**Abstract**

Background; Adverse psychological consequences have been associated with both alcohol abstinence and alcohol disorders. Objectives; The current study considers those who have experienced childhood adversities and examines whether secure attachment orientation represents a protective factor against an increased likelihood of either abstinence/rare alcohol consumption or alcohol disorder diagnosis. Methods; Data was used from the National Comorbidity Survey Revised (NCS-R) (N=5692), a random sample representative of the American population. Adult personal alcohol use was considered in terms of abstinence/rare alcohol use, regular alcohol use and alcohol disorder diagnosis. Analyses focused on those who had experienced childhood adversities (N=2182) and assessed attachment orientation as a predictor of alcohol use. Results; Within those who had experienced childhood adversities, in comparison with securely attached individuals, both anxiously attached individuals and avoidant attached individuals had a significantly increased likelihood of being in the alcohol disorder diagnosis group as opposed to the regular alcohol consumption group. Avoidant individuals also had a significantly increased likelihood of being in the abstinence/rare alcohol use group. Conclusions/Importance; Results are discussed in terms of subgroups (vulnerable individuals and families) that may benefit from supportive interventions, and what format these interventions might take.

Keywords; alcohol; attachment; childhood adversity.

Attachment orientations and adult alcohol use amongst those with childhood adversities.

Alcohol is a substance which is legal and freely available but represents a significant international threat to public health (Fairbairn, et al., 2018, Kuntsche et al., 2013). Although the mechanisms are less well understood, a lesser-known association is that between alcohol abstinence and adverse health outcomes (Leung, Britton & Bell, 2016). Alcohol abstinence (Leung et al., 2016) and problematic alcohol use / alcohol disorders are amongst the outcomes linked to adverse childhood experiences (ACEs) (Dragan & Hardt, 2016, Green et al., 2010, Kessler et al., 2010, Leung et al., 2016, Stone et al., 2012). Those childhood adversities associated with maladaptive family functioning (e.g. parental mental illness, child abuse, neglect) represent the strongest predictors (Chassin et al., 2013, Dragan et al., 2016, Kessler et al., 2010).

Attachments develop based on children’s interactions with primary caregivers, but form enduring cognitive schemas that continue into adulthood and guide behaviour and expectations in other relationships (Fraley et al.,2015). These attachments guide how human beings respond within relationships when hurt, separated from loved ones, or perceiving a threat (Fraley et al., 2015). Although conceptualisations can differ (Fraley et al., 2015), attachment orientation can be considered in terms of the three styles (secure, avoidant, and anxious) initially identified by Ainsworth and colleagues (McWilliams & Bailey, 2010).

Secure attachment is characterised by the individual being comfortable with close relationships, depending on others, being depended on and no fears of abandonment (McWilliams & Bailey, 2010). Avoidant attachment is characterised by difficulties in forming close relationships or depending on others, and lack of trust (McWilliams & Bailey, 2010). Anxious attachment is typified by a strong longing for very close relationships, concern over the opinions of others and fear of abandonment (McWilliams & Bailey, 2010). Insecure attachment orientations (e.g. avoidant or anxious) represent a vulnerability factor to various adverse outcomes such as psychopathology, with secure attachment representing an apparent protective factor (Ein-Dor & Doron, 2015, Ein-Dor, Viglin, & Doron, 2016, Pascuzzo, Moss & Cyr, 2015). In a meta-analysis of the relevant literature, Fairbairn et al. (2018) conclude that “insecure attachment may be a vulnerability factor for substance use” and that there is merit in considering “close relationship quality as a promising line of inquiry in research on substance use disorder risk”.

Insecure attachment styles are highly characteristic of those individuals who experience childhood maltreatments (Sloman & Taylor, 2016). It is suggested that maltreatments may impact on the child’s ability to form trusting and reassuring relationships, and the attachment system becomes maladaptive and contributes to psychopathology (Sloman & Taylor, 2016). Long-term explanations are required as not all individuals who encounter ACEs proceed to develop emotional and/or behavioural disorders (Lowell, Renk & Adgate, 2014). In terms of protection and prevention sciences, Lowell et al. (2014) suggest that secure attachment may serve as a protective factor against maladaptive emotional and behavioural outcomes, even in the context of childhood maltreatment experiences. This is in line with the findings and suggestions of other groups e.g. Corcoran and McNulty (2018), Fairbairn et al. (2018) and Smith et al. (2016).

