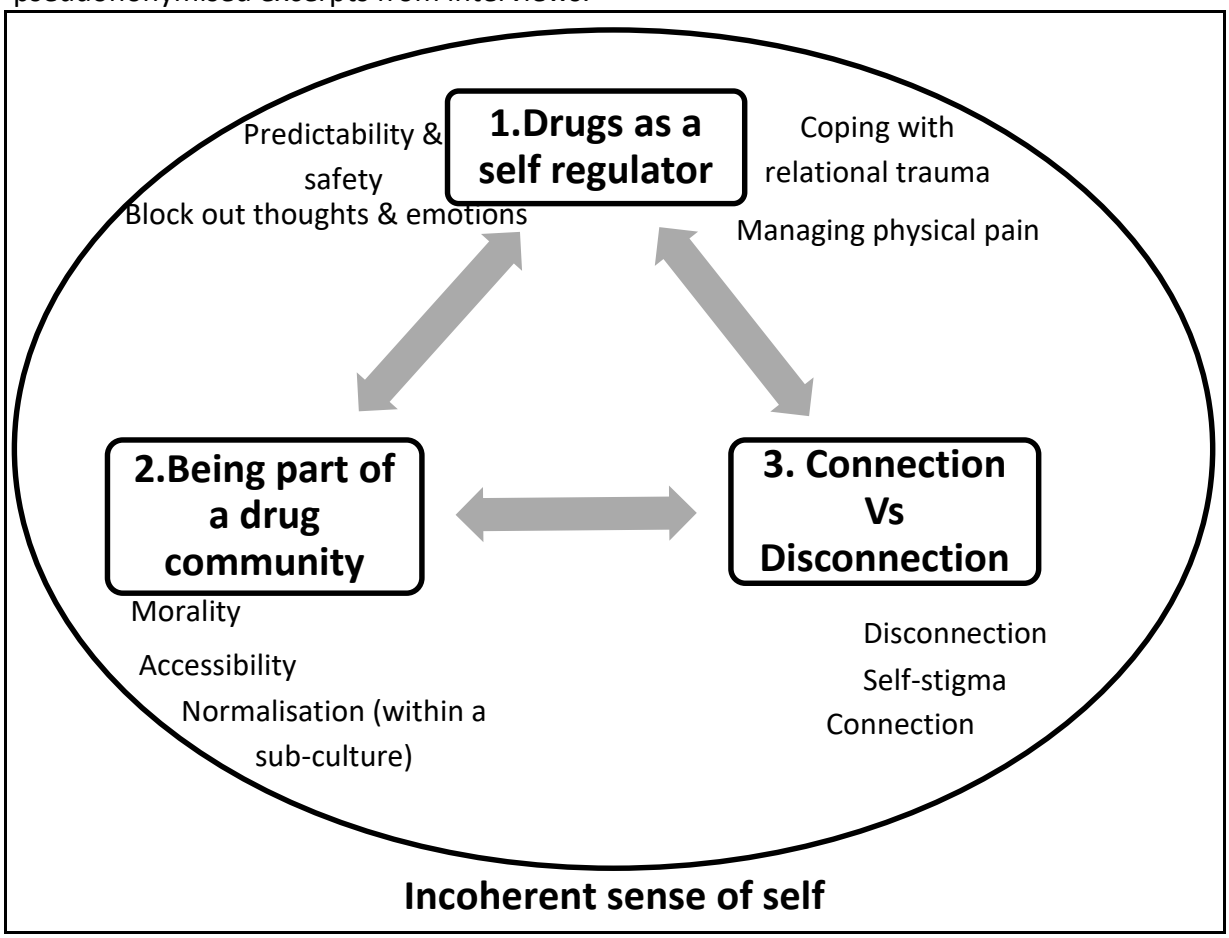

Figure 1 Drug identity – sense of self

1. ***Drugs as a self-regulator***

Across all interviews, the participants described using substances daily to regulate their emotions, thoughts, behaviour and physical pain.

i) Block out thoughts and emotions

All participants described an aspect of their continued substance use as a strategy to 'block out' or manage difficult thoughts or emotions.

> *Give us a burn of that heroin you know what I mean.... They are burning their problems away you know what I mean all the pressure that is on their head.* ***P8***

> *So, I had that in my head and I came up the road, my anxiety was to the hilt. I would have taken anything. I would have taken heroin, I've never taken heroin. But I would have taken heroin. To take that feeling away. If the devil came to me and said I'll take that away from you if you give me your soul I would have done it. I would have done it.* ***P5***

> *I think it was Just because I had been using for a long time by then and like I say I had just pulled the shutters down basically. And I was letting nothing in or out. It wasn't until I was sort of straight for a while, different things were coming to my mind, I started to think about different things then.* ***P7***

> *That's your day gone because you're thinking constantly. How did I dream that, you're thinking? How do I change that? Take something for it. What does it take? Maybe a fish supper? Maybe put a DVD on? Or I will abuse my medication.* ***P5***

ii) Predictability and safety

One participant described their substance use as so intrinsically linked with their view of the self that it appeared to be impossible to imagine life without it.

> *Me..... I don't know..... I don't know what life would be like without drugs actually...****P8***

One participant also described their substance use as providing a sense of stability.

> *It's always been.. always been there since… it's been just me.... so it's been me and drugs and we've become so close that basically drugs are my best friend....* ***P7***

Two participants also described their substance use as providing a sense of safety and protection without which they would feel exposed and restricted.

> *Basically, my main reason, as I say, I was on my own. So it made me feel safer. I didn't feel so vulnerable then. It was like a shield around me sort of thing, nothing bothered me, then you know like all my emotions, nothing came into it then.* ***P7***

If I got up and tried to go out the door without a drug in me, there is no way it could happen. I would be absolutely ill. ***P6***

iii) Managing physical pain

Two participants described their initial pathway into substance misuse as a means to manage physical pain. They both identified that although this was their original motivation, they quickly recognised the additional benefit as an emotion regulation strategy.

In 1988 I was badly beaten. They smashed my hands, put an axe in my head. I was pronounced dead in the ambulance. They brought me back to life. After that I was introduced to pain relief, Omnopon medicine. ***P5***

Oh aye, yeh, yeh. As I say, I started taking heroin as a pain killer..the doctor had said to take half of one of my dad's pain killers at the time...Declinol...and they sort of stopped working...it was around about '97 that I picked up a habit. ***P1***

iv) Coping with relational trauma

In addition, seven out of the eight participants described their substance use as a means to cope with experiences of relational trauma with five identifying this as the point their substance use escalated or became problematic.

