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Assessing motivation orientations in schizophrenia: Scale development and validation

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ABSTRACT

Motivation deficits are common in several disorders including schizophrenia, and are an important factor in both functioning and treatment adherence. Self-Determination Theory (SDT), a leading macrotheory of motivation, has contributed a number of insights into how motivation is impaired in schizophrenia. Nonetheless, self-report measures of motivation appropriate for people with severe mental illness (including those that emphasize SDT) are generally lacking in the literature. To fill this gap, we adapted and abbreviated the well-validated General Causality Orientation Scale for use with people with schizophrenia and with other severe mental disorders (GCOS-clinical populations; GCOS-CP). In Study 1, we tested the similarity of our measure to the existing GCOS (using a college sample) and then validated this new measure in a schizophrenia and healthy control sample (Study 2). Results from Study 1 ($N=360$) indicated that the GCOS-CP was psychometrically similar to the original GCOS and provided good convergent and discriminant validity. In Study 2, the GCOS-CP was given to individuals with ($N=44$) and without schizophrenia ($N=42$). In line with both laboratory-based and observer-based research, people with schizophrenia showed lower motivational autonomy and higher impersonal/amotivated orientations. Additional applications of the GCOS-CP are discussed.

1. Introduction

Motivation dysregulation is common in several disorders including schizophrenia, bipolar disorder, and substance dependence (among others), and appears to be critical to functioning and quality of life (e.g., Gard et al., 2009; Johnson, 2005; Nakagami et al., 2008). Recently researchers have begun to investigate the specific mechanisms of motivational impairment in these disorders using basic science research as a guide. Self-Determination Theory (SDT), a leading macrotheory of motivation, helps identify environmental factors and personality tendencies that lead to adaptive or maladaptive motivated behavior (Deci and Ryan, 1985; 2000; Ryan and Deci, 2000), and is elucidating the specific deficits of motivation in schizophrenia (e.g., Choi et al., 2010; Gard et al., 2014).

One component of SDT is Causality Orientation Theory, which describes motivation-based personality tendencies that orient individuals toward specific behavior in ambiguous situations (Deci and Ryan, 1985). Specifically, individuals can be more autonomous, control, or impersonal/amotivated in their motivation orientation. Autonomy oriented individuals tend to be motivated by engagement and inherent interest in activities, especially focusing on how they might be acting as their own agent, or how activities might deepen their experiences. Control oriented individuals are more often motivated by external praise and reward (especially monetary), and also away from punishment or criticism. Finally, individuals who lack opportunities for inherent engagement or reward may develop a more impersonal/amotivated orientation, and tend feel more disengagement with their actions; their behaviors feel as if they do not have a clear impact on the environment. Although there is an overlap with the autonomous orientation and what is often referred to as 'intrinsic motivation', as well as control orientation and 'extrinsic motivation', the personality orientations described in SDT do not completely align with these forms of motivation. Rather the motivation orientations represent the tendency that an individual will interpret their behavior and the environment as more autonomous, control, or impersonal/amotivated. Naturally, individuals who tend to interpret ambiguous stimuli as potentially deepening their experience or self-expression are more likely to experience more intrinsic motivation, and individuals who tend to see ambiguous situations as involving control will be more extrinsically motivated by reward or away from punishment. Conversely, individuals that

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spend much of their time in environments that give them little opportunity to develop agency or self-expression, or that lack opportunities for reward are more likely to have lower levels of autonomy and a higher level of impersonal/amotivated orientation. In other words, both the nature of the environment and personality orientations are likely to have an effect on motivated behavior (e.g., Deci and Ryan, 2000).

1.1. Autonomy orientation

Although we are unaware of any research looking directly at self-reported autonomy motivation in schizophrenia, recent research has indicated that people with schizophrenia have lower levels of intrinsically motivated behavior, relative to healthy individuals (e.g., Choi et al., 2010; Medalia and Brekke, 2010). For example, in one study, people with schizophrenia showed significantly less intrinsic motivation to complete a cognitive task than healthy individuals, and this rating was connected to engagement in the task itself (Choi et al., 2010). In line with these findings, we recently completed an Ecological Momentary Assessment (EMA) study which indicated that people with schizophrenia are also less likely than healthy individuals to set goals related to autonomy and competence in their daily lives (Gard et al., 2014). Finally, many studies have indicated that lower levels of intrinsic motivation are linked to key constructs such as neurocognition, social cognition, occupational functioning, and overall functioning in schizophrenia (e.g., Fervaha et al., 2014; Gard et al., 2009; Nakagami et al., 2008; Saperstein et al., 2011). Thus, intrinsic motivation appears to be a crucial area of impairment in schizophrenia.

