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Associations between specific psychotic symptoms and specific childhood adversities are mediated by attachment styles: An analysis of the National Comorbidity Survey

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ABSTRACT

Accumulated evidence over the past decade consistently demonstrates a relationship between childhood adversity and psychosis in adulthood. There is some evidence of specific associations between childhood sexual abuse and hallucinations, and between insecure attachment and paranoia. Data from the National Comorbidity Survey were used in assessing whether current attachment styles influenced the association between adverse childhood experiences and psychotic symptoms in adulthood. Hallucinations and paranoid beliefs were differentially associated with sexual abuse (rape and sexual molestation) and neglect, respectively. Sexual abuse and neglect were also associated with depression. The relationship between neglect and paranoid beliefs was fully mediated via anxious and avoidant attachment. The relationship between sexual molestation and hallucinations was independent of attachment style. The relationship between rape and hallucinations was partially mediated via anxious attachment; however this effect was no longer present when depression was included as a mediating variable. The findings highlight the importance of addressing and understanding childhood experiences within the context of current attachment styles in clinical interventions for patients with psychosis.

1. Introduction

Recent meta-analyses have confirmed that a wide range of adverse experiences in childhood are associated with psychosis (Matheson et al., 2013; Varese et al., 2012a). Some of these adverse experiences possibly involve disruptions of early attachment relationships leading to adaptations in attachment style. For example, in several case control studies, psychotic patients have reported an increased rate of early parental loss due to permanent separation or death (Agid et al., 1999; Morgan et al., 2007), and in a prospective cohort study the risk of developing psychosis increased for children reported as unwanted during pregnancy (Myhrman et al., 1996). Experiences of early victimization such as sexual abuse have similarly been associated with a later risk of psychosis (Read et al., 2005). These findings have now been replicated (e.g. Bebbington et al., 2004, 2011; Shevlin et al., 2011) and similar results have been found in subclinical populations (Janssen et al., 2004).

It has sometimes been argued that patients' retrospective accounts of their adverse histories may be biased (Susser and Widom, 2012). However, Fisher et al. (2011) found that patients were quite reliable when their baseline reports were compared to accounts provided at 7-year follow ups. Another study found that 74% of patients were able to validate their histories from other sources; the remaining patients either made no attempt or were unable to regardless of active attempts (Herman and Schatzow, 1987). A recent meta-analysis of case-control, prospective, and epidemiological studies reported strikingly similar odds ratios of exposure to childhood adverse experiences between prospective and retrospective study designs in individuals with psychosis, providing reassurance about the results from retrospective designs (Varese et al., 2012a).

Some research has suggested that different psychotic symptoms are associated with distinct childhood adverse experiences. The most consistent finding is of a specific association between a history of childhood sexual abuse and hallucinatory experiences in adulthood (Hammersley et al., 2003; Read et al., 2003). However, these studies did not control for the impact of co-occurring symptoms on such associations. Recently, Bentall et al. (2012) similarly found childhood sexual abuse (rape) was specifically associated with hallucinations, while being brought up in

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institutional care was specifically associated with paranoia (persecutory beliefs); however, the significance of these relationships was dependent on controlling for the co-occurrence of the corresponding clinical symptom in each symptom relationship.

These kinds of specificities can provide clues to the underlying psychological mechanisms that form part of the response to adverse experiences and are meaningfully related to psychiatric illness (Bentall and Fernyhough, 2008). Dissociation, for example, is characterised by detachment from ongoing reality, and in recent studies has been shown to account for the association between sexual abuse and hallucinations (Perona-Garcelán et al., 2012; Varese et al., 2012b). This finding is consistent with research which shows that sexual abuse, particularly by a close relative, is likely to produce a dissociative reaction (Chu and Dill, 1990). Garety et al. (2001) have proposed that adverse childhood experiences can influence the development of negative schemas about the self and others, biasing attributions of cause towards external sources, and in doing so, contributing to the subsequent development of paranoid delusions. Bentall and Fernyhough (2008) have suggested that insecure attachment, which can link to difficulties in trusting others, is another factor that can produce a paranoid attributional style, and that paranoia is therefore especially likely to develop as a consequence of early insecure attachment relationships. This hypothesis is consistent with the finding that being raised in institutional care is specifically associated with paranoia (Bentall et al., 2012), and with the finding that in a nonclinical sample, subclinical paranoia was shown to be associated with insecure attachment styles (Pickering et al., 2008). Of course, we would not expect a perfect fit between type of adverse experience, the type of psychological response it induces, and its consequences for future symptom presentation (whereas sexual abuse tends to provoke dissociative reactions, it may sometimes – for example depending on the perpetrator and the response of caregivers – lead to insecure attachment relations also).