Well, I was in and out of care. Mostly all my life. I was in social work care. I had them right until I was 18. So I was in and out of foster carers. We used to get beaten up aff of them. My maw was a drug addict herself. So I think that's why it spiralled out of control. My mum died 10 year ago with an overdose. ***P3***

Just about my mam and that cause she's no here anymore. She passed away so, it's quite hard you know what I mean, she was only 43 and that, so, that's not helped. ***P2***

*Well put it this way, as I said..I'd been to XX prison in 2013 and my mum died three weeks later…I've been to the graveyard once…my sister talked me into not carrying the coffin ….for my da…I can still choke her sometimes…but as I said it makes things like that a lot easier to deal with…until you start withdrawing….then you start greeting at adverts on the telly and that….your emotions just feel really bad, like ten fold…****P1***

I was getting into a lot of trouble, not going to school. I was in a children's home, I was coming up to my girlfriend, I just not long became a dad at 15 and I was sleeping rough. I had nowhere to live basically. I couldn't live at home because of my stepdad….. My drug use at that time…. It was… it was recreational basically at that time, after that, that's when it had become an everyday thing after that. ***P7***

2. Being part of a drug community

All participants described growing up in environments where illicit substances were readily available, and a number witnessed family substance use. Most normalised the substance use

of others around them and saw this as an experience which made them feel part of a group or as understandable given the environment they lived in.

> *I was down the woods and I'd seen the young team basically. The troopers. So, they were all doing it and I was like I want to do that, basically. To follow the crowd.* ***P2***

i) Normalisation (within a subculture)

Two participants described an early sense of inevitability in relation to their current circumstances due to the context of the environments they grew up in.

> *The way that I was.... and I think I knew back then that.... that I wasn't..... Not that I was going to end up like this.... You know disabled.... I think I knew back then that this was the way my life is going to be..... I am going to be a user.* ***P7***

> *I was just a.... wild child at the time you know what I mean.... I just didn't care for nobody you know what I mean..... I was born and bred in X .....in X when you were born and bred you really had to learn to fight before you could walk you know what I mean so..... It was just the way of life you know what I mean.....* ***P8***

Three participants described growing up around substances and witnessing family use. Of those, two said this led to parents being lenient in relation to their own use with the remaining participant describing an early aversion to substances due to witnessing his mum's difficulties.

> *Aye, well she used to take speed all the time. She was drinking an all, all the time. That's why I was going.. and basically f**k it, I don't care. I'll dae what I dae you know what I mean. If I see my maw doing it, I'm like, well she's no caring what we're doing, you know what I mean.* ***P3***

ii) Accessibility

Half of the participants also identified the easy accessibility of substances as contributing to their initial and continued use.

> *Everybody I know..... personally..... Or just to say alright to or whatever.... Is an addict of some sort. So, it's so easy and there's so much of it that its..... There's no... There doesn't seem to be a way of getting away from it..... Yeah, there doesn't seem to be a way of getting away from it.* ***P7***

> *When you do rehab they let you out and then put you in a hostel..... What's in a hostel as soon as you go in it?..... Drugs.... They are putting your right back into the vipers den..... You know what I mean and you're going to get mad with it again....****P8***

iii) Morality

Throughout the interviews all participants spoke of a moral code in relation to their substance use. For some this related only to the types of substances they would not use but for most

this related to how they would fund their drug use. Half reported paying for substances by selling to others, some received money from family and a number reported begging, stealing or shoplifting to fund their use. All participants described a strong sense that it was wrong to "steal handbags" to fund their substance use. This appeared to reflect a rule that it is unacceptable to steal for small amounts from the vulnerable, however, with larger scale crime there was almost a sense of notoriety and status. One participant noted the conflicting nature of this statement.

> *Well if you've not got four concrete walls around you then most junkies go out an…this is what gives most junkies a bad name….about 5-10% will rob grannies you know what I mean….I find it quite contradictory, in fact….if I rob you of £6 I'm a beast but if I rob you of £6000 then it's a turn….* ***P1***

3. Connection Vs disconnection

i) Disconnection

Throughout the narratives each participant described periods of disconnection from others. At times this involved disconnecting themselves due to lack of trust or to avoid a sense of shame. This involved separation from valued relationships with children and other family members. On other occasions families had disconnected from the participant due to their substance use and there were disconnections through death or relationship breakdowns leading to an escalation in substance use.

> *I don't know what I was trying to escape from but I think it was either.. if I had stayed I think I would either have killed myself, not deliberately but I would have died or I would have ended up in prison for a lot of.. a lot of years. So, my mum decided.. me and my mum decided that maybe it would be better if I moved away……Yes. When I was high I had no thoughts of it then. You know sort of thing. I was on my own basically. It was just me. You know. Looking after me, taking care of me. I went from recreational use maybe once or twice a week to every day.* ***P7***

> *I've got kids of my own..... I've got a 30, 33 year old daughter....em and....i've not seen her.... since she was seven... which was my choice..... Because she didn't have to see..... Really I thought she didn't have to see my..... The way that I was....* ***P7***

Social networks began to narrow so that remaining connections tended to be with other substance users. This appeared to lead to a sense of disconnection from wider society and a feeling of being misunderstood and judged by the system around them.

> *This government isn't interested in people like us. See if I was to get stabbed in the street..... I have been stabbed hundreds of times.. and see when I got took to the hospital the doctors don't want to deal with you.... So I am lying there for ages pissing of blood..... You know what I mean because I'm a drug user.....* ***P8***

ii) Self-stigma

This sense of being judged by others appeared to lead to some self-stigmatising beliefs and a focus on internal attributions in relation to control of their substance use. The narratives below illustrate how this also contributes to individuals being unwilling to access support to address their substance use.

> *No, it's just totally me. There's no point turning around and saying I blame him or I blame him. At the end of the day it's your fault you're the one that's doing it. So, there's no point in blaming Tom, Dick or Harry. You know what I mean. It's your own fault.* ***P6***

> *There's a lot of psychology involved, a lot of…. I mean we're manipulative, we're liars, we're cheats, we are everything. All these things. I can sit today and say I never lived my life properly. I didn't make the right moves, take the right street.* ***P5***

> *Aye, there was like, we used to always call them junkies. See when we were younger and that. There was hunners of them about X and we would see them and we would slag them and all of that. But now, I canny say nothing, you know what I mean, I'm one of them myself….**P3***

iii) Connection

One participant appeared to briefly contemplate what would motivate him to address his substance use which appeared to be related to re-establishing connections with his children.

