Assessment of attachment in psychosis: A psychometric cause for concern

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ABSTRACT

Attachment has recently been proposed as a key developmental construct in psychosis, in particular with respect to interpersonal functioning and social cognition. The current study examined the latent structure of the self-report Psychosis Attachment Measure (PAM) and its relationship to lower-level perceptual and higher-order inferential social cognitive processes. The PAM was administered to 138 psychiatrically stable outpatients with schizophrenia alongside a battery of symptom, social cognitive, and functional measures. PAM responses were analyzed using latent variable measurement models, which did not yield evidence of the coherent two-dimensional structure predicted by previous literature. A unidimensional subscale comprising 6 of the 16 original PAM items possessed the strongest psychometric properties. This subscale was generally uncorrelated with social cognitive measures and showed weak correlations with some symptoms measures and with community functioning. These results suggest that either the PAM may not measure attachment in psychosis or it may measure only attachment anxiety but demonstrate little construct validity in this population. These results tell a cautionary tale regarding making theoretical inferences on the basis of measures without coherent latent structure. Attachment measures with stronger psychometric properties will help clarify putative relationships between attachment and social cognitive processes in psychosis.

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1. Introduction

Attachment, the universal human need to form and manage emotional bonds with significant others (Ainsworth, 1979; Bowlby, 1977), has become a central construct, not only for infant and child development, but also for conceptualizing adult psychopathology and interpersonal problems (Danquah and Berry, 2014); attachment may also represent a construct capable of bridging developmental, neurobiological, and interpersonal levels of analysis in psychosis (Gumley et al., 2014; Korver-Nieberg et al., 2014). Developmental attachment bonds contribute to interpersonal security and cognition more broadly (Bowlby, 1977; Fonagy and Target, 2005), and attachment styles persist into adulthood and shape relational models (Fraley, 2002). Although attachment styles were traditionally defined typologically (i.e., secure, avoidant, etc.), taxometric analysis has supported dimensional models of attachment (Fraley and Spieker, 2003); we have adopted Bartholomew's (1990) two-dimensional conceptualization of anxious (fearful and dependent) and avoidant (dismissive and defensive) attachment.

Attachment measures correlate with psychotic phenomena including positive symptoms (Berry et al., 2006), paranoia (Wickham et al., 2014), and distress when hearing voices (Berry et al., 2012). Moreover, attachment measures for individuals with psychosis correlate with attributional bias (Donohoe et al., 2008), mentalizing (MacBeth et al., 2011), social and community functioning (Couture et al., 2007), and interpersonal problems (Berry et al., 2008). For these reasons, social cognition has been proposed as a mediator between insecure attachment and clinical and functional problems psychosis (Korver-Nieberg et al., 2014). Theoretically, attachment styles correspond to self and other representations; since community functioning partly depends upon social decision-making based upon such representations, links between attachment, social cognition, and functioning should be expected.

Of the many self-report and interview measures of attachment (Crowell, Fraley, and Shaver, 2008; Gumley et al., 2014), one

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commonly-used measure for individuals with psychosis is the Psychosis Attachment Measure (PAM; Berry et al., 2006), a 16-item self-report questionnaire about thoughts and feelings regarding close interpersonal relationships. The PAM was based upon previous attachment measures (excluding references to romantic relationships) and designed to assess anxious and avoidant attachment factors (Bartholomew, 1990; Berry et al., 2008, 2006).

Although reported PAM subscale internal consistencies have ranged from acceptable to excellent, studies tend to report few psychometric data (e.g., Picken et al., 2010). We are aware of only two studies investigating the PAM's psychometric structure in clinical samples, each of which derived factors via principle components analysis (PCA) with varimax rotation (Berry et al., 2008; Kvrgic et al., 2011). Because PCA is not generally considered methodologically sound for exploratory factor analysis, factor analytic results from PCA may not be generalizable; more specifically, PCA is a data-reduction technique designed to form linear combinations (composite) with maximum variance. PCA assumes that all variables are measured without error. By contrast, factor analysis attempts to capture latent variables that reflect common variance among the indicators. Factor analysis is considered the correct procedure when evaluating latent variables, their interrelations, and relations with other variables rather than data reduction (Floyd and Widaman, 1995; Schmitt, 2011). Moreover, no confirmatory analyses have tested the hypothesis that the PAM conforms to a two-factor structure.