In spite of this, there is a dearth of assessment measures of motivation for people with schizophrenia, or for individuals with severe mental illness. Some self-report measures of motivation, especially intrinsic motivation, have been utilized with mixed results. For example, Barch et al. (2008) found that people with schizophrenia did not differ from participants without schizophrenia in two intrinsic motivation domains, as measured by the Motivational Trait Questionnaire (MTQ, Heggestad and Kanfer, 2000). One possible reason for the lack of differences between individuals with schizophrenia and individuals without schizophrenia on intrinsic motivation may be because the MTQ is designed for use with relatively high functioning individuals (e.g., "It is important for me to outperform my co-workers".). The lack of differences between individuals with schizophrenia and individuals without schizophrenia on intrinsic motivation may be because those with schizophrenia may not be relying on their own experiences when responding but, rather, without having experiential memories for a given item, may be responding how they believe they should answer (e.g., Robinson and Clore, 2002). The Intrinsic Motivation Inventory for Schizophrenia Research (IMI-SR), on the other hand, which measures the intrinsic motivation to complete a specific task (such as performing a cognitive battery), has indicated lower levels of intrinsic motivation in people with schizophrenia (Choi et al., 2010). This scale has clear utility in assessing something akin to the activation of an autonomous orientation in a specific task, but is designed for use with a specific task, and not on general motivated behavior. To summarize, lower levels of intrinsic motivation seen in research in schizophrenia indicate that people with schizophrenia would most likely report lower levels of trait autonomy motivation than individuals without schizophrenia, although this has not been directly tested to date.

1.2. Control orientation

The control orientation of SDT emphasizes approach toward rewards and approval, and avoidance of punishment or criticism (Deci and Ryan, 2000). In schizophrenia, there has been less emphasis on this research area (Silverstein, 2010), and thus far the evidence for or against impairment has been mixed. Indirect evidence, such as response to token economies and laboratory tasks, has shown that extrinsic motivators (i.e., monetary reinforcement) increase engagement in treatment and specific tasks for people with schizophrenia (e.g., Dickerson et al., 2005; Kern et al., 1995; Penn and Combs, 2000; Summerfelt et al., 1991). In contrast, research on 'reward representation' has shown that individuals with schizophrenia appear to have difficulties engaging in goal-directed behavior when a reward is not present (e.g., Gard et al., 2007; Heerey and Gold, 2007). Using EMA, in the study described above, we found that people with schizophrenia set goals that were motivated less by extrinsic reward than individuals without schizophrenia (Gard et al., 2014). However, there were no differences between people with and without schizophrenia on setting goals to avoid punishment or criticism. Beyond this EMA study, most of the work on punishment in schizophrenia has focused on monetary loss (e.g., Waltz et al., 2013), which differs from avoidance of criticism and punishment as defined by SDT (Deci and Ryan, 2000). Furthermore, to our knowledge there is no study focusing on the self-report of extrinsic motivation or specifically the control orientation in schizophrenia. Thus, it is currently unclear whether individuals with schizophrenia differ in terms of control orientation.

1.3. Impersonal/amotivated orientation

The impersonal/amotivated orientation in SDT is characterized by individuals who believe that they do not have agency in affecting outcomes and, therefore, want things to remain as they are; these individuals are likely to be amotivated and disengaged from goal-directed behavior. Deci and Ryan (2000) highlight that this orientation tends to develop when there are few opportunities in the environment for autonomy, or where there are few rewarding stimuli. This orientation appears to be akin to the negative symptom amotivation/avolition (American Psychiatric Association, 2013). The literature has long characterized amotivation as one of the core negative symptoms of schizophrenia (e.g., Bleuler, 1950) and noted its relationship to functional outcome (e.g., Blanchard et al., 1998; Ho et al., 1998). Apathy, defined as "a lack of motivation that is not attributable to diminished level of consciousness, cognitive impairment, or emotional distress", is one possible construct related to the impersonal/amotivated orientation (Marin, 1990, 1991). Research has indicated that apathy is higher in individuals with schizophrenia than in healthy comparison individuals and related to poorer functional outcomes in people with schizophrenia (Kiang et al., 2003). Given the centrality of amotivation in schizophrenia, as well as the research findings on apathy, it would seem likely that people with schizophrenia would report higher levels of the impersonal/amotivated orientation.

1.4. Assessing motivation orientations

One often-used scale to assess general motivation orientation in the general population is the General Causality Orientation Scale (GCOS; Deci and Ryan, 1985). The GCOS consists of 17 different vignettes and asks participants to rate each of the three examples of how they might think in response to each vignette, one 'thought' for each motivation orientation, totaling 51 responses. These responses are averaged for each motivation orientation—autonomy, control, impersonal/amotivated. The GCOS shows utility in a variety of contexts including why a person engages in exercise (Rose et al., 2001; Vancampfort et al., 2013), the link between exercise and well-being in older adults (Solberg et al., 2013), in understanding conflict in romantic relationships