> *…….. The only reason I would stop taking drugs would be if I got to see my wean again…….. One of my weans is down in London, she is a model you know what I mean……. My other wee lassie is coming up for 16….. So I am hoping to see her. I got told I wasn't allowed to see her because of my previous convictions. I have 147 previous convictions for drugs, violence and firearms. So they put us down as a violent person.* ***P8***

One participant had recently secured a permanent tenancy after over 10 years of rough sleeping. He described examples of different support organisations attempting to engage with him over the years without success. The following passage illustrates how the power of feeling a genuine connection with workers led to him getting a home.

Interviewee: I mean I never ever had a worker in all those years.... You know what I mean.... But once I met the volunteers from the XXX and XX that's when everything totally changed. You know for the better. Everything just totally changed it was like night and day. You know. It was great man. It's just having that key at night and you can just go in lock your door. Fantastic man.

Interviewer: What do you think was helpful about the people you had around you?

Interviewee: They just cared. Blatantly in my opinion they cared and they showed it. With the other ones down there it was just a job to them. They just passed the day. That was a big difference. ***P6***

4. Incoherent sense of self

Throughout the course of the interviews, narratives were often incoherent, jumping from one topic to another. At times this appeared to be triggered by discussing a particularly emotive subject.

It depends how they get them. If you get them mugging old grannies and all that.... then I've no time for them at all. Don't get me wrong I've no time for most of them. As I prefer to kind of..... See when I was at a funeral the other day... I mean that's boys I hadn't seen for about 20 years, some of them I could kind of recognise but they were coming up to me and going how have you been and that you know they were like you don't remember me do you? But it was good that way you know a lot of them were happy that I was backup this end. You know. They were saying will have to come up and keep an eye on you. Haha. Apart from the occasion it was a good day. ***P6***

During interviews, childhood trauma was often minimised with comments such as “it wasn’t that bad” or “that’s just the way it was”. When discussing childhood memories, participants were often over general, with idealised descriptions of caregivers.

I just enjoyed. I enjoyed the high from it. em.... Maybe there was something..... That I was trying to distract myself from. Em, but it's not something that comes to mind. There was no set thing I was trying to.... I did grow up in a ..... My step-dad was an alcoholic and em I grew up in a...in a... Household where there was violence. I saw my stepdad beat my mum up and things like that... I got involved in trying to help my mum and things like that..... So I think possibly that could be where I was trying to hide from..... ***P7***

There were also regular contradictions in relation to perceived sense of control over their substance use. Many individuals would shift from describing their substance use as a lifestyle choice that they make a conscious decision to continue, to describing a sense of powerlessness and vice versa.

So I would. I've not got a lot of control. Over it. I don't feel

(Later in the interview)

And if I really in my heart wanted to stop, doing what I was doing, I would stop but I enjoy it. That's the truth I enjoy it. I enjoy that peace. ***P5***

Oh I always had control of my drug use I've always had control of my drug use. It's always been my... It's always been my choice. It's never been forced on me you know it's always been my choice to do it.

(Later in the interview)

I've been getting drugs, not for free but I've been getting them on tick where it's got me into a lot of debt.... So that's..... It is out of my control at the minute..... I'm in the control of something else, not someone else, something else I'm not putting it on someone but something..... ***P7***

There also appeared to be an unwillingness or inability to forward plan or set future directed goals. Most descriptions of the future involved a sense of hopelessness or that it was too late for change.

Tomorrow was yesterday. Tomorrow is never going to come it's always been yesterday and that's just the way it is. And that's the way... You know.... That's the way it is going to stay.... ***P7***

*See the thing is, I don't want to die but..... If I don't wake up tomorrow morning, I don't really.... I'm not really that a**ed to be honest.....* ***P7***

The way I see it I've already done all the damage to my body. You know what I mean. I think that if I was to stop I probably wouldn't wake up you know what I mean. So I just keep on taking it for the sake of it you know what I mean. ***P8***

One participant directly addressed the fact that he feels driven to find a coherent sense of himself within the world and the associated distress when this feels unobtainable.

I keep back from my family I isolate. I want to be me but I don't know who me is. ***P5***

Discussion

Summary

The aim of the current study was to understand how individuals who use substances make sense of their behaviour and their reasons for not accessing treatment. The findings suggest that identity and relational variables influence treatment decisions for individuals who use substances. These individuals rely on their substance use to regulate many aspects of the self. They also describe life within a community where substances are easily accessible and normalised within the moral structure of "street rules". Relational trauma was common and often precipitated problematic substance use leading to social disconnection. Disconnection was also described as a coping strategy to avoid distress associated with self-stigma and shame. In contrast, a sense of connection was described as leading to more positive outcomes and motivation for change. All themes were accompanied by an incoherent sense of self and an identity enmeshed with substance use.

The finding that substances were used as a regulatory strategy was perhaps expected given the vast amount of literature on regulation theory (Schore & Schore, 2008). The results also fit with previous qualitative research where service users described the 'emotional levelling' effect of heroin and fear of experiencing emotions acting as a barrier to help-seeking (Notley et al, 2013). The common experience of disconnection is also supported by previous qualitative research where a sense of belonging (Blank et al, 2016) and relationship disconnection (Kreis et al, 2016) were identified as central to understanding substance misuse and help-seeking. It may be that the participants within the current study experienced a sense of belonging from being part of a drug community and a sense of connection from following the moral code of the streets, which acted as a barrier to addressing their substance use.

However, it is unique to identify these characteristics in a population of non-helpseeking substance users. This may be indicative of a particular attachment style that acts as a barrier to both acknowledging needs and helpseeking (Shaffer et al, 2006; Vogel & Wei, 2005). Experiences of relational trauma were common within the sample which corresponds with reported prevalence rates within substance misuse services (Charney et al, 2007; Driessen et al, 2008; Reynolds et al, 2005). Early childhood trauma has been related to an increased vulnerability for adult substance misuse and has been shown to impact on attachment development (Stone et al, 2012). Reviews have indicated that an insecure attachment style is more common within a substance misuse population (Fairbairn et al, 2018; Iglesias et al, 2014; Schindler et al, 2007; Schindler and Bröning, 2015). Existing evidence indicates that individuals with an insecure attachment style that is dismissing are more likely to under-report symptoms of psychological distress (Dozier & Lee, 2005) and are less likely to engage with treatment (Caspers et al, 2006). Furthermore, incoherent narratives as observed within the sample can act as a deactivating strategy with respect to potentially painful memories, which is a feature of a dismissing attachment style (Daniel, 2009; Main, 1991). Although this research did not directly assess the attachment styles of the participants, it is likely that the themes reflect characteristics of attachment insecurity.