Whilst the findings of Lowell et al. (2014) concerning secure attachment as a protective factor amongst those who experience childhood adversities offer the potential for the development of preventative interventions, they require expansion. To further understanding in this area, the current study uses the National Comorbidity Survey Revised (NCS-R) to examine attachment orientation as a predictor of abstinence/rare alcohol use, regular alcohol use or an alcohol disorder amongst those who have experienced childhood adversities. This addresses the issues of the research of Lowell et al. (2014), which are that they are based on an undergraduate sample and assess adversarial outcomes (internalizing problems and externalizing problems) based on a self-report questionnaire measures as opposed to diagnostic criteria based on clinical interviews.

 The NCS-R represents a study of the mental health of the American population using a random representative sample (Kessler et al., 2004). Whilst longitudinal research may be considered the gold standard methodology in this domain (Stone et al. 2012), cross sectional research such as the World Mental Health studies where adults with a specific condition are asked to retrospectively recall childhood experiences are increasingly used to further our understanding of the development of psychopathology (Kessler et al., 2010). Consideration of abstinence/rare alcohol use and regular drinking alongside alcohol disorders is in line with the recommendation of Leung et al. (2016). Overall, it is hypothesised that consistent with the findings of Lowell et al. (2014), within those who have experienced childhood adversity, secure attachment will serve as a protective factor in relation to the experience of alcohol disorder diagnosis or abstinence/rare alcohol use. Prevention and protection science is important for health, social and economic reasons, and spanning the lifespan to identify risk and protective antecedents of key importance (Chassin et al., 2013, Englund et al., 2008, Lowell et al., 2014, McGue & Iacono, 2008, Stone et al., 2012).

**Methods**

***Sample and participants:***

The overall NCS-R sample consisted of 9282 individuals, however only 5692 of these individuals received both parts one and two (Kessler & Merikangas, 2004). Please see Kessler et al. (2004) for full details of sample selection and methods of the NCS-R. Variables included in this study span parts one and two, thus only the 5692 individuals who received parts one and two are eligible for inclusion in this analysis. Within this group, 1483 individuals endorsed physical abuse, 811 individuals endorsed child neglect, and 659 individuals reported a family history of substance disorder. The current study focuses on those participants who endorsed any one (or more) of the three childhood adversities outlined below (N=2182; Males N=1077, Females N=1104). The Human Subjects Committees of both Harvard Medical School and the University of Michigan approved the recruitment, consent, and field procedures of the NCS-R (Kessler et al., 2004). These ethical guidelines are compliant with the Helsinki Declaration on ethical principles for medical research involving human subjects (Kessler et al., 2005a).

***Childhood adversities:***

Childhood adversities considered were those associated with maladaptive family functioning (e.g. parental mental illness, child abuse, neglect), which are the strongest predictors of mental disorders (Kessler et al., 2010). The NCS-R assesses several parental mental illnesses with the Family History Research Diagnostic Criteria Interview (Endicott, Andreasen & Spitzer, 1978, as cited in Kessler et al., 2010). A family history of substance disorder was allocated wherein the participant selected biological parent in response to either the question ‘What man /woman spent the most time raising you?’ or ‘What man spent the most time raising you?’, and selected either a lot or some as a response option to either ‘How much did his substance use ever interfere a lot with his life or activities’ or ‘How much did her substance use ever interfere a lot with her life or activities’. This follows the criteria outlined by Cuijpers & Smit (2001). Substance disorders were focused on because of the alcohol focus of the study, and parental substance information could not be separated out.

 Following Kessler et al. (2010), child neglect was attributed when the participant selected either often or sometimes in response to any of the questions about frequency of not having adequate food, clothing or medical care, having inadequate supervision, and having to do age-inappropriate chores. Physical abuse was allocated wherein from within the assessment of childhood experiences, a participant selected either often, sometimes or rarely as a response option to ‘when you were growing up, how often did someone in your household either push, grab or shove you, throw something at you, or slap or hit you, and then indicated that this person was their biological parent. This study focuses on physical abuse, although Kessler et al. (2010) had initially cited childhood abuse as a predictor and this would typically consider both physical and sexual abuse. This is because we are focusing on attachment concerns, and thus wished to focus on the family unit. The NCSR questions on physical and abuse are from within the childhood section and it specifically asks about the perpetrators of these issues. However, the issues concerning sexual abuse are questioned within the trauma section, and it does not enquire about the perpetrator.

