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Relationship between recalled parental bonding, adult attachment patterns and severity of heroin addiction

Abstract

Introduction: Due to its association with emotional distress and deficits in coping, insecure attachment presents a strong risk factor for a variety of psychopathologies, including substance use disorders. This study reports on the relationship between recalled parental bonding, adult attachment patterns and severity of heroin addiction.

Methods: Data were obtained from 54 individuals with heroin use disorder (HUD) and 54 control groups. Participants with HUD were recruited from an outpatient clinic at the hospital in London. Differences between individuals with HUD and control group in recalled parental bonding and adult attachment style and experiences were examined with independent t-test and binary logistic regression. Relationship between severity of heroin addiction, parental bonding and adult attachment style was investigated with Pearson correlation test and multiple regressions.

Results: Groups significantly differed in maternal care (p=0.047), paternal care (p=0.027), paternal protection (p=0.001) and all variables regarding adult attachment style (Close, p<0.0005; Depend, p<0.0005; Anxiety, p=0.0015). Paternal protection (ß=0.096, p=0.009) and Close Score (ß=-0.196, p=0.013) offered a unique and significant contribution to the prediction of heroin addiction. There was significant correlation between addiction severity and father protection (r=0.259, p=0.029), Depend score (r=-0.240, p=0.04) and age (r=-0.25, p=0.034).

Conclusion: The study revealed significant differences between individuals with HUD and control group in recalled parental bonding and adult attachment patterns. These findings carry useful implications for addiction treatment and emphasize the importance of building strong therapeutic alliance to help facilitate change. Further research is needed to investigate sensitive predictors of addiction severity.

Keywords: attachment theory, heroin addiction, heroin dependence, heroin, insecure attachment, parental bonding

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Abbreviations: HUD, heroin use disorder; SUDs, substance use disorders; OST, opioid substitution therapy; SODQ, severity of opioid dependence questionnaire; SADQ, severity of alcohol dependence questionnaire; RAAS, revised adult attachment scale; PBI, parental bonding instrument; AAI, adult attachment interview

Introduction

Recent decades have been characterized by a growing interest in the relationship between attachment and psychopathology,[1,2] with numerous studies confirming the connection between insecure attachment patterns and a variety of mental health disorders.[3,4] Substance use disorders (SUDs) are also highly related to insecure attachment. However, due to complexity of SUDs, there remain a number of open questions, particularly with regard to possible interactions with co-occurring psychiatric disorders which are very common amongst population of dependent drug users. For example, in their study of 133 drug addicts, Khantzian & Treece,[5] discovered that 93% met the criteria for one or more psychiatric disorders other than SUD, with depression and personality disorders being the most prominent. Brooner, Schmidt, Felch & Bigelow,[6] studied with 237 intravenous drug users and discovered that 44% met the DSM-III-R criteria for diagnosis of antisocial personality disorder.

Based on the hypothesis that substances are chosen due their specific emotional and social effects, Schindler et al.,[4] have shown the differences in attachment patterns amongst users of different substances, namely opioids, cannabis and ecstasy. The current study narrows the focus solely on dependent use of heroin and aims to investigate whether there are differences in attachment patterns amongst individuals dependent on heroin with different levels of severity of addiction. More specifically, the study will analyse the relationship between recalled parental bonding in childhood, adult attachment patterns and severity of heroin addiction in terms of intensity of physical and affective withdrawal, withdrawal relief drug-taking and rapidity of reinstatement of withdrawal symptoms after a period of abstinence. These variables will be examined both by making comparisons between a group of individuals with heroin use disorder (HUD) and a control group, and by comparing subgroups of individuals with HUD. The study starts with the theoretical framework of attachment theory, following by description of a general model of the link between SUDs and insecure attachment patterns.

Attachment theory is one of the most influential theories of development and has implications for both personality and psychopathology across the life span. Integrating the principles from psychoanalysis, ethology, evolution, cognitive psychology, and

developmental psychology, Bowlby[7–9] developed the theory which promoted importance of affectional bonding between infants and their caregivers and recognized life-long effects of early attachment experiences on interpersonal functioning, personality development and psychological disorders.[10]

Attachment theory is based on the premise that children will feel secure in their relationship with their attachment figure to the extent that the attachment figure provides consistent, warm, responsive, attuned and sensitive care. This enables a child to use the attachment figure as a secure base which provides a springboard for curiousity and exploration. A securely attached child knows that, in times of danger and need, he can rely on the attachment figure to be available and responsive. This knowledge allows him to feel safe and able to focus on other activities without being preoccupied with keeping proximity with the attachment figure. On the other hand, if attachment figure does not provide consistent and responsive care and is essentially not attuned to child's needs, the child develops a feeling of insecurity and inability to use the attachment figure as a secure base.[10–12]