It is clear from this grounded theory model that individuals choose not to seek treatment for their substance use for a number of complex and interrelated reasons. Understandably, engagement with treatment is challenging as often the first requirement is to surrender their usual coping strategy at a time when they are asked to show vulnerability by accepting support from others (Schindler, 2019). An attachment based approach to treatment and service design could be helpful by acknowledging that addressing substance misuse is likely to be more successful when a secure attachment is established. Additionally, there is tentative support from previous research which indicated an increase in attachment security after receiving treatment for substance misuse (Gighagen et al, 2018).

Strengths and limitations

The study provides an important contribution to the literature on this under researched population. It also provides further support that non-treatment seeking substance users are motivated to take part in research. As with all constructivist grounded theory research the methodological process and final theory are influenced by the researcher's own perceptions (Charmaz, 2014). Where possible, procedures were employed to ensure transparency and reflection including; memo writing, reflexivity statement and involvement of second author during analysis and interpretation. However, recruitment was challenged due to the complex nature of the client group and the unpredictable environments in which they reside. This resulted in little scope for theoretical sampling or member reflections which would have increased the methodological rigour of the study (Flick, 2008).

There was some variation in terms of substances used within the sample and settings from which they were recruited and the sample was entirely male and there is some evidence for gender differences within substance misuse populations (Chatham et al, 1999; Holloway & Bennett, 2007; Light et al, 2013). The population may also differ from those who refused or became too unstable to take part or those with different patterns of substance misuse (e.g. alcohol only). Despite this, it is important to stress the homogeneity of the sample and that the themes described within the model were consistent across participant responses.

Implications for future research

Findings indicate the importance of identity and relational variables in engaging individuals in substance misuse treatment. It is worth noting that all participants were engaged with some form of support agency, therefore an understanding of the type of help that they are willing to access out with substance misuse services is essential. Further insight into factors that promote helpseeking may be increased through exploration of staff, service and participant variables within this context. Longitudinal exploration of the model, where non-treatment seekers are followed up on a regular basis, could help establish whether there are any changes in identity or relational variables when an individual seeks help. Some of the participants within the study were engaged with their support service for a number of years. Therefore, regular contact may be possible despite the complex nature of the population. The paucity of research in relation to non-treatment seeking, at risk populations, remains evident despite national drivers to increase access to services. Understanding non-treatment seekers is

important to address barriers to treatment and to establish how services could be better structured to meet their needs. The current study provides further evidence that these individuals are willing to engage with research and so future projects should continue to build the evidence base with this under researched population (Fisher, 2011). Due to the time and resource constraints recruitment was focused on non- substance misuse support organisations (e.g. homeless services). However, it is recognised that there are many individuals with substance misuse difficulties that do not access any form of support (e.g. rough sleepers). Future studies may explore the model with those considered the hardest to engage with services as they are likely to be the most vulnerable. Where possible, research should also be conducted collaboratively with individuals, involving them meaningfully in each level of the research process.

Implications for clinical practice

This research suggests that opportunities may have been overlooked to tailor treatment for those who are not accessing current substance misuse services. The model identifies a number of important factors to consider including; understanding interactions within the context of attachment, the need to foster a sense of identity and connection unrelated to substance use and the importance of building capacity for self-regulation. By understanding what type of help these individuals are accessing this will identify workers that are best placed to foster initial connections and attachment security. Training for staff in relation to attachment and trauma that encourages reflection on their own attachment style and practice implications would be helpful (Moses, 2002; Schuengel et al, 2010). In addition, appropriate structures should be in place for staff supervision, team meetings and consultation to address challenges and reduce staff burnout (Edwards et al, 2006; Schulz et al, 1995).

Most of the current population had accessed some form of substance misuse service in the past. It is acknowledged that there are a high number of individuals who make initial contact with substance misuse services but do not commence or continue treatment (Boniface & Strang, 2019). Within the stepped care model, services could develop interventions targeted at this group. There is a small body of research which has explored recovery from substance misuse without formal help or treatment which could inform these interventions (Sobel et al, 2000). Sobell and Sobell (2000) suggested that in these circumstances we should “take the treatment to the people” and that alternative interventions that may better suit their needs should be made available. In line with this, individuals who make initial contact and then disengage could be provided with material that promotes self-change within an attachment based framework. With the current findings in mind, materials could include self-regulation strategies and community resources for building connections. This could be accompanied by a therapeutic letter aimed at instilling hope and reducing self-stigma. In turn, this could promote self-change with no further need for formal services or alternatively encourage earlier service engagement.

In conclusion, the factors influencing non-treatment seeking individual's substance use are complex. Traumatic relational experiences are likely to lead to under-developed regulation strategies. Easy access and normalisation of substance use mean this is quickly adopted to address the attachment needs that have not been met. Continued use leads to a sense of disconnection from others and any sense of identity or belonging is increasingly attached to a drug community. Service engagement would involve letting go of coping strategies and aspects of belonging. Disjointed narratives and inconsistencies in perceived control suggest an incoherent sense of self which impacts on the ability to forward plan and generate hope for the future. These factors may act as barriers to treatment and it is important for services to address these issues to increase engagement and outcomes for the most vulnerable.

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Appendices

Appendix 1: Psychology and psychotherapy: theory, research and practice: author guidelines (relevant sections)

Manuscript categories and requirements

Articles should adhere to the stated word limit for the particular article type. The word limit excludes the abstract, reference list, tables and figures, but includes appendices.

Review papers: 6000 words

All systematic reviews must be pre-registered.

Preparing the submission

Abstract

Please provide an abstract of up to 250 words. Articles containing original scientific research should include the headings: Objectives, Design, Methods, Results, Conclusions. Review articles should use the headings: Purpose, Methods, Results, Conclusions.

Keywords

Please provide appropriate keywords.

Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned. Thanks to anonymous reviewers are not appropriate.

Practitioner Points

All articles must include Practitioner Points – these are 2-4 bullet point with the heading 'Practitioner Points'. They should briefly and clearly outline the relevance of your research to professional practice. (The Practitioner Points should be submitted in a separate file.)

Main Text File: The main text file should be presented in the following order:

Title

Main text

References

Tables and figures (each complete with title and footnotes)

Appendices (if relevant)

Supporting information should be supplied as separate files. Tables and figures can be included at the end of the main document or attached as separate files but they must be mentioned in the text.

References

References should be prepared according to the Publication Manual of the American Psychological Association (6th edition).

Tables

Tables should be self-contained and complement, not duplicate, information contained in the text.

Figures

Although authors are encouraged to send the highest-quality figures possible, for peer-review purposes, a wide variety of formats, sizes, and resolutions are accepted.

Legends should be concise but comprehensive – the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement.

General Style Points

For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association.

Conflict of Interest

The journal requires that all authors disclose any potential sources of conflict of interest. Any interest or relationship, financial or otherwise that might be perceived as influencing an author's objectivity is considered a potential source of conflict of interest.

