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# Intrinsic motivation and amotivation in first episode and prolonged psychosis

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ABSTRACT

The deleterious functional implications of motivation deficits in psychosis have generated interest in examining dimensions of the construct. However, there remains a paucity of data regarding whether dimensions of motivation differ over the course of psychosis. Therefore, this study examined two motivation dimensions, trait-like intrinsic motivation, and the negative symptom of amotivation, and tested the impact of illness phase on the 1) levels of these dimensions and 2) relationship between these dimensions. Participants with first episode psychosis (FEP; $n = 40$) and prolonged psychosis ($n = 66$) completed clinician-rated measures of intrinsic motivation and amotivation. Analyses revealed that when controlling for group differences in gender and education, the FEP group had significantly more intrinsic motivation and lower amotivation than the prolonged psychosis group. Moreover, intrinsic motivation was negatively correlated with amotivation in both FEP and prolonged psychosis, but the magnitude of the relationship did not statistically differ between groups. These findings suggest that motivation deficits are more severe later in the course of psychosis and that low intrinsic motivation may be partially independent of amotivation in both first episode and prolonged psychosis. Clinically, these results highlight the importance of targeting motivation in early intervention services.

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## 1. Introduction

Descriptions of motivation deficits among individuals with psychotic illnesses can be traced back to the writings of Bleuler (1911) and Kraepelin (1919). However, a precise and nuanced understanding of motivation deficits has only begun to develop more recently (Barch, 2005). Research suggests that motivation in schizophrenia is multidimensional (Choi et al., 2012), with recent research focusing on the dimensions of intrinsic motivation and the negative symptom domain of amotivation that generally includes avolition–apathy and anhedonia–asociality (Foussias and Remington, 2010). Theoretically, intrinsic motivation is the internal drive that stems from enjoyment and curiosity to pursue novel experiences and to engage in self-improvement (Ryan and Deci, 2000), while amotivation generally involves more of an overall reduction in goal-directed behaviors (Foussias and Remington, 2010); notably, these dimensions may theoretically differ in that intrinsic motivation stems largely from internal processes and often involves engaging in an activity for its own sake, whereas amotivation involves a broader reduction in behaviors and can include both internal and external processes.

While the presence of multiple dimensions of motivation in schizophrenia has become clear, several important questions remain unanswered. One question of increasing interest is whether levels of motivation dimensions differ across stages of illness, while another question surrounds whether these dimensions evidence similar relationships at different illness stages. Given the links between motivation and functional deficits (Foussias et al., 2009, 2011) and the limited gains in motivation achieved with existing interventions (Kirkpatrick et al., 2006), increased understanding of motivation dimensions across illness stages is needed, chiefly to inform and refine treatment. For example, if motivation is found to be greater earlier in the course of psychosis, it may be important for early intervention services to support and promote motivation as a means to prevent additional declines and associated functional impairments. Therefore, the current study aimed to address these issues by comparing intrinsic motivation and amotivation in both first episode psychosis (FEP) and prolonged psychosis.

To date, existing evidence suggests that motivation deficits may be present among those with FEP and prolonged psychosis. Indeed, research has shown that individuals with FEP suffer from amotivation (Faerden et al., 2009; Fervaha et al., 2013) and low intrinsic motivation (Fervaha et al., 2015). Breitborde et al. (2012, 2014) also found that

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those with FEP have reduced autonomy, competence, and relatedness, factors believed to be important to the development of intrinsic motivation (Ryan and Deci, 2000). Similarly, several laboratory and experience sampling studies have found that individuals with prolonged psychosis demonstrate deficits in intrinsic motivation (Gard et al., 2014; McCormick et al., 2012; Vohs and Lysaker, 2014) and amotivation (Fervaha et al., 2014a).

However, it is unclear from existing empirical evidence if levels of intrinsic motivation and amotivation differ across illness stages. To our knowledge, only one study by Schlosser et al. (2014) has examined levels of self-reported motivation across different stages of psychosis, finding that, contrary to their hypothesis, individuals with prolonged psychosis did not report greater motivation deficits than those with FEP or those at clinical high risk of developing psychosis. While this study is an important first step towards understanding motivation deficits across illness stages, it did not specifically assess amotivation and intrinsic motivation, and studies that include non-self-report measures of motivation are needed. There is also reason to believe that intrinsic motivation and amotivation might differ across illness stages. Specifically, as motivation difficulties become prolonged, interest and desire to engage in activities likely diminish, leading to further reductions in motivation as the illness progresses. In the current study, we assessed whether those with FEP differed from those with prolonged psychosis on clinician-rated measures of intrinsic motivation and amotivation.