We report on data from a sample of individuals diagnosed with schizophrenia aimed at evaluating the PAM's psychometric properties and construct validity by assessing its relationship to social cognition using paradigms assessing higher-level inferential processes and lower-level perceptual processes. We hypothesized that (1) the PAM possesses a two-factor structure and (2) greater attachment insecurity would be associated with worse performance on higher-level social cognitive tasks. We also report exploratory analyses of the relationship between attachment and social cognitive tasks (lower-level perceptual processes, attribution bias, and facial affect identification), symptoms, community functioning, and functional capacity.

2. Methods

2.1. Subjects

Participants comprised 146 psychiatrically-stable outpatients with a DSM-IV research diagnosis of schizophrenia, and no evidence of recent alcohol or substance dependence (6 months) or abuse (past month) based on SCID-I/P clinical interview (First et al., 2012). Participants comprised a subset of patients from two performance sites of the larger Social Cognition and Functioning (SCAF) project (Green et al., 2013): 68 from Los Angeles outpatient treatment clinics and the VA Greater Los Angeles Healthcare System, and 78 from mental health clinics in Chapel Hill, NC and the University of North Carolina-Chapel Hill Schizophrenia Treatment and Evaluation Program. Full inclusion criteria are described elsewhere (Kern et al., 2013). The study was described to prospective participants and written informed consent was obtained prior to participation.

2.2. Measures

Attachment was assessed using the PAM, a self-report questionnaire with 16 items rated on a four-point Likert-type scale (0='not at all'; 3='very much').

2.2.1. Social cognition

Social cognition was assessed using four SCAF social neuroscience paradigms and measures of attribution bias and facial affect identification.

SCAF social neuroscience paradigms—tasks adapted from the social neuroscience literature assessing core social cognitive/emotional abilities with reliably identifiable neural substrates—and task variable selection are detailed elsewhere (Green et al., 2013; Kern et al., 2013; Olbert et al., 2013). In brief, high-level inferential tasks comprised (1) self-referential memory, involving assessment of biases in the encoding/retrieval of trait-level information about oneself (Kelley et al., 2002; Macrae et al., 2004); and (2) empathic accuracy, involving real time temporal tracking of others' emotions in videotaped vignettes (Levenson and Ruef, 1992; Zaki et al., 2008). Low-level perceptual tasks comprised (3) basic biological motion, involving visual discrimination of human movement from random motion represented in animated point-light figures (Puce and Perrett, 2003); and (4) emotion in biological motion, involving identifying emotions represented by walking point-light figures (Heberlein et al., 2004).

Attributional bias was assessed with the blame bias subscale of the Ambiguous Intentions Hostility Questionnaire (AIHQ; Combs et al., 2007). Blame bias scores are calculated by summing five self-rated ambiguous second-person interpersonal vignettes on three Likert scale items, two scored from 1 to 5 and one scored from 1 to 6.

A final social cognitive construct, facial affect identification, was assessed via percent accuracy on a computerized test presenting color photos of faces chosen from standardized stimuli (Ekman, 2004) for five seconds; participants voiced aloud whether the face displayed a neutral expression or a happy, sad, angry, afraid, surprised, or disgusted expression.

2.2.2. Symptoms

Symptom severity was assessed using the expanded Brief Psychiatric Rating Scale (BPRS), with total score and positive and depressive subscale scores reported (Kopelowicz et al., 2007; Lukoff et al., 1986). Negative symptoms were assessed with the Scale for the Assessment of Negative Symptoms (SANS), with experiential symptoms (avolition-apathy and anhedonia-asociality) and expressive symptoms (affective flattening and alogia) reported (Andreasen, 1984). Symptom scale raters were trained to a minimum kappa of 0.80 (Kern et al., 2013).

2.2.3. Functional measures

Two SCAF measures assessed functional capacity. The USCD Performance-Based Skills Assessment (UPSA; Patterson et al., 2001) employed role-play simulations to assess the ability to negotiate practical tasks such as parsing a utility bill. A total score was computed by summing functional skill areas.

A second role-play task, the Maryland Assessment of Social Competence (MASC; Bellack et al., 1994), assessed the capacity to negotiate common interpersonal difficulties. Confederates used open-ended scripts to prompt participants to generate conversational momentum in four three-minute scenarios such as conversing with a new neighbor. MASC developers or individuals they had certified trained raters to ICC's exceeding 0.85; a total sum score was computed from videotaped role-play ratings.

Community functioning was assessed via total score on the Role Functioning Scale (RFS; McPheeters, 1984), a semi-structured interview probing work functioning, independent living, family network, and social functioning.