Funding

Authors should list all funding sources in the Acknowledgments section. Authors are responsible for the accuracy of their funder designation.

Authorship

All listed authors should have contributed to the manuscript substantially and have agreed to the final submitted version. Authorship is defined by the criteria set out in the APA Publication Manual.

Appendix 2: PROSPERO Protocol registration confirmation

PROSPERO Registration message [162605]

CRD-REGISTER <irss505@york.ac.uk>

Tue 17/12/2019 11:52

Dear X,

Thank you for submitting details of your systematic review "A systematic review of attachment and substance misuse: measurements and outcomes for clinical samples" to the PROSPERO register. We are pleased to confirm that the record will be published on our website within the next hour.

Your registration number is: CRD42019162605

You are free to update the record at any time, all submitted changes will be displayed as the latest version with previous versions available to public view. Please also give brief details of the key changes in the Revision notes facility and remember to update your record when your review is published. You can log in to PROSPERO and access your records at https://www.crd.york.ac.uk/PROSPERO.

Comments and feedback on your experience of registering with PROSPERO are welcome at crd-register@york.ac.uk

Is your team looking for a platform to conduct data extraction for your systematic review? SRDR-Plus is a free, powerful, easy-to-use systematic review data management and archival tool. You can get started here: http://srdrplus.ahrq.gov.

Best wishes for the successful completion of your review.

Yours sincerely,

PROSPERO Administrator
Centre for Reviews and Dissemination
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York YO10 5DD
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PROSPERO is funded by the National Institute for Health Research and produced by CRD, which is an academic department of the University of York.

Email disclaimer: https://www.york.ac.uk/docs/disclaimer/email.htm

Appendix 3: Quality appraisal tool

Quality appraisal tool

Checklist items are worded so that 1 of 5 responses is possible:

Well covered	Indicates that for that particular aspect of study design, the study has been designed or conducted in such a way as to minimise the risk of bias.
Adequately addressed	Indicates that either the answer to the checklist question is not clear from the way the study is reported, or that the study may not have addressed all potential sources of bias for that particular aspect of study design.
Poorly addressed	Should be reserved for those aspects of the study design in which significant sources of bias may persist.
Not reported (NR)	Should be reserved for those aspects in which the study under review fails to report how they have (or might have) been considered.
Not applicable (NA)	Should be reserved for those study design aspects that are not applicable given the study design under review (for example, allocation concealment would not be applicable for case–control studies).

Study identification: Include full citation details	
Study design:	
Guidance topic:	
Assessed by:	

Section 1: Population		
1.1 Is the source population or source area well described? • Was the country (e.g. developed or non-developed, type of health care system), setting (primary schools, community centres etc), location (urban, rural), population demographics etc adequately described?	Well covered Adequately addressed Poorly addressed NR NA	Comments:
1.2 Is the eligible population or area representative of the source population or area? • Was the recruitment of individuals, clusters or areas well defined (e.g. advertisement, birth register)? • Was the eligible population representative of the source? Were important groups underrepresented?	Well covered Adequately addressed Poorly addressed NR NA	Comments:
1.3 Do the selected participants or areas represent the eligible population or area? • Was the method of selection of participants from the eligible population well described? • What % of selected individuals or clusters agreed to participate? Were there any sources of bias? • Were the inclusion or exclusion criteria explicit and appropriate?	Well covered Adequately addressed Poorly addressed NR NA	Comments:

Section 2: Outcomes		
2.1 Were the outcome measures and procedures reliable? • Were outcome measures subjective or objective (e.g. biochemically validated nicotine levels ++ vs self-reported smoking −)? • How reliable were outcome measures (e.g. inter- or intra-rater reliability scores)? • Was there any indication that measures had been validated (e.g. validated against a gold standard measure or assessed for content validity)?	Well covered Adequately addressed Poorly addressed NR NA	Comments:
2.2 Were the outcome measurements complete? • Were all or most of the study participants who met the defined study outcome definitions likely to have been identified?	Well covered Adequately addressed Poorly addressed NR NA	Comments:
Section 3: Analyses		
3.1 Was the study sufficiently powered to detect an intervention effect (if one exists)? • A power of 0.8 (i.e. it is likely to see an effect of a given size if one exists, 80% of the time) is the conventionally accepted standard. • Is a power calculation presented? If not, what is the expected effect size? Is the sample size adequate?	Well covered Adequately addressed Poorly addressed NR NA	Comments:

3.2 Were multiple explanatory variables considered in the analyses? • Were there sufficient explanatory variables considered in the analysis?	Well covered Adequately addressed Poorly addressed NR NA	Comments:
3.3 Were the analytical methods appropriate? • Were important differences in follow-up time and likely confounders adjusted for?	Well covered Adequately addressed Poorly addressed NR NA	Comments:
3.4 Was the precision of association given or calculable? Is association meaningful? • Were confidence intervals or p values for effect estimates given or possible to calculate? • Were CIs wide or were they sufficiently precise to aid decision-making? If precision is lacking, is this because the study is under-powered?	Well covered Adequately addressed Poorly addressed NR NA	Comments:
Section 4: Overall score		
4.1 Are the study results internally valid (i.e. unbiased)? • How well did the study minimise sources of bias (i.e. adjusting for potential confounders)? • Were there significant flaws in the study design?	Good All or most of the checklist criteria have been fulfilled, where they have not been fulfilled the conclusions are very unlikely to alter.	Comments:

4.2 Are the findings generalisable to the source population (i.e. externally valid)? • Are there sufficient details given about the study to determine if the findings are generalisable to the source population? Consider: participants, interventions and comparisons, outcomes, resource and policy implications.	Adequate Some of the checklist criteria have been fulfilled, where they have not been fulfilled, or not adequately described, the conclusions are unlikely to alter. Poor Few or no checklist criteria have been fulfilled and the conclusions are likely or very likely to alter.	

Appendix 4: Attachment and human development: author guidelines (relevant sections)

Empirical Reports, Theory/Review Papers and Clinical Case Studies

Should be written with the following elements in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list)

Should be between 6000 and 7500 words, inclusive of the abstract.

Style Guidelines

Any spelling style is acceptable so long as it is consistent within the manuscript. Please use double quotation marks, except where "a quotation is 'within' a quotation". Please note that long quotations should be indented without quotation marks.

Title: Use bold for your article title, with an initial capital letter for any proper nouns.

Abstract: Indicate the abstract paragraph with a heading or by reducing the font size. Check whether the journal requires a structured abstract or graphical abstract by reading the Instructions for Authors. The Instructions for Authors may also give word limits for your abstract.