The attachment system is the first among the interpersonal motivational systems that becomes activated in infancy, meaning that first interpersonal patterns are constructed primarily under its influence. The attachment system with its affects of fear, pain, distress, separation anxiety and joy at reunion after separation, therefore plays a key role in construction of implicit knowledge of interpersonal relationships that is formed in early childhood through repetitive transactions between the infant and its caregivers. These transactions accumulate and are generalized on later attachment relationships throughout the cognitive representations of self and others, known as internal working models which essentially become the regulators of further activities of the attachment system.[8,13–15] The model regarding self reflects person's belief in their worth of love and attention of others, whilst the model regarding others concerns person's expectations with regard to likely responses of others to their request for support and comfort. Early life relationship with the primary attachment figure therefore serves as a prototype of later relationships which is highly persistent and often lasts throughout the lifetime. If the attachment figure has consistently acknowledged infant's needs for comfort and safety, as well as for independent exploration, the child is likely to have developed an internal working model of self as worthy and valuable. On the other hand, if infant's needs for protective proximity, comfort and independent exploration were not recognized or were repeatedly rejected, a child is likely to develop a perception of himself as unworthy, unlovable and incompetent. Throughout repeated interactions with his attachment figure, he internalizes these constructs and uses them as predictors of others' behaviours.[8,16–19]

By the end of the first year of life, four main attachment paterns are developed, each linked to corresponding patterns of the caregiver's parenting behaviour and characterized by a specific internal working model. These patterns are secure, avoidant, ambivalent/preoccupied and disorganized/disoriented, first three being instances of organized behaviour and attentional orientation, whilst the last one being essentially disorganized and non-consistent, strongly affected by defensive processes of idealization, repression, intellectualization and denial. Secure pattern is based on the parenting behaviour that was consistently supportive, sensitive and available; avoidant pattern on rejecting and distant parental behaviour, ambivalent or preoccupied on unpredictably available or intrusive parental behaviour and disorganized on parental behaviour that was essentially frightening or frightened, mostly due to unresolved losses or traumas.[15,20–22] Once established, affectional bond is highly persistent to ceasing, even if attachment figure consistently fails to satisfy child's needs for protection, comfort and safety. According to Bowlby[7,8] the strength of attachment bonds is unrelated to quality of attachment relationships, meaning threathened individuals with seek proximity to their attachment figure even when the very same attachment figure is the original source of trauma and threat. This can go to the extended that the attachment might not only persist but could actually be enchanced by the punitive attachment figure that routinely creates the circumstances for the attachment system to be activated.[7,19]

Individuals' experiences of sensitive parenting and their attachment patterns can be explored as a way of understanding the origins and the characteristics of various forms of psychopathologies, including SUDs. Since insecure attachment is strongly associated with emotional distress and deficits in coping, this can offer one explanation for a higher risk for development of SUD. On the other hand, secure attachment, manifesting itself in flexible and functioning ways of coping and effective emotional regulation, normally serves as a strong protective factor.[4]

Numerous researchers have proposed understanding of drug use as a coping mechanism which people resort to because they have failed to develop adaptive responses to stress.[23–26] In accordance with self-medication hypothesis, Khantzian[27] argued that a person who is more sensitive to emotional distress is at greater risk of development of dependent drug use. Dube et al.,[28] have also found strong positive associations between adverse attachment experiences in childhood and later use of illicit substances.

Frosch & Milkman,[29] proposed the idea that person's choice of a particular drug is not incidental and that different drugs are chosen to address individuals' specific psychological and social needs. Due to their neuro-biological relation to attachment, opioids-consumption results in affective states, which have similar characteristics to the safe haven function.[4,23] Numerous animal studies have investigated the role of the endogenous opioid system in the neuro-biological foundations of attachment. Martel et al.[30] have shown that blocking opioid receptors with antagonists increased the need for care in both young and adult rhesus monkey. On the other hand, Keverne et al.[31] demonstrated that administration of morphine to the monkeys decreased their motivation to be groomed. These studies support the view that opioids play an important role in mediating social attachment in animals due to their characteristics of relieving attachment related distress and decreasing the need for social interaction.[4]

MacLean[32] & Insel[33] suggested that human opiate use and addiction might serve as a substitute for social attachments and as an attempt to cope with lack of satisfying relationships. The quality of childhood attachment relationships amongst opioid users was investigated by numerous studies. Bernardi et al.,[34] conducted a comparative analysis between individuals with HUD, individuals with alcohol dependence and a normal control group to determine the differences in quality of parenting. Parental-rearing styles in the families of individuals with HUD were the most disturbed, especially with regard to the paternal parenting. Individuals with HUD reported higher levels of maternal and parental overprotection than both alcoholics and control group. De Jong et al.,[35] study of 48 poly substance users and 91 individuals with alcohol dependence revealed dysfunctional

