



Metacognition deficits as a risk factor for prospective motivation deficits in schizophrenia spectrum disorders

Lauren Luther^{a,*}, Ruth L. Firmin^a, Kyle S. Minor^a, Jenifer L. Vohs^{b,c,d}, Benjamin Buck^e, Kelly D. Buck^f, Paul H. Lysaker^{b,f}

^a Indiana University-Purdue University Indianapolis, Indianapolis, IN, United States

^b Indiana University School of Medicine, Indianapolis, IN, United States

^c Prevention and Recovery Center for Early Psychosis, Midtown Community Mental Health Centers, Eskenazi Hospital, Indianapolis, IN, United States

^d Larue D. Carter Memorial Hospital, IU Psychotic Disorders Research Program, Indianapolis, IN, United States

^e University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

^f Richard L. Roudebush Veteran's Affairs Medical Center, Indianapolis, IN, United States

ARTICLE INFO

Article history:

Received 27 March 2016

Received in revised form

5 August 2016

Accepted 8 August 2016

Available online 9 August 2016

Key words:

Schizophrenia

Motivation

Metacognition

Antipsychotic medication

Anticipatory pleasure

ABSTRACT

Although motivation deficits are key determinants of functional outcomes, little is known about factors that contribute to prospective motivation in people with schizophrenia. One candidate factor is metacognition, or the ability to form complex representations about oneself, others, and the world. This study aimed to assess whether metacognition deficits were a significant predictor of reduced prospective motivation, after controlling for the effects of baseline motivation, anticipatory pleasure, and antipsychotic medication dose. Fifty-one participants with a schizophrenia spectrum disorder completed measures of metacognition and anticipatory pleasure at baseline; participants also completed a measure of motivation at baseline and six months after the initial assessment. Baseline antipsychotic dose was obtained from medical charts. Hierarchical regression analysis revealed that lower levels of baseline metacognition significantly predicted reduced levels of motivation assessed six months later, after controlling for baseline levels of motivation, anticipatory pleasure, and antipsychotic dose. Higher baseline antipsychotic dose was also a significant predictor of reduced six month motivation. Results suggest that metacognition deficits and higher antipsychotic dose may be risk factors for the development of motivation deficits in schizophrenia. Implications include utilizing interventions to improve metacognition in conjunction with evaluating and possibly lowering antipsychotic dose for people struggling with motivation deficits.

© 2016 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Although motivation, which can generally be defined as an internal state that initiates, directs, and maintains goal-directed behavior (Kleinginna and Kleinginna, 1981), has long been a focus of psychological theories and research (Maslow, 1943), it has only recently gained momentum as an important area of schizophrenia research. To date, motivation deficits in schizophrenia are generally conceptualized as largely falling under the umbrella of negative symptoms (American Psychiatric Association, 2013), and research has found that motivation deficits represent a key negative symptom subdomain (Blanchard and Cohen, 2006; Lincoln et al., in press). Further, research has demonstrated that

motivation is frequently impaired in schizophrenia (Cooper et al., 2015; Luther et al., 2015a) and that these deficits play a critical role in reduced treatment response (Medalia and Saperstein, 2011), learning (Choi and Medalia, 2010; Tas et al., 2012) and functioning (Foussias et al., 2009, 2011). Several studies have also found that motivation mediates the relationship between both symptoms and functional outcomes (Yamada et al., 2010) and cognitive deficits and functional outcomes (Nakagami et al., 2008; Gard et al., 2009; Fervaha et al., 2015a).

Despite increasing evidence that motivation is a key determinant of functional outcomes in schizophrenia, there is limited empirical research investigating prospective determinants of motivation; thus, risk factors for motivation impairments have not been fully identified. Identifying risk factors for these deficits is critical in order to establish novel treatment targets. This is especially salient given the modest improvement seen in motivational deficits with many existing psychological and pharmacological treatments in people with schizophrenia (Kirkpatrick et al.,

* Correspondence to: IUPUI School of Science, Department of Psychology, LD 124, 402 N. Blackford St., Indianapolis, IN 46202, United States.

E-mail address: lutherl@iupui.edu (L. Luther).

2006; Velthorst et al., 2015). Further, discerning factors that lead to improved treatments can serve to impede motivational declines that may occur as the course of schizophrenia progresses (Luther et al., 2015a).

One characteristic that has been argued to play a role in the emergence of motivation impairments is deficits in metacognition or impairments in the capacity to integrate mental experiences into complex representations. The term metacognition was originally used in the education literature (Flavell, 1979), but it has subsequently been used in the context of psychopathology research to describe a spectrum of mental experiences, ranging from reflections about more discrete mental experiences (e.g., explicit thoughts and feelings), to more synthetic reflective acts where intentions, thoughts, feelings, and connections between experiences are continuously evolving into integrated representations of oneself and others as distinct agents in the world (Semerari et al., 2003; Lysaker et al., 2013). Metacognition is viewed as partly overlapping with social cognition but diverges in that it focuses not on the accuracy of a single social cue, such as determining whether a thought or feeling is correct, but on the degree to which mental experiences about the self and others are coherently integrated (Lysaker et al., 2015c). Notably, individuals with early and prolonged schizophrenia have demonstrated unique deficits in metacognition compared to healthy controls (Hasson-Ohayon et al., 2015) as well as those with substance use disorders (Lysaker et al., 2014; Wasmuth et al., 2015), bipolar disorder (Tas et al., 2014), and post-traumatic stress disorder (Lysaker et al., 2015a).