Keywords: Please provide keywords to help readers find your article. If the Instructions for Authors do not give a number of keywords to provide, please give five or six.

Headings: Please indicate the level of the section headings in your article:

1. First-level headings (e.g. Introduction, Conclusion) should be in bold, with an initial capital letter for any proper nouns.

2. Second-level headings should be in bold italics, with an initial capital letter for any proper nouns.

3. Third-level headings should be in italics, with an initial capital letter for any proper nouns.

4. Fourth-level headings should be in bold italics, at the beginning of a paragraph. The text follows immediately after a full stop (full point) or other punctuation mark.

5. Fifth-level headings should be in italics, at the beginning of a paragraph. The text follows immediately after a full stop (full point) or other punctuation mark.

Tables and figures: Indicate in the text where the tables and figures should appear, for example by inserting [Table 1 near here]. You should supply the actual tables either at the end of the text or in a separate file and the actual figures as separate files.

Spelling and punctuation: Each journal will have a preference for spelling and punctuation, which is detailed in the Instructions for Authors. Please ensure whichever spelling and punctuation style you use, you apply consistently.

References

Please use this reference guide [APA] when preparing your paper.

Checklist: What to Include

1. Author details. All authors of a manuscript should include their full name and affiliation on the cover page of the manuscript.

2. You can opt to include a video abstract with your article.

3. Funding details. Please supply all details required by your funding and grant-awarding bodies as follows:

For single agency grants

This work was supported by the [Funding Agency] under Grant [number xxxx].

For multiple agency grants

This work was supported by the [Funding Agency #1] under Grant [number xxxx]; [Funding Agency #2] under Grant [number xxxx]; and [Funding Agency #3] under Grant [number xxxx].

4. Disclosure statement. This is to acknowledge any financial interest or benefit that has arisen from the direct applications of your research. Further guidance on what is a conflict of interest and how to disclose it.

5. Data availability statement. If there is a data set associated with the paper, please provide information about where the data supporting the results or analyses presented in the paper can be found.

6. Data deposition. If you choose to share or make the data underlying the study open, please deposit your data in a recognized data repository prior to or at the time of submission. You will be asked to provide the DOI, pre-reserved DOI, or other persistent identifier for the data set.

7. Supplemental online material. Supplemental material can be a video, dataset, fileset, sound file or anything which supports (and is pertinent to) your paper.

8. Figures. Figures should be high quality (1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour, at the correct size).

9. Tables. Tables should present new information rather than duplicating what is in the text. Readers should be able to interpret the table without reference to the text.

10. Equations. If you are submitting your manuscript as a Word document, please ensure that equations are editable. More information about mathematical symbols and equations.

11. Units. Please use SI units (non-italicized).

Appendix 5: Statement of reflexivity

The following statement is aimed at increasing transparency and is compiled from reflective notes written by the main researcher in 2018.

When reflecting on my previous experience working within a third sector housing support service, I noticed that for many individuals, this was the only support they received. During clinical psychology training I've worked within a number of different services and often think about how this support would have been beneficial for those individuals I had worked with previously. Throughout both my personal and professional life I have spent time with people who use substances and noticed the far reaching impact this can have. I also notice my frustration when someone is struggling with these difficulties alone when I know there are lots of good support services out there that could help.

It is due to this that I believe it is important for these individuals to be given the opportunity to be heard as it is all too easy for services to label them "hard to reach" or "not willing to engage" without fully understanding why. I think this experience has helped shape my research question but I also noticed my reluctance to set myself the challenge of engaging with this population. I believe my previous experience and my passion for giving this population a voice, helped me overcome this apprehension.

I noticed my trepidation at asking questions that required each participant to be so open about their substance use, particularly in the context of not wanting to stop. This influenced my initial interview schedule and I was mindful in wording questions in a way that appeared neutral and unbiased. I was also aware that my role as a trainee clinical psychologist would impact on participant's views of what I would be looking for during the interview - would they feel they have to say they wanted to address their substance use? Or would they worry about the impact on the services they received?

I am also aware that the style of interviewing is very different in comparison to clinical interviews. During clinical interviews I would be making sense of information, reflecting this back and encouraging changes in thinking and behaviour. I would have to be particularly mindful not to influence the participant's responses due to this and stay grounded in the data.

From my previous experience working with individual's who misuse substances I am aware of my belief that this is often a coping strategy as a way to manage distress and many individuals have experienced significant trauma throughout their lives. I am also aware of the stigma experienced by those who misuse substances even within health professions. Ultimately, I believe that substance misuse should be understood within a trauma and attachment framework.

Appendix 6: Participant information sheet

THE UNIVERSITY of EDINBURGH

NHS Lanarkshire

Participant Information Sheet

Deciding not to seek help for substance use-telling your story

We would like to invite you to take part in a research study.

Before you decide whether or not to take part, it is important for you to understand why the research is being done and what will happen to you.

Please take time to read this information and decide if you want to take part.

You can talk to other people about the study to help you decide and we will make sure any questions you have are answered.

Why are we doing the study?

People who use substances (e.g. heroin, cocaine, cannabis, amphetamines) have more mental health, physical health, housing, financial and legal problems compared to other people.

We also know that lots of people who use substances **don't want help to stop**.

We believe it is important for organisations to listen carefully to those with ***lived experience*** to understand why some people choose ***not*** to get help to stop their substance use.

We also believe that sharing your own story can be a powerful way to inform, inspire and challenge others.

We would like to gather the stories of around 15-20 people who feel they want to be heard too.

Why have I been invited to take part?

You have been asked to take part as you are someone who has ***lived experience*** of ***currently*** using substances and you are ***not*** currently seeking formal help to stop.

Do I have to take part?

No, it is up to you to decide whether or not to take part.

If you decide to take part you will be asked to sign a **consent form**. Even when you sign the form, you can change your mind and pull out at any time.

Deciding not to take part or withdrawing from the study **will not affect the services that you receive, or your legal rights.**

What will happen if I take part?

1. **First Meeting;** (15-30 mins) a member of staff will meet with you to read and explain this information sheet and answer any questions.
    I. You will then have **24hrs to 1 week to think things over** before you agree to take part.
    II. If you don't want to take part after meeting, that's okay too. No one will approach you to take part again.

2. **Telling your story;** if you decide to take part Sarah (the researcher) will arrange a time to meet that suits you. You will meet in a quiet and private place where you feel comfortable. You will have the chance to ask any questions you might have and Sarah will explain the **consent** process and ask you to sign a consent form. During the interview, you can have lots of breaks or split this up over two days if you want. Drinks and snacks will also be available. The interviews will involve two parts.
    I. **Part 1** (30-60 minutes) In the first part you will get to tell your story about your substance use and why you choose ***not*** to get help for this.
    II. **Part 2** (45-60 minutes) in the second part Sarah will ask some questions about your relationships growing up and how you think and feel about these.