attachment patterns in both groups but individuals with polysubstance use remembered their mothers and fathers as more rejecting and overprotecting than alcoholics. Emmelkamp & Heeres[36] studied 43 drug addicts and 111 control subjects and discovered significant differences on the dimensions of rejection, overprotection and lack of emotional warmth, with the most noticeable differences in paternal rejection and indifference.[37] Anasagasti & Denia,[38] compared 30 young individuals with HUD and 60 controls, discovering significant differences concerning affection, consistency and strictness, indicating that parenting style that individuals with HUD experienced was more defective.[37] Andersson & Eisemann[39] compared a group of 81 individuals with HUD in the methadone program with 81 healthy subjects, with results indicating the strong prevalence of an overprotecting maternal parenting and emotionally cold and indifferent paternal parenting. On the other hand, 91 imprisoned individuals with HUD in Kokkevi & Stefanis[40] study perceived both of their parents as less rejective and very permissive, their mothers as more overprotective and their fathers as more inconsistent than the general population group.

Research on attachment styles in adult life amongst individuals with HUD also showed high prevalence of insecure attachment. Mortazavi et al.,[41] investigated attachment style and emotional maturity, comparing 60 Iranian individuals with HUD with a control group and found significantly lower levels of emotional maturity and high prevalence of insecure attachment style amongst individuals with HUD. Thorberg & Lyvers,[42] compared 99 patients in addiction treatment with 59 control groups and found significantly higher levels of insecure attachment and fear of intimacy, as well as lower levels of self-differentiation amongst patients, enrolled in treatment. Brummett[43] investigated relationship between addiction severity, insecure attachment and early maladaptive schemas on 121 opiate addicts in OST, discovering significant positive correlation between addiction severity and levels of anxiety in interpersonal relationships.

This study aimed to investigate the relationship between recalled parental bonding, adult attachment style and experiences and severity of heroin addiction amongst individuals with HUD. The first part of the study compared a group of fifty-four individuals with HUD to a normal control group. On the one hand, the study examined whether groups differed on variables concerning recalled parental bonding and adult attachment style and experiences. The hypothesis was that group of individuals with HUD would score significantly lower in parental care and comfort with depending on others and forming close relationships, and significantly higher in levels of anxiety and parental overprotection. On the other hand, the study investigated whether the characteristics that proved to differentiate between both groups could act as sensitive predictors for forecasting heroin addiction. The second part of the study focused solely on the group of individuals with HUD and investigated whether there was a significant correlation between severity of heroin addiction and other variables and whether those variables that turned out to be significantly correlated could act as significant predictors for addiction severity. The correlational hypothesis proposed that addiction severity would be positively correlated with parental overprotection and anxiety, as well as with age and duration of using heroin and being in treatment. Hypothesis also predicted negative correlation between addiction severity, parental care and comfort with depending on others and forming close relationships.

Materials and methods

Participants

The participants consisted of two groups: a sample of individuals with HUD and a matched control group with no history of dependent drug use.

The group of individuals with HUD consisted of 54 participants, recruited from the department for addiction treatment at the hospital in London. To qualify for entering the study, two conditions had to be met: participants had to be at least 18 years old and their primary drug had to be heroin. The sample included 36 male and 18 female aged between 20 and 62, with a mean age of 38,7 years (SD=9,8). They started using heroin aged between 14 and 42 years (mean=22,0, SD=7,6). Their time of heroin usage ranged from one to 35 years (mean=14,6, SD=8,7) and their time of receiving opioid substitution therapy (OST) ranged from one to 30 years (mean=8,1, SD=7,5). Of these participants, 9% finished postgraduate degree, 17% finished undergraduate degree or diploma, 22% finished A Levels, 26% finished GCSE, 19% finished primary school and 7% started primary school but did not complete it. 22% of participants worked full-time, 11% worked part-time, 9% were self-employed, 4% were students, 4% were retired and 50% were unemployed. 43% participants were single, 33% were in a relationship, 11% were married, 11% were divorced and 2% were widowed. A control group of 54 adults (36 male, 18 female), recruited at British Library, University of Westminster and from the local community who had no self-reported history of dependent drug use. They were aged between 22 and 69 years (mean=35,2, SD = 9,8).

Procedure

Ethical approval was obtained from Psychology Ethics Committee at University of Westminster. Participants filled in questionnaires in paper or online version which was uploaded on Qualtrics. In the consent form, participants were given information about the nature of the study, structure of the questionnaire, potential risks and benefits of participating in the study and names and contact details of the researcher. It was further pointed out that taking part is entirely voluntary, that they can choose to withdraw from the study at any time without consequences of any kind and that they can also leave blank any statements they might feel uncomfortable rating. They were informed of the confidentiality of the study and the contact details of the researcher, should they have any complaints, concerns, questions or want a copy or summary of the study results. After that, they were asked to fill in the consent form. When that was done, they could begin to fill in the questionnaire.