Attachment theory is concerned with the emotional bonds infants form with their primary caregivers to establish a feeling of security and safety. Interactions with primary caregivers are therefore characterized by proximity seeking and maintaining behaviours. Over time the child's perception of these interactions affect the formation of internal working models of the self and others (Bowlby, 1973). A positive working model is formed when the primary caregiver is seen as responsive, accessible, and trustworthy, leading to the development of secure attachment (Bowlby, 1973). Conversely, adverse interactions lead to a negative working model of others as unpredictable and unavailable (Gamble and Roberts, 2005). Working models act as archetypes throughout the lifespan, helping individuals interpret and anticipate others' behaviour (Bowlby, 1973). Although early interactions are thereby thought to structure later relationships, attachment organization is not static throughout the lifespan and internal working models may adapt as a function of current relationship experiences or significant life events (Cozzarelli et al., 2003; Weinfield et al., 2004).

Hazan and Shaver (1987) outlined a three-category model of adult attachment styles. The secure style reflects a positive view of others and the self. An individual with an anxious style (preoccupied) feels unworthy of love and seeks to gain approval and acceptance from others, reflecting a positive view of others and a negative view of the self. The avoidant (dismissing) style reflects a negative view of others and a positive view of the self, so that the individual feels worthy of love yet, because others are untrustworthy and rejecting, avoids close relationships. Bartholomew and Horowitz (1991) added a fourth style to this model. A fearful style reflects a negative view of both others and the self. An individual with a fearful attachment style feels unworthy of love and avoids relationships to protect against rejection.

Although insecure attachment has been implicated in various psychopathologies, for example in PTSD (Muller et al., 2000), eating disorders (Ward et al., 2001), obsessive compulsive disorder (Myhr et al., 2004), bipolar 1 disorder (Morriss et al., 2009) and ADHD (Clarke et al., 2002), patterns of insecure attachment should not be viewed as always pathological, or as inevitably leading to pathology. Nonetheless, insecure attachment styles may act to increase the likelihood of mental health difficulties compared to patterns of secure attachment. Similarly, a secure attachment style should not to be viewed as insurance for well-being, but rather as a protective factor against pathology (Sroufe, 2005). This account is consistent with previous studies that have shown that individuals with a history of adverse experiences have higher levels of insecure attachment (Limke et al., 2010; Riggs and Kaminsk, 2010; Waters et al., 2000a), but that secure attachment is a resilience factor in psychological well-being regardless of trauma history (Dieperink et al., 2001).

There has been very little research exploring the degree to which attachment-styles influence the relationship between adverse experiences in childhood and psychotic symptoms in adulthood. There is evidence that avoidant attachment is associated with positive symptoms of psychosis, and modest evidence that anxious attachment is also associated with positive symptoms of psychosis (Gumley et al., 2013). In nonclinical samples however, it has been shown that insecure attachment predicts paranoia but not hallucinations (Pickering et al., 2008). Only one study of patients with first episode psychosis concluded that attachment is unrelated to psychotic symptoms (Macbeth et al., 2011). However, this finding may reflect the study's small sample size (34), possible lack of variance in the symptoms, and no adjustment for co-occurring symptoms.

The current study used data from the National Comorbidity Survey (NCS; 1990–1992). The first aim was to determine whether, within this sample, there were specific associations between types of childhood adversity and psychotic symptoms, as previously reported by Bentall et al. (2012) in an analysis of data from the British Adult Psychiatric Morbidity Survey (APMS; 2007). It was predicted that childhood sexual abuse would be associated with hallucinations while controlling for paranoia, and that neglect (as an indicator of disrupted attachment relations) during childhood would be associated with paranoia while controlling for hallucinations. The second aim of the study was to explore the degree to which attachment styles mediated the relationships between childhood adverse experiences and psychotic symptoms. It was predicted that only those adversities associated with paranoia and not hallucinations would be mediated by insecure attachment.

2. Methods

2.1. Participants and procedure

The NCS was a nationwide epidemiological investigation of the prevalence and correlates of DSM III-R disorders in non-institutionalised persons aged 15–54 years in the 48 coterminous states of America. Based on stratified, multistage area probability sampling, Part I of the survey employed 8098 participants, and Part II employed a subsample of 5877 participants. The analyses in this paper were performed on the Part II subsample. For a complete description of the NCS see Kessler (1994).

2.2. Measures

2.2.1. Childhood adverse experiences

Information about adverse experiences was obtained from the 'Life Event History' module of the University of Michigan Composite International Diagnostic Interview (UM-CIDI; Wittchen and Kessler, 1994). Participants were provided with a numbered list of adverse experiences, and asked for example "Did event number six ever happen to you?" Identifying types of adverse experiences with a number is associated with an increased willingness to disclose such information (Kessler et