Is there anything I need to do or avoid?

It's important that you're able to have a good chat with the researcher and that you can both understand each other. So we would like you to **not be under the influence of substances or alcohol at the time of the interview.**

What are the possible benefits of taking part?

There is no personal benefit to you by taking part in this study.

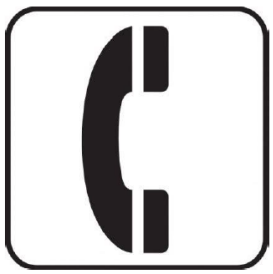
We hope you feel your story, views and beliefs will be heard by organisations and by people who might have experienced the same things you have or feel the same way you do.

What are the possible disadvantages of taking part?

We are aware that some of the things you may be talking about might be upsetting. You can tell the researcher if you're feeling upset and decide whether you want to take a break or stop the interview.

Remember you are in control of what you do or don't talk about.

You will be given information and contact numbers of people you can talk to about how you are feeling. You can also tell the researcher if you are upset and they can make sure you get support.



What if there are any problems?

If you have a concern about any part of this study please contact Sarah Lawson (Researcher) who will do her best to answer your questions (details at end).

If you would like to discuss taking part **with someone who is not involved in the study** you can contact Dr Angus Macbeth (details at the end).

In the unlikely event that something goes wrong during the research and this is due to someone's carelessness then you may have grounds for a legal action for compensation against NHS Lanarkshire but you may have to pay your legal costs.

The normal NHS complaints procedures would still be available to you too (details at end).

What will happen if I don't want to carry on with the research?

- You can change your mind about taking part in this research at any time, even after you've signed the consent form.
- If you do choose to pull out you can ask for your recording to be deleted (if not already done so).
- If the research is at the stage where your recording has been typed up and you can no longer be identified it may not be possible to delete this as it may be combined with other participant's information.

Will my taking part be kept confidential?

All the information we collect during the course of the research will be kept confidential and there are strict laws which keep your information safe at every stage.

I. When you have your chat with Sarah this will be recorded on a **digital voice recorder.** This is so she remembers everything you have said.

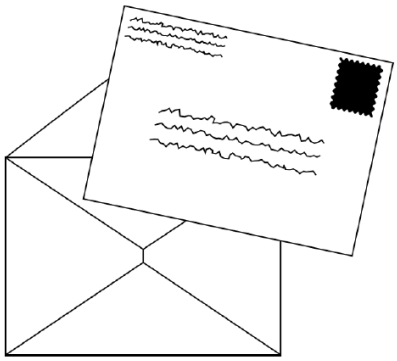
II. No one except Sarah will be able to listen to the recording as it will be **password protected**. Sarah will then type this up removing any names or anything that identifies you. Your recording will then be deleted which means that what you have said will be **anonymous.**

III. It will then be stored on a computer with a password. So all your information will be kept safe.

IV. Your personal information (e.g. consent forms, contact details) will be stored separately from the research data (e.g. non-identifiable, typed up interviews).

Who will we share information with?

I. In order to monitor the study we will ask **your consent** for responsible supervisors from the University of Edinburgh and NHS Lanarkshire to access your data too.
II. With **your consent** we will contact your GP to inform them you are taking part.
III. The only times we will share information **without your consent** will be if you say something that makes us think you may be a risk of harming yourself or someone else. If this happens will contact other professionals involved in your care and possibly the police. If you tell us about something that is a criminal offence we may also need to contact the police.



What will happen to the results of the study?

This study will be written up as a report however you **won't be identifiable** in any of the information. The results may also be presented at conferences or other events.

If you would like a copy of the results of the study, you can let Sarah know and also decide how you would like these given to you (e.g. written letter, telephone call, face to face).

Who is organising and funding the research?

This study has been organised by the University of Edinburgh and NHS Lanarkshire. The University of Edinburgh is sponsoring the research as part of Sarah's thesis project on the Doctorate in Clinical Psychology training program.

Who has reviewed the study?

The study proposal has been reviewed and approved by the University of Edinburgh ethics committee.

All research in the NHS is looked at by an independent group of people called a Research Ethics Committee. A favourable ethical opinion has been obtained from West Midlands – Coventry & Warwickshire Research Ethics Committee.

NHS management approval has also been given through the NHS Lanarkshire Research and Development team.

Researcher Contact Details

If you have any further questions about the study please contact the names below.

Researcher
Sarah Lawson
Trainee Clinical Psychologist
Addictions Psychology Service
Coathill House (HQ)
Old Monkland Rd
Coatbridge
ML5 5EA
(01236) 707 183

Clinical Supervisor
Dr Michelle Cook
Co-Head of Addiction psychology Service
Addictions Psychology Service
Coathill House (HQ)
Old Monkland Rd
Coatbridge
ML5 5EA
(01236) 707 183

Academic Supervisor
Dr Helen Griffiths
Lecturer in Clinical Psychology
School of Health and Social Science
University of Edinburgh
Teviot Place
Edinburgh
EH9 9AG
(0131) 6503482

Independent Contact
Dr Angus Macbeth
Lecturer in Clinical Psychology
School of Health and Social Science
University of Edinburgh
Teviot Place
Edinburgh
EH9 9AG
(0131) 6503482

For general information about how we use your data go to:

https://www.ed.ac.uk/records-management/privacy-notice-research

If you wish to raise a complaint on how we have handled your personal data, you can contact our **Data Protection Officer** who will investigate the matter. If you are not satisfied with our response or believe we are processing your personal data in a way that is not lawful you can complain to the Information Commissioner's Office (ICO) at https://ico.org.uk/

Data Protection Officer contact information:

University of Edinburgh Data Protection Officer
Governance and Strategic Planning
University of Edinburgh
Old College
Edinburgh
EH8 9YL

Tel: 0131 651 4114
dpo@ed.ac.uk

Complaints

If you wish to make a complaint about the study please contact:

Laura Jack
Patient Affairs Manager
NHS Lanarkshire Headquarters
Kirklands
Fallside Road
Bothwell
G71 8BB
Phone 01698 858 321
Email: PatientAffairs.Primarycare@lanarkhire.scot.uk

Appendix 7: Semi-structured interview schedule

I would like to talk to you about your personal experiences in relation to your drug use both currently and in the past. I'm interested in hearing all the details you remember that, in your opinion, are connected to you taking drugs.