Measures

Questionnaire consisted of four parts: demografic questionnaire, Severity of Opioid Dependence Questionnaire, Revised Adult Attachment Scale and Parental Bonding Instrument. Demografic questionnaire assessed information about gender, age, highest qualification, employment status, relationship status and history of dependent drug use in terms of age of first trying heroin, duration of using heroin and duration of receiving OST.

Severity of Opioid Dependence Questionnaire (SODQ) was developed by Sutherland et al. (1986) to assess severity of opiate

dependence. SODQ was designed as a parallel instrument to Severity of Alcohol Dependence Questinnaire – SADQ,[44] and consists of five sections: quantity and pattern of opiate use, physical symptoms of withdrawal, affective symptoms of withdrawal including craving, withdrawal relief drug-taking and rapidity of reinstatement of withdrawal symptoms after a period of abstinence. Single items also relate to the notions of tolerance and narrowing of drug use repertoire. The questionnaire consists of 21 items with scores ranging from 'Never or almost never' (scoring 1), 'Sometimes' (scoring 2), 'Often' (scoring 3) and 'Always or nearly always' (scoring 4). Very high correlations (>.95) between section scores and factor scores justify the simple addition of section scores to form an overall SODQ score, with high SODQ score indicating more severe addiction.[45,46] In the study by Sutherland et al.[45] SODQ was completed by 98 outpatients in treatment for opiate dependence. Factor analyses were conducted on each section of the SODQ, identifying a single factor that accounted for 39% of the variance, indicating that the structure of the questionnaire is dominated by a single underlying construct. Cronbach's alpha indicated acceptable internal consistency for each section (0.81, 0.88, 0.86, 0.70). SODQ was used in validation studies with 107 British,[47] 126 North American opiate users,[48] and 114 Australian opiate users,[49] with structural analyses of the questionnaire revealing acceptable levels of internal consistency and satisfactory proportions of variance in responses accounted for by factor analyses. Construct validity was demonstrated with significant correlations between SODQ scores and other measures of opiate use, including subjective sense of dependence and some items of the Psychoactive Substance Dependence and Abuse section of the Structured Clinical Interview for DSM-III-R.[46,50]

Revised Adult Attachment Scale (RAAS) was developed by Collins[51] to assess adult attachment style and relationship quality. Participants are asked to respond in terms of their general orientation towards close relationships. This 18-item scale has three subscales to measure the attachment dimensions of Close, Depend and Anxiety. Each subscale consists of 6 items. The Close subscale measures the extent to which a person is comfortable with closeness and intimacy, the Depend subscale measures how much a person feels they can depend on others to be available when needed. The Anxiety subscale measures the extent to which a person is worried about being unloved or abandoned. Scores on five-point subscales ranged from 'Not at all characteristic of me' (scoring 1) to 'Extremely characteristic of me' (scoring 5). High scores on Close and Depend, and low scores on Anxiety, indicated a secure attachment style.[42,51,52] Brennan et al.,[53] found that Close and Depend factors correlate with an avoidance dimension (r=0.86 and r=0.79) and that Anxiety factor correlates with an anxiety dimension of other self-report attachment scales (r=0.74). The RAAS has shown a test–retest reliability of 70% over 4 years.[54] Internal consistency reliability, α coefficient, and retest reliability after a 2-month interval were N.58 for the three subscales. Subscale scores were correlated in expected directions with measures of self-esteem, social behavior, instrumentality, expressiveness, openness, and satisfaction in romantic relationships.[51,52]

Designed by Parker[55] Parental Bonding Instrument (PBI) measures person's recollections of parental behaviour and attitudes towards the person in the childhood. This instrument is composed 25 items and must be filled out twice - once for mother (or maternal caregiver) and once for the father (or paternal caregiver). The items are scored on a four-point scale, ranging from 'Very Likely' (scoring 1) to 'Very Unlikely' (scoring 4). Two dimensions are measured: care and overprotection. The parental care subscale measures the extent to which a parent was empathic and caring or cold and indifferent during childhood and adolescence. The parental overprotection scale measures the degree to which a parent was infantilizing and intrusive and how much autonomy the person experienced in their relationships with their parents. The two subscales are inversely correlated. The optimal parenting is considered as a combination of high care and low overprotection, whereas the least optimal is considered 'affectionless control', a combination of low care and high overprotection. Assignment to high and low categories is based on the cut-off scores: for mothers, a care score of 27 and a protection score of 13.5; for fathers, a care score of 24 and a protection score of 12.5.[52,55,56] Greater affectionless control has been noticed in clinical participants and in more seriously disturbed patients, compared to the nonclinical population.[57] In their study of 130 emotionally and / or behaviourally disturbed adolescents, Manassi et al.,[57] examined whether information obtained from PBI is comparable to information measured on Adult Attachment Interview (AAI). They concluded that attachment information obtained from the PBI and the AAI is comparable in participants with optimal attachment histories but not in participants with unresolved attachment histories. Therefore, it might be advisable to use AAI for examination of parental bonding experience in the future research. However, as this method requires significant resources, time and training, it was not possible to use AAI for this study.