***Alcohol:***

This study considered alcohol use in terms of abstinence/rare alcohol use, regular alcohol use versus alcohol disorder. The alcohol question asked ‘Think about the past 12months. In the past 12months, how often did you usually have at least one drink nearly every day, three to four days a week, one to two days a week, one to three days a month, or less than once a month’. Responses of not drinking in the past 12months or drinking less than once per month were coded as indicating abstinence/rare alcohol use (Kalaydjian et al., 2009). It was necessary to include those who drink less than 12 times per year in this group, as drinking 12 times per year or more is considered to be the indicator for regular drinking (Kalaydjian et al., 2009). Responses of consuming alcohol 1-3 days per month, 1-2 days per week, 3-4 days per week, or nearly every day were coded as regular drinkers (Kalaydjian et al., 2009).

 NCS-R assessed diagnoses for alcohol abuse and alcohol dependence was based on the World Mental Health - Composite International Diagnostic Interview (WMH-CIDI) and Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria for alcohol disorders (abuse or dependence) (Kessler, Chiu, Demler & Walters, 2005b). Disorders of other substances were not considered in the current study, nor were other mental health disorders. Good concordance has been found within clinical reappraisal sub-samples (Haro et al., 2006). This gave rise to three groups (1) alcohol abstinence / rare alcohol consumption (2) regular drinkers and (3) alcohol disorder. Where individuals met the criteria for both an alcohol disorder and either of the two other alcohol groups, they were allocated to the alcohol disorder group.

***Attachment***

Attachment is measured in the NCSR by presenting Hazan and Shaver’s (1987) attachment style measure in an interview format (McWilliams & Bailey, 2010). There are three statements for secure, avoidant and anxious attachment respectively; (i) I find it relatively easy to get close to other people. I am comfortable depending on others and having them depend on me. I don’t worry about being abandoned or about someone getting too close to me.”, (ii) I am somewhat uncomfortable being close to others; I find it difficult to trust them completely and difficult to depend on them. I am nervous when anyone gets too close to me, and (iii) I find that others are reluctant to get as close as I would like. I often worry that people who I care about do not love me or won’t want to stay with me. I want to merge completely with another person, and this desire sometimes scares people away. Each is rated on a 4-point scale ranging from 1 (*not at all like me*) to 4 (*a lot like me*) (McWilliams & Bailey, 2010). Categorisation followed the procedure of Mickelson, Kessler and Shaver (1997). Categorical models of attachment are widely used (Fraley et al., 2015).

***Procedure and analysis***

These data were weighted by the part II of the NCSR dataset. Analysis focused exclusively on those individuals who had experienced childhood adversity and a multinominal regression analysis was employed to examine attachment orientation as a predictor of alcohol use grouping. The minimum level for statistical significance was .05.

**Results**

Table 1 illustrates the descriptive statistics for the alcohol use and attachment orientation.

 [INSERT TABLE 1 ABOUT HERE]

A multinominal logistic regression was conducted involving only those individuals who had experienced any (one or more) of the specified childhood adversities to determine whether attachment orientation significantly predicted alcohol grouping within these individuals (Table 2). Results showed that attachment orientation bore some significant relations to the likelihood of being in the abstinence/rare alcohol use versus the regular alcohol use group. Those with either an anxious attachment style or an unclassified attachment style did not differ from securely attached individuals in their likelihood of being in the abstinence/rare alcohol use versus the regular alcohol use group. However, compared to securely attached individuals who had experienced childhood adversities, avoidant attached individuals who had experienced childhood adversities were significantly more (1.81 times) likely to be in the abstinence/rare alcohol use versus the regular alcohol use group.