Metacognition may be a strong candidate predictor of motivation for several reasons. First, possessing an integrated sense of oneself and others likely guides goal-directed behavior by providing meaning and value to completing tasks or activities. Thus, when faced with tasks, a person without intact metacognitive capacities to make sense of and provide meaning to these tasks will likely have trouble evaluating and expending the effort required to complete them. Second, goal-directed behavior may be contingent on being able to view oneself as a unique agent in the world who is capable of initiating actions and responding to challenges. Indeed, metacognition has been argued to play a critical role in cultivating an individual's sense of agency (Lysaker et al., 2008a, 2013). Specifically, when faced with problems or new experiences, without an integrated sense of oneself and others to make sense of and to respond to problems and new experiences, a person may become increasingly confused or overwhelmed and may withdraw or discontinue any associated activities to reduce confusion. Over time, without intact metacognitive capacities to guide and provide meaning to behavior, one would likely be at risk for reductions in goal-directed behavior.

Evidence supporting the connection between metacognition and motivation includes findings from recent cross-sectional and longitudinal studies demonstrating a relationship between metacognitive deficits and reduced motivation and overall negative symptoms. Specifically, Tas et al. (2012) demonstrated that reduced metacognition was associated with lower concurrent motivation, while other studies have shown that metacognition deficits are related to increased concurrent and prospective negative symptoms (Hamm et al., 2012; MacBeth et al., 2014; Rabin et al., 2014; Lysaker et al., 2015b). Further, lower levels of metacognition have been found to be a significant predictor of reduced levels of concurrent motivation (Luther et al., 2016) and increased levels of negative symptoms both six and twelve months later (McLeod et al., 2014). Similarly, Vohs and Lysaker (2014) reported that in those with prolonged schizophrenia engaged in a treatment trial, participants with lower levels of mastery, a domain of metacognition, had consistently lower monthly ratings of motivation than those with higher levels of mastery over a period of six months. Taken together, these findings are also consistent with Bleuler's

(1911/1950) formulation of schizophrenia where he described that people with schizophrenia experience a disturbance in the associative processes that are needed to integrate information and to support meaningful goal-directed behavior.

This study sought to extend the findings of Vohs and Lysaker (2014) by examining how a wider range of metacognition domains was related to motivation over time in a sample that was not engaged in a treatment trial. Specifically, we employed a more comprehensive measure of metacognition to assess whether metacognitive deficits are a potential risk factor for reduced motivation over time in a sample of fifty-one people with a schizophrenia spectrum disorder. We predicted that reduced levels of metacognition would predict lower levels of motivation six months later even after controlling for baseline levels of motivation. Further, although difficulty anticipating rewarding outcomes has been thought to impact motivation in schizophrenia (Gard et al., 2007; Barch et al., 2015), it remains to be established whether anticipatory pleasure and motivation are empirically linked over time and importantly, whether metacognition deficits account for reduced prospective motivation above and beyond the effects of anticipatory pleasure deficits. Thus, we included a measure of anticipatory pleasure to rule out the possibility that reduced anticipatory pleasure accounted for deficits in motivation to a greater extent than metacognition deficits. Similarly, as demographic factors such as age, education, and gender (Faerden et al., 2010; Choi et al., 2014) as well as antipsychotic medication dose (Kirsch et al., 2007; Mas et al., 2013) and psychiatric symptoms (Yamada et al., 2010; Luther et al., 2016) have been linked to motivation, we included measures of these variables as potential covariates. We also included a measure of consummatory pleasure to explore its relationship with prospective motivation.

2. Methods

2.1. Participants

Fifty-one participants with SCID-confirmed (First et al., 2002) diagnoses of schizophrenia ($n=26$) or schizoaffective disorder ($n=25$) were recruited from either a Veterans' Affairs Medical Center ($n=45$) or a community mental health center ($n=6$) for a longitudinal study examining the correlates of metacognition in people with a schizophrenia spectrum disorder. Participants were in a post-acute phase of illness as defined by no hospitalizations or changes in housing or medication within 30 days of study enrollment. Exclusion criteria also included active substance dependence or developmental disability, as determined through a chart review. Twenty-nine participants were taking a single antipsychotic medication (25 atypical, 4 typical antipsychotics), while 16 patients were taking multiple antipsychotics (8 taking one atypical and one typical, 7 taking two atypical, 1 taking two typical antipsychotics). Antipsychotics included aripiprazole, clozapine, fluphenazine, haloperidol, loxapine, olanzapine, quetiapine, risperidone, trifluoperazine, and ziprasidone. Six participants were not taking any antipsychotic medication. There were no significant changes in medication doses (i.e., chlorpromazine equivalent doses) or any hospitalizations during the course of the study. Participants were primarily male, African American, and were enrolled in outpatient treatment. Full demographic information is reported in Table 1.

2.2. Measures

2.2.1. Metacognition

Metacognition was assessed with a two-step process. First, the Indiana Psychiatric Illness Interview (IPII; Lysaker et al., 2002) was

Download English Version:

<https://daneshyari.com/en/article/6812356>

Download Persian Version:

<https://daneshyari.com/article/6812356>

[Daneshyari.com](https://daneshyari.com)