Statistical Analysis

An independent t-test procedure was used to compare whether recalled parental bonding in childhood (four subscale scores on the PBI) and adult attachment experience (three subscale scores on the RAAS) differ between heroin addicts and control group. The variables that, based on the t-test, prove to differ between both groups were selected and introduced in a logistic regression model. Binary logistic regression analysis was used to estimate the unique contribution of the differentiating variables to forecasting heroin addiction (binary dependent variable=being a heroin addict or not). In performing the analysis the enter option was used.

Further study concentrated exclusively on the group of heroin addicts. Pearson correlation test was performed to assess the correlation between SODQ Score and age, scores from RAAS and PBI subscales, duration of using heroin and duration of receiving OST. The variables that proved to significantly correlate with SODQ Score were then introduced into a multiple regression model in order to investigate their role as the predictors of addiction severity.

Results

The first study was designed to differentiate between the group of individuals with HUD and the normal control group. Independent t-test showed that the difference between groups was statistically significant for most of the variables, apart from maternal protection and paternal care. Most significant were the differences in Close Score ($t=-5.432$, $df=106$, $p<0.0005$, 2-tailed), Depend Score ($t=-4.679$, $df=106$, $p<0.0005$, 2-tailed), Anxiety Score ($t=3.035$, $df=106$, $p=0.003$, 2-tailed) and Father Protection Score ($t=3.241$, $df=106$, $p=0.002$, 2-tailed). The group of individuals with HUD reported less maternal care, higher levels of paternal protection and less secure adult attachment experiences than the control group (Table 1).

Table 1 Mean score and standard deviations of scores on RAAS and PBI subscales for the addict group and control sample

	Addict group (n=54)		Control group (n=54)	
Variables	**Mean**	**SD**	**Mean**	**SD**
RAAS Close Score	18.3	4.3	22.8	4.2
RAAS Depend Score	15.8	4.3	19.6	4.2
RAAS Anxiety Score	16.6	5.3	13.6	5
PBI Mother Care Score	23.1	7.3	26.1	8.1
PBI Mother Protection Score	16.5	7.8	14.7	7.3
PBI Father Care Score	17.3	8.1	20.4	8.7
PBI Father Protection Score	15.7	6.7	11.7	5.9

The variables that proved to differentiate between the group of individuals with HUD and the control group were then introduced into a logistic regression model in order to investigate their unique contribution independently of one another to the forecasting of heroin addiction. The model classified correctly 74% of the 108 respondents as individuals with HUD or normal controls. A Cox and Snell R2 of 0.28 shows that the global model explains 28% of the variance in the dependent variable.

Two variables offered a unique and significant contribution to the prediction of heroin addiction (Table 2). Paternal protection (ß=0.096) is positively related to the dependent variable in the logistic regression model (0 = normal controls; 1 = heroin addicts). Close Score (ß=-0.196) is negatively related to the dependent variable. The positive ß coefficient means that high level of paternal protection acts as a strong predictor for person's belonging to the group of individuals with HUD. The negative ß coefficient means that high scores on Close subscale function as a buffer against belonging to the group of individuals with HUD.

Table 2 Variables in the equation

Variables	**ß**	**SE**	**Wald**	**df**	**p**	**Exp(ß)**
Close Score	-0.196	0.076	6.758	1	0.009	0.822
Father Protection	0.096	0.039	6.19	1	0.013	1.101

Further research focused solely on the group of individuals with HUD. Pearson correlation test was performed to look into correlation between SODQ Score and age, scores from RAAS and PBI subscales, duration of using heroin and duration of receiving OST. There was a significant positive correlation between SODQ Score and Father Protection Score (r =0.259, N=54, p=0.029, one-tailed). There was a significant negative corelation between SODQ Score and Depend Score (r=-.240, N=54, p=0.040, one-tailed). There was a significant negative corelation between SODQ Score and age (r=-0.250, N=54, p=0.034, one-tailed). No significant correlations were found between SODQ Score and any other variables.

The variables that proved to significantly correlate with SODQ Score were then introduced into a multiple regression model in order to investigate their role as the predictors of addiction severity. The criterion was SODQ Score. A significant model emerged: F(3,50)=2,97, p=0.05. The model explained only 9,2% of the variance in SODQ Score (Adjusted R2=0.092). Table 3 gives information about regression coefficients for Age, Anxiety Score and Avoidance Score.