 Within those individuals who had experienced childhood adversities, securely attached individuals and unclassified individuals did not differ significantly in their probabilities of being in the regular alcohol use group versus the alcohol disorder diagnosis group. However, compared to securely attached individuals who had experienced childhood adversities, the likelihood of being in the alcohol disorder diagnosis group versus the regular alcohol use group was significantly higher amongst both avoidant individuals who had experienced childhood adversities (2.32 times) and anxiously attached individuals who had experienced childhood adversities (1.72 times).

[INSERT TABLE 2 ABOUT HERE]

**Discussion**

As hypothesised, within those who had experienced childhood adversities, in comparison with securely attached individuals, both anxiously attached individuals and avoidant attached individuals had a significantly increased likelihood of being in the alcohol disorder diagnosis group as opposed to the regular alcohol consumption group. Within those who had experienced childhood adversities, in comparison with securely attached individuals, avoidant attached individuals had a significantly increased likelihood of being in the abstinence/rare alcohol use group as opposed to the regular alcohol consumption group, but this was not evident amongst anxiously attached individuals. It is necessary to consider the limitations of the current study and in the context of these discuss how the current findings extend our existing knowledge and consider their implications.

Limitations of the current study include the reliance on retrospective and self-report data. Although retrospective, the validity and accuracy of the data from the NSC-R has been well established through the numerous peer reviewed publications (e.g. Kalaydjian et al., 2009, Swendsen et al., 2009). Age of onset of alcohol use is also considered an important factor, but to have included it here would have substantially reduced sample size. Cultural factors must also be borne in mind in that these findings are based on the U.S. population, where the legal age to purchase alcohol is 21 years old. In contrast to this, in many of the European countries it is 18 years old. Nonetheless, both these age-points fall within the adulthood category. The current method of assessing attachment has been used in well-respected publications from the World Mental Health studies, however opinions vary as to whether attachment orientations are best conceptualised as continuous dimensions or categories (Fraley et al., 2015). No consideration was given to number of childhood adversities, which may be important (Hughes et al., 2017). This study coded regular alcohol consumption in the same was as Kalaydjian et al. (2009). However, future research may need to separate out alcohol abstainers from those who consume alcohol rarely. No detail was available on how rare the consumption was, except that they drunk less than 12 times per year. Similarly, recovered alcoholics (who met the criteria but indicated that they had not consumed alcohol in the last 12months) may want to be considered separately from those with an alcohol disorder who still drink. Group sizes did not permit this in the current analyses. Strengths of the current study include the fact that participants represent a random sample of the population of the U.S.A., and they were also interviewed based on standardised diagnostic criteria (Kessler et al., 2004).

It is within this context that the current results support suggestion that attachment anxiety and avoidance are both associated with an increased likelihood of an alcohol disorder amongst those with childhood adversities. As expected, securely attached individuals were least likely to be in this group. It is within this context that the current results provide preliminary support for the suggestion that secure attachment may represent a protective factor amongst those who have experienced childhood adversities (Corcoran & McNulty 2018, Lowell et al., 2014). Secure attachment is often considered as a general protective factor in relation to substance abuse, and indeed many other forms of psychopathology (Ein-Dor & Doron, 2015, Ein-Dor et al., 2016, Fairbairn et al., 2018, Pascuzzo et al., 2015). The current findings support the suggestions and preliminary data of Lowell et al. (2014) and Smith et al. (2016), which propose that these same protective qualities may be just as evident in high-risk groups such as those with childhood adversities.

Whilst preliminary, the current findings highlight the need for early supportive intervention services for vulnerable individuals and families, e.g. those who experience childhood adversities (Janssen et al., 2014). These might take forms such as reduction of exposure to all childhood adversities (e.g. multisystem family therapy, foster care placement) and later intervention to address long-term adult maladaptive psychological and behavioural consequences of having been exposed to childhood adversities (Chassin et al., 2013, Kessler et al., 2010).