While literature examining whether different dimensions of motivation are related in psychosis is limited, extant evidence suggests that intrinsic motivation is associated with—but is more specific—than negative symptoms more broadly. Although intrinsic motivation is often categorized under the broader category of negative symptoms (Saperstein et al., 2011) and is modestly to strongly correlated with negative symptoms (Choi et al., 2009; Yamada et al., 2010), intrinsic motivation explains additional variance in functioning above and beyond negative symptoms (Saperstein et al., 2011). Theoretically, this suggests that while these dimensions overlap, low intrinsic motivation may be partially independent of amotivation. Indeed, if someone has low intrinsic motivation, it is possible that they are not necessarily amotivated, as other factors such as extrinsic processes may facilitate motivation (Silverstein, 2010). However, studies examining the degree of overlap between intrinsic motivation and amotivation across the course of psychosis are needed. The current investigation addressed this gap by examining the relationship between intrinsic motivation and amotivation in FEP and prolonged psychosis.

To investigate these questions, we administered clinician-rated measures of intrinsic motivation and amotivation to both an FEP and prolonged psychosis group. First, we hypothesized that the FEP group would have greater intrinsic motivation and less amotivation than the prolonged psychosis group. Second, we hypothesized that amotivation would be negatively correlated with intrinsic motivation in both groups but that these correlations would be weaker in the prolonged psychosis group. We also explored whether symptoms with previous links to motivation (Choi et al., 2014; Schlosser et al., 2014) evidenced similar relationships with motivation and intrinsic motivation in both groups.

## 2. Methods

### 2.1. Participants

Participants between the ages of 18 and 65 were recruited from two sites in a Midwestern city in the United States. The FEP sample ($n = 40$) was recruited from an outpatient clinic specializing in early psychosis (i.e., within five years of first treatment) treatment and research; participants were eligible if they had received a schizophrenia ($n = 32$), schizoaffective disorder ($n = 3$), or psychosis NOS ($n = 5$) diagnosis within the last five years. The FEP sample had a mean duration of psychosis of 2.14 (SD = 1.74) years and an average duration of untreated psychosis of .58 of a year (SD = 1.23). Participants in the prolonged psychosis sample ($n = 66$) were recruited from an outpatient clinic of a Veterans' Affairs Medical Center that specializes in treatment for severe mental illness as part of a study examining the impact of cognitive therapy on work performance; participants were eligible if they had a documented diagnosis of schizophrenia ($n = 44$) or schizoaffective disorder ($n = 22$) for over five years. No participants were recruited with organic brain disease or developmental disabilities, as determined though chart-review or observation. Additional demographic information is listed in Table 1 and is available in Kukla et al. (2014) and Nabors et al. (2014).

### 2.2. Procedure

After the informed consent process, diagnoses were confirmed using the Structured Clinical Interview for the Diagnostic Statistical Manual-IV (SCID; First et al., 1996). Participants then completed assessments with trained, supervised, master's-level clinicians who achieved an inter-rater reliability of .70 prior to interviewing participants. Data reported was obtained prior to study interventions. Procedures were approved by the local institutional review boards.

### 2.3. Measures

#### 2.3.1. Amotivation

Amotivation was assessed using the sum of three items from the clinician-rated Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987): emotional withdrawal, apathetic social withdrawal, and active social avoidance. Two separate factor analyses (Fervaha et al., 2014a; Liemburg et al., 2013) have found that these items comprise a separate subfactor within the PANSS negative symptoms factor. These items are also consistent with the avolition subdomain of negative symptoms (Blanchard and Cohen, 2006; Tandon et al., 2013). While the apathetic social withdrawal and active social avoidance items may more distinctively assess social amotivation, all items correlate with a more comprehensive measure of broad amotivation (Faerden et al., 2008). The emotional withdrawal item also assesses non-social aspects of amotivation; thus, we refer to this subfactor as amotivation. The subfactor has been confirmed in an early and prolonged psychosis sample (Fervaha et al., 2014a; Liemburg et al., 2013), has been utilized in several studies (Fervaha et al., 2015 and demonstrated acceptable internal consistency across samples in the present study ($\alpha = .75$).

#### 2.3.2. Intrinsic motivation

Trait-like intrinsic motivation was assessed by the sum of the sense of purpose, motivation, and curiosity items from the clinician-rated Quality of Life Scale (Heinrichs et al., 1984). While there is no widely accepted intrinsic motivation measure, the QLS intrinsic motivation subscale has been used in several studies with psychosis samples (Fervaha et al., 2014b; Gard et al., 2009; Vohs and Lysaker, 2014) and has demonstrated adequate construct validity (Nakagami et al., 2008). We found good inter-rater reliability (intraclass correlations: 0.88–0.93) and acceptable internal consistency across the current samples ($\alpha = .75$).

#### 2.3.3. Symptoms

The PANSS was also used to assess for cognitive symptoms (Bell et al., 1994), depression, anxiety, and the diminished expression negative symptoms subfactor (Fervaha et al., 2014a; Liemburg et al., 2013). These symptoms were chosen because they have been linked to motivation (Choi et al., 2014; Schlosser et al., 2014). The PANSS has been used extensively with FEP and prolonged psychosis (e.g., Firmin et al., in press; Langeveld et al., 2013). Inter-rater reliability and internal consistency were found to be acceptable across the present samples (intraclass correlations: 0.80–.93; subscale $\alpha$s = .69–80).

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