Table 3 Regression coefficients for the Age, Depend Score and Father Protection Score

Model	**Unstandardized coefficients B**	**Unstandardized coefficients Std. error**	**Standardized Coefficients beta**	**t**	**Sig**
(Constant)	50.517	12.975		3.893	0
Age	-0.27	0.205	-0.183	-1.319	0.193
Depend Score	-0.732	0.449	-0.215	-1.631	0.109
Father Protection Score	0.388	0.303	0.178	1.281	0.206

Discussion

The main findings of the study with regard to recalled parental bonding are in accordance with previous research.[36,39] In comparison with control group, participants with HUD reported less maternal and paternal care, higher levels of paternal overprotection, more anxiety and lower ability to form close relationships, trust and depend on others. Surprisingly, the groups did not differ significantly in levels of reported maternal overprotection which contradicts Kokkevi & Stefanis[40] findings. Experiences of the father as over controlling and emotionally cold were striking in differentiating participants with HUD from the normal controls, with paternal overprotection being identified as a significant contributor to the prediction of heroin addiction. This supports previous research which classified parenting style of affectionless control as least optimal rearing style for healthy psychological development.[52,55]

Results of Pearson correlation test only partly confirmed the hypothesis. As expected, addiction severity was positively correlated with paternal overprotection and negatively correlated with the extent to which a person feels comfortable depending on others. Age was significantly correlated with addiction severity but the correlation was negative which was not expected. Surprisingly, there was no significant correlation between addiction severity and parental care, maternal overprotection, levels of anxiety, closeness and duration of using the drug and being in treatment. Particularly unexpected was the lack of correlation between addiction severity and anxiety which directly contradicts Brummett's[43] findings. Further research that would explore these relationships would benefit from a larger sample of participants. The model that emerged from multiple regression explained only small percentage of the variance in SODQ Score. Further research is needed to investigate sensitive predictors of addiction severity.

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Results of this study carry useful implications for treatment of addiction. From an attachment perspective, the therapeutic alliance can play a crucial role in effective addiction treatment but since there is a high prevalence of anxiety and low levels of trust in interpersonal relationship amongst addicted population, a special attention should be paid to addressing the difficulties in formation and maintenance of a therapeutic alliance.[58] The proposed idea is that through experiences in the inter-subjective relationship with a therapist, a person can gain a deeper understanding of his own attachment history.[56] This understanding can then help facilitate change in their lifestyle and drug consumption. Such approach would require addiction treatment on a long-term basis.

There are several limitations to the present study. Firstly, although correlation and regression analysis are useful, they do not allow making conclusions about causality. In addition, Parental Bonding Instrument has been shown to be problematic when used with participants with unresolved attachment histories due to the significant occurrence of idealisation or anger towards participants' mothers.[57] Further research investigating the relationship between parental bonding and addiction could benefit from using Adult Attachment Interview which offers a better and more extensive overview of parental rearing-style. Unfortunately, due to significant time, resources and training needed to administer this instrument, using AAI was beyond the scope of this study.

Finally, it is notable that the participants consisted of adults in opioid substitution treatment, which limits the generalizability of findings to a wider population. Further studies should be conducted with other population such as inpatients, outpatients who are not receiving opioid substitution therapy, people with opiate addiction but not in treatment, poly drug users and users of other substances. The sample was also fairly small. Although the control group was matched by gender and the groups were similar in terms of age, there were differences in their educational background, employment status and relationship status. These variables could have been acting as confounding variables. Further research should aim to match participants also by these variables.

Conclusion

Insecure attachment is strongly associated with emotional distress and less effective coping. As such, it presents a significant risk factor for a variety of mental health disorders, including substance use disorders. The findings of this study revealed significant differences between individuals with HUD and control group in recalled parental bonding and adult attachment patterns. These findings carry useful implications for addiction treatment and emphasize the importance of building strong therapeutic alliance to help facilitate change. Further research is needed to investigate sensitive predictors of addiction severity.

Compliance with ethical standards

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed consent was obtained from all service users and all ethical guidelines were in accordance with the British Psychological Society (BPS, 2009) code of ethics and conduct.

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Conflict of interest

Lana Durjava declares no conflict of interest.