The current research offers insight into target groups that may benefit from supportive interventions (Chassin et al., 2013). Subsequently, the nature of such interventions to promote the development of secure attachment orientation may be guided by theoretical frameworks such as the transdiagnostic model (Ein-Dor, Viglin & Doron, 2016). This suggests that attachment anxiety may increase vulnerability to psychopathology by processes such as: (a) maladaptive emotion regulation processes, with a tendency to upregulate negative affectivity; (b) greater vigilance to threat-related cues and heightened empathic accuracy; and, (c) a lower level of perceived others responsiveness (Ein-Dor et al., 2016, Hoppen & Chalder, 2018). Similarly, attachment avoidance is suggested to link with multiple psychopathological disorders through processes such as: (a) emotion regulation processes, with a tendency to downregulate affectivity and employing distancing strategies; (b) compulsive self-reliance; and (c) lower levels of social support and perceived others responsiveness (Ein-Dor et al., 2016). The model considers the need to understand (a)the mechanisms by which attachment dispositions may cause the diﬀerent disorders they are associated with (i.e., the mediated pathways), and (b)why a given disposition may lead to different disorders in different people or to different disorders within the same person over time (Ein-Dor et al., 2016, Hoppen & Chalder, 2018)

With regard to interventions, cognitive behavioural therapies (CBT) have the most supportive evidence in this area while mindfulness-based therapies and expressive writing also show promise (Korotana et al., 2016). However, recent contemporary trends are considering how advances in technology can help foster secure attachments in infants of mothers who are likely to struggle with recognising and responding to emotions (Steele, et al., 2014). Future research might also examine whether attachment orientations may contribute to our existing understanding of patterns of progression and remission in alcohol disorders, and psychopathology in general. Consideration must also be given as to how best to promote the uptake of these interventions given the low levels of help seeking within this population (Sher, Grekin & Williams, 2005).

Findings were slightly less straight forward in relation to alcohol abstinence / rare alcohol consumption. Whilst avoidant individuals were also more likely to have an alcohol disorder, they were also more likely to be in the abstinence/rare alcohol use group. This was not the case for anxious individuals. These findings would appear to highlight two areas of need. The first of these would be comparison of the two paths (disorder versus abstinence / rare consumption) within avoidant individuals. The second would be exploration of possibilities why avoidance is associated with abstinence/rare alcohol use whilst anxiety is not.

It is difficult to definitively interpret these findings given the lack of research understanding alcohol abstinence, with even less surrounding rare alcohol consumption. Nonetheless, two routes are suggested as starting points. The first would be motives for drinking alcohol or abstaining from it (Anderson, Briggs, & White, 2013). In the context of childhood adversities, endorsement of commonly cited reasons such as upbringing or fear of developing an alcohol disorder (Bernards et al., 2009) would appear particularly important. Secondly, given that attachment anxiety and avoidance are accepted as two distinct constructs (Widom et al., 2018), there may be fruit in considering whether they relate differentially to other recognised risk and protective factors (e.g. emotion regulation abilities) (Wlodarczyk et al., 2017) or health related factors such as perceived stress, objective stress, and allostatic load (Widom et al., 2018). Overall, prevention sciences need much more consideration of attachment security as a protective factor, particularly in high-risk populations such as those with childhood adversities.

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Table 1; Descriptive statistics (N=2182)

|  |  |
| --- | --- |
|  |  |
| *Alcohol use* |  |
| Abstinence / rare consumption | 575 (26.4%) (abstinence n=180, rare n=390) |
| Regular consumption | 749 (34.3%) |
| Alcohol disorder diagnosis  | 423 (19.4%) (disorder plus abstinence / rare consumption n=146, disorder plus regular consumption n=277) |
| *Attachment*  |  |
| Avoidant | 590 (27.3%) |
| Anxious | 145 (6.7%) |
| Unclassified | 190 (8.8%) |
| Secure  | 1239 (57.3%) |

Table 2; Multinominal logistic regression predicting alcohol use from attachment orientation amongst those who experienced childhood adversities.

|  |  |
| --- | --- |
| Attachment orientation among those with childhood adversities |  |
|  | Abstinence/rare alcohol use | Alcohol disorder diagnosis |
|  | OR (95% CI) | OR (95% CI) |
| Avoidant | 1.81\*\*\* (1.39-2.35)  | 2.32\*\*\* (1.39-2.35) |
| Anxious | 1.26 (0.81-1.99) | 1.72\* (1.08-2.75) |
| Unclassified | 1.45 (0.98-2.12) (p=.06) | 1.31 (0.84-2.05) |
| Secure  |  |  |

Key; reference category = regular alcohol use