1. Can you tell me about your first experiences with drugs? This might be the first time you saw other people take drugs or the first time you tried them yourself. Tell me as much detail as you can remember about your life around this time.
    a. Describe your relationship with people (family/partner/friends) closest to you at that time.
        i. What did that relationship mean to you?
        ii. How was it different from your other relationships?
        iii. How do you think that relationship might have influenced (positive/negative) your drug use?

2. Please can you tell me how your drug use progressed from there? When did you start using drugs regularly? As before, with as much detail as you can remember.

3. How much control do you feel you have in relation to your drug use?

    a. If you feel you have no control… can you describe the point when you felt, you had lost control *(*i.e. when you felt addicted or dependent on drugs?)

4. Can you tell me what your thoughts and feelings are in relation to people who take drugs?

5. Can you describe any rules you set yourself in relation to your drug use or the ways in which you might fund your drug use?
    a. Can you describe anything that might be important to you in terms of your health?

6. Have you ever tried or wanted to stop your drug use?
    a. If so... could you describe what this was like?
    b. What was helpful or unhelpful for you at this time?
    c. Are there any memories or incidents that come to mind with respect to…?

7. What do you think would be helpful for me to understand why you don't want to stop taking drugs now?

8. Tell me about the people closest to you now (partner/family/children) – describe your relationship with them. (Prompts: what does that relationship mean to you? How is it different from your other relationships?)

9. Is there something else that you think I should know to understand your drug use?

Appendix 8: Ethical approval

NHS
Health Research Authority

West Midlands - Coventry & Warwickshire Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

15 October 2018

Ms Sarah Lawson
Trainee Clinical Psychologist
NHS Lanarkshire
Coathill Hospital
Hospital St
Coatbridge
ML5 4DN

Dear Ms Lawson

Study title:	**Deciding not to seek help for substance use: Exploring the role of attachment and reflective function**
REC reference:	**18/WM/0273**
Protocol number:	**CAHSS1807/03**
IRAS project ID:	**250716**

Thank you for your letter of 09/10/2018, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact hra.studyregistration@nhs.net outlining the reasons for your request.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation

as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA and HCRW Approval (England and Wales)/ NHS permission for research is available in the Integrated Research Application System, at www.hra.nhs.uk or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non-NHS sites

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Leaflet V1]	1	06 August 2018
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Professional Indemnity Confirmation]	1	31 July 2018
GP/consultant information sheets or letters [GP Letter V1]	1	06 August 2018
Interview schedules or topic guides for participants [Adult Attachment Interview Protocol]	1	06 August 2018
IRAS Application Form [IRAS_Form_10082018]		10 August 2018
Other [Public Liability Confirmation]	1	24 July 2018
Other [Certificate of Employers Liability Insurance(]	1	01 August 2018
Other [Clinical Trial Liability]	1	31 July 2018
Other [Good Clinical Practice Course Certificate]	1	10 January 2018
Other [Participant Debrief Form V1]	1	06 August 2018
Other [Cover Letter response to provisional opinion]	1	09 October 2018
Participant consent form [Consent Form V1]	1	06 August 2018
Participant information sheet (PIS) [Participant Information Sheet V1]	2	09 October 2018
Research protocol or project proposal [Protocol V1]	1	29 July 2018
Summary CV for Chief Investigator (CI) [CI CV]	1	23 July 2018
Summary CV for student [Student CV]	1	23 July 2018
Summary CV for supervisor (student research) [Academic Supervisor CV]	1	22 August 2017

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:
http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

18/WM/0273	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project.

Yours sincerely

Dr Helen Brittain
Chair
Email:NRESCommittee.WestMidlands-CoventryandWarwick@nhs.net

Enclosures: "After ethical review – guidance for researchers" *[SL-AR2]*

Copy to: *Ms Charlotte Smith*
Raymond Hamill, NHS Lanarkshire - Primary Care Division

Appendix 9: Coding examples

Examples of coding and memos from an excerpt of transcript from participant 7.

Transcript	Coding	Memo
I: ***… Tell me as much detail as you can remember about your life around this time.***		
P7: Well really my first experience with taking drugs was trial and error basically. It was the early 80s and other people we're doing drugs and different things and I started then and it became the case I liked what I was doing, it wasn't a case that I was doing it because of anything bad that happened. I enjoyed taking drugs.	**Experimenting with drugs** **Noticing other people were trying drugs around this time too** **Beginning to enjoy drugs** **Not relating drug use to difficult experiences but to enjoyment**	Sense that drug use was normalised? Trial and error before "enjoying" drug use. Feeling the need to emphasise the enjoyment as opposed to it being a coping strategy.
I: ***What was it that you enjoyed about it?***		
P7: I just enjoyed. I enjoyed the high from it. em.... Maybe there was something..... That I was trying to distract myself from. Em, but it's not something that comes to mind. There was no set thing I was trying to.... I did grow up in a ..... My step-dad was an alcoholic and em I grew up in a...in a... Household where there was violence. I saw my stepdad beat my mum up and things like that... I got involved in trying to help my mum and things like that..... So I think possibly that could be where I was trying to hide from..... And then so got to the stage where I enjoyed taking the drugs. To begin with then it got to the stage where I have to keep taking the drugs.... Well I don't have to but then I get to withdrawal stages if I wasn't taking them. That's when I started the continuance of it. Basically that's really where it started from and why it continues. As years went on it went from days to weeks and from weeks to months and from months to years. I was out thieving a lot. To get money to buy drugs and in and out of prison. Then I moved down south for 25 years from like 1995 in X from then and basically it was a sort of escape thing.	**Enjoying feeling high** **Considering drug use might be a distraction** **Finding it hard to think what this might be** **Stepdad had difficulties with alcohol addiction** **Experiences of violence at home when young** **Witnessing domestic violence** **Trying to protect his mum** **Feeling this was something he wanted to hide from** **Enjoying taking drugs** **Drug use now seen as a necessity** **If don't take drugs then experience withdrawals** **Continue use due to this** **That's where it started and why it keeps going** **Time extended from days to weeks to years** **Stealing to be able to pay for drugs and going to prison. Moved down South** **Taking drugs to escape**	Quickly changes to considering drug use was a coping strategy. Finding it difficult to acknowledge what he may have been distracting himself from. Identifies parental substance misuse and childhood trauma. Drug use as a means to "hide" from difficulties? Sense that there was initial enjoyment or highs from drug use and then it became a way of life or daily necessity as opposed to enjoyable? Ambivalence related to whether he does or doesn't have to take drugs. Continued use to avoid withdrawal symptoms. Sense that drug use continues due to physical addiction/avoidance of withdrawals? Time passing quickly? Each day blending into the other? Sense of being stuck? Additional trauma related to crime and prison? Escape – difficulties with distress tolerance?