References

1. van IJzendoorn MH1, Bakermans-Kranenburg MJ. Attachment representations in mothers, fathers, adolescents and clinical groups: a meta-analytic search for normative data. *J Consult Clin Psychol*. 1996;64(1):8–21.
2. Dozier M, Stovall KC, Albus KE. *Attachment and psychopathology in adulthood.* In: Cassidy J, Shaver PR, editors. *Handbook of attachment: Theory, research, and clinical applications*. USA, New York: Guilford; 1999:497–519.
3. Mikulincer M, Shaver PR. *Attachment in adulthood: Structure, Dynamics, and Change*. USA, New York: Guilford; 2007:591 p.
4. Schindler A, Thomasius R, Petersen K, et al. Heroin as an attachment substitute? Differences in attachment representations between opioid, ecstasy and cannabis abusers. *Attach Hum Dev*. 2009;11(3):307–330.
5. Khantzian EJ, Treece C. DSM-III psychiatric diagnosis of narcotic addicts. Recent findings. *Arch Gen Psychiatry*. 1985;42(11):1067–1071.
6. Brooner RK, Schmidt CW, Felch LJ, et al. Antisocial behavior of intravenous drug abusers: Implications for diagnosis of antisocial personality disorder. *Am J Psychiatry*. 1992;149(4):482–487.
7. Bowlby J. *Attachment and loss: Volume 1. Attachment*. New York: Basic Books. 1969:326 p.
8. Bowlby J. *Attachment and loss: Volume 2. Separation, anxiety and anger*. New York: Basic Books. 1973:325 p.
9. Bowlby J. *Attachment and loss: Volume 3. Loss sadness and depression*. New York: Basic Books. 1980:355 p.
10. Davila J, Levy KN. Introduction to the special section on attachment theory and psychotherapy. *J Consult Clin Psychol*. 2006;74(6):989–993.
11. Ainsworth MDS. Object relations, dependency and attachment: A theoretical review of the mother-infant relationship. *Child Dev*. 1969;40(4):969–1025.
12. Holmes J. *John Bowlby and attachment theory*. UK, London: Routledge; 1993.
13. Bowlby J. *A secure base: parent-child attachment and healthy human development*. UK, London: Routledge; 1988:136 p.
14. Amini F, Lewis T, Lannon R, et al. Affect, attachment, memory: contributions toward psychobiologic integration. *Psychiatry*. 1996;59(3):213–239.
15. Liotti G. Understanding the dissociative processes: The contribution of attachment theory. *Psychoanalytic Inquiry: A Topical Journal for Mental Health Professionals*. 1999;19(5):757–783.
16. Bartholomew K. Avoidance of intimacy: an attachment perspective. *Journal of Social and Personal Relationships*. 1990;7(2):147–178.
17. Bretherton I. The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*. 1992;28(5):759–775.
18. Nakash-Eisikovits O, Dutra L, Westen D. Relationship between attachment patterns and personality pathology in adolescents. *J Am Acad Child Adolesc Psychiatry*. 2002;41(9):1111–1123.
19. Henderson AJZ, Bartholomew K, Trinke S, et al. When loving means hurting: An exploration of attachment and intimate abuse in a community sample. *Journal of Family Violence*. 2005;20:219–230.
20. Main M, Hesse E. *Parents' unresolved traumatic experiences are related to infant disorganized status: Is frightened/frightening parental behavior*

the linking mechanism? In: Greenberg MT, Cicchetti D, Cummings EM, editors. *Attachment in the Preschool Years: Theory, research, and intervention*. US, Chicago: University of Chicago Press; 1990:161–182.

21. Main M, Solomon J. *Discovery of a new insecure, disorganized/disoriented attachment pattern.* In: Greenberg MT, Cicchetti D, Cummings EM, editors. *Attachment in the Preschool Years*. UK, Chicago: University of Chicago Press; 1990:121–160.
22. Main M. *Recent studies in attachment: Overview, with selected implications for clinical work.* In: Goldberg S, Muir R, Kerr J, editors. *Attachment Theory: Social, Developmental and Clinical Perspectives*. New York: The Analytic Press; 1995:407–474.
23. Durjava L, Visick A, Banbury S. Heroin addiction in British prisons: An interpretative phenomenological analysis. *MOJ Addict Med Ther*. 2018;5(2):62–67.
24. Khantzian EJ, Mack JE, Schatzberg AF. Heroin use as an attempt to cope: clinical observations. *Am J Psychiatry*. 1974;131(2):160–164.
25. Petraitis J, Flay BR, Miller TQ, et al. Illicit substance use among adolescents: a matrix of prospective predictors. *Subst Use Misuse*. 1998;33(13):2561–2604.
26. Mate G. *In the Realm of Hungry Ghosts: Close Encounters with Addiction*. California, Berkeley: North Atlantic Books; 2009.
27. Khantzian EJ. The self-medication hypothesis of substance use disorders: a reconsideration and recent applications. *Harv Rev Psychiatry*. 1997;4(5):231–244.
28. Dube SR, Anda RF, Felitti VJ, et al. Adverse childhood experiences and personal alcohol abuse as an adult. *Addict Behav*. 2002;27(5):713–725.
29. Frosch WA, Milkman H. Ego functions in drug users. *NIDA Res Monogr*. 1977:142–156.
30. Martel FL, Nevison CM, Simpson MJ, et al. Effects of opioid receptor blockade on the social behavior of rhesus monkeys living in large family groups. *Dev Psychobiol*. 1995;28(2):71–84.
31. Keverne EB, Martensz ND, Tuite B. Beta-endorphin concentrations in cerebrospinal fluid of monkeys are influenced by grooming relationships. *Psychoneuroendocrinology*. 1989;14(1–2):155–161.
32. MacLean P, George Mark S. The triune brain in evolution: Role in paleocerebral functions. *Cognitive and Behavioral Neurology*. 1992;5(1):68.
33. Insel TR. Is social attachment an addictive disorder? *Physiol Behav*. 2003;79(3):351–357.
34. Bernardi E, Jones M, Tennant C. Quality of parenting in alcoholics and narcotic addicts. *British Journal of Psychiatry*. 1989;154(5):677–682.
35. De Jong CA, Harvefeld FM, van der Wlelen GEM. Memories of parental rearing in alcohol and drug addicts: A comparative study. *International Journal of Addiction*. 1991;23:207–216.
36. Emmelkamp PM, Heeres H. Drug addiction and parental rearing style: A controlled study. *Int J Addict*. 1988;23(2):207–216.
37. Hofler ZD, Kooyman M. Attachment transition, addiction and therapeutic bonding–An integrative approach. *Journal of Substance Abuse Treatment*.1996;13(6):511–519.
38. Anasagasti JI, Denia M. Opiate addicts and their perceived parental rearing. *Acta Psychiatr Scand Suppl*. 1988;334:121–126.
39. Andersson P, Eisemann M. Parental rearing and individual vulnerability to drug addiction: a controlled study in a Swedish sample. *Nord J Psychiatry*. 2003;57(2):147–156.
40. Kokkevi A, Stefanis C. Parental rearing patterns and drug abuse. Preliminary report. *Acta Psychiatrica Scandinavica*. 1988;78(S344):151–157.
41. Mortazavi Z, Sohrabi F, Hatami HR. Comparison of attachment styles and emotional maturity between opiate addicts and non-addicts. *Annals of Biological Research*. 2012;3(1):409–414.
42. Thorberg FA, Lyvers M. Attachment, fear of intimacy and differentiation of self among clients in substance disorder treatment facilities. *Addict Behav.* 2006;31(4):732–737.
43. Brummett BR. *Attachment style, early maladaptive schemas, coping self-efficacy, therapy alliance and their influence on addiction severity in methadone-maintenance treatment*. New York: Fordham University. 2007.
44. Stockwell T, Hodgson R, Edwards G, et al. The development of a questionnaire to measure severity of alcohol dependence. *Br J Addict Alcohol Other Drugs*. 1979;74(1):79–87.
45. Sutherland G, Edwards G, Taylor C, et al. The measurement of opiate dependence. *Br J Addict*. 1986;81(4):485–494.
46. Dawe S, Loxton NJ, Hides L, et al. *Review of diagnostic screening instruments for alcohol and other drug use and other psychiatric disorders. 2nd ed*. Canberra: Department of Health and Ageing. 2002.
47. Phillips GT, Gossop MR, Edwards G, et al. The application of the SODQ to the measurement of the severity of opiate dependence in a British sample. Severity of Alcohol Dependence Questionnaire. *Br J Addict*. 1987;82(6):691–699.
48. Sutherland G, Edwards G, Taylor C, et al. The opiate dependence syndrome: Replication study using the SODQ in a New York clinic. *Br J Addict*. 1988;83(7):755–760.
49. Burgess PM, Stripp AM, Pead J, et al. Severity of opiate dependence in an Australian sample: Further validation of the SODQ. *Br J Addict*. 1989;84(12):1451–1459.
50. Spitzer RL, Williams JB, Gibbon M. The Structured Clinical Interview for DSM-III-R (SCID) I: History, Rationale, and Description. *Arch Gen Psychiatry*. 1992;49(8):624–629.
51. Collins NL. Working models of attachment: implications for explanation, emotion, and behavior. *J Pers Soc Psychol*. 1996;71(4):810–832.
52. Ravitz P, Maunder R, Hunter J, et al. Adult attachment measures: A 25-year review. *J Psychosom Res*. 2010;69(4):419–432.
53. Brennan KA, Clark CL, Shaver PR. Self-report measurement of adult attachment: An integrative overview. In: Simpson JA, Rholes WS. editors. *Attachment theory and close relationships*. New York: Guilford; 1998:46–76.
54. Kirkpatrick LA, Hazan C. Attachment styles and close relationships: A four-year prospective study. *Personal Relationships*. 1994;1(2):123–142.
55. Parker G, Tuplin H, Brown LB. A parental bonding instrument. *British Journal of Medical Psychology*. 1979;52(1):1–10.
56. Bogaerts S, Vanheule S, Declercq F. Recalled parental bonding, adult attachment style and personality disorders in child molesters: A comparative study. *The Journal of Forensic Psychiatry & Psychology*. 2005;16(3):445–458.
57. Manassis K, Owens M, Adam KS, et al. Assessing attachment: convergent validity of the adult attachment interview and the parental bonding instrument. *Aust N Z J Psychiatry*. 1999;33(4):559–567.
58. Schindler A, Thomasius R, Sack PM, et al. Attachment and substance use disorders: a review of the literature and a study in drug dependent adolescents. *Attach Hum Dev*. 2005;7(3):207–228.

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