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Self-efficacy and functional status in schizophrenia: Relationship to insight, cognition and negative symptoms

Matthew M. Kurtz [a,b,c,*], Rachel H. Olfson [a], Jennifer Rose [a]

[a] Department of Psychology, Quantitative Analysis Center and Program in Neuroscience and Behavior, Wesleyan University, Middletown, 06459, USA
[b] Schizophrenia Rehabilitation Program, Institute of Living, Hartford, CT 06106, USA
[c] Department of Psychiatry, Yale School of Medicine, New Haven, CT 06511, USA

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ABSTRACT

Self-efficacy, defined as the confidence one has in the ability to perform a behavior or specific task, has been introduced as a crucial motivational factor for successfully carrying out social and everyday living skills (Bandura, 1977, 1997). Few studies have assessed its role in functioning in schizophrenia. The current study was designed to investigate whether degree of illness insight determined whether self-efficacy was a mediator of the relationship between two key illness features, negative symptoms and cognition, and functional skills. Sixty-nine individuals with schizophrenia were administered measures of self-efficacy, cognition, symptoms, insight and performance-based measure of everyday living and social skill. Results revealed that self-efficacy was only linked to measures of functional skills when illness insight was intact. There was evidence of moderation of confounding effects such that when self-efficacy was controlled, the relationship between negative symptoms and measures of everyday life skills became non-significant, but only when illness insight was intact. These findings emphasize the importance of including illness insight in models of the role of self-efficacy in functioning in schizophrenia.

1. Introduction

While contemporary pharmacologic strategies are effective at managing positive symptoms, they have had little impact on poor vocational, social and educational outcome that is a defining feature of schizophrenia (DSM-IV; APA, 1994). Thus, understanding determinants of poor outcome in the disorder has become a central goal of study for the development of efficacious treatments. A wealth of studies conducted over the past 20 years has supported a link between cognitive skills (e.g., attention, memory, and problem-solving) and functional status for patients with schizophrenia, whether measured cross-sectionally or longitudinally, and whether functioning is measured by third-party assessments of community function, measures of performance-based social and daily-living skill measures, or the ability to benefit from rehabilitation programs. Current estimates suggest that 20–60% of variance in functioning is explained by cognitive deficits (e.g., Green et al., 2000, 2004).

Similarly, negative symptoms, including blunted affect, social withdrawal, and alogia, have also been linked moderately to a variety of indices of functional status including third-party ratings of community function (e.g., Kurtz et al., 2005) as well as performance-based measures of social (Patterson et al., 2001b) and everyday living (Patterson et al., 2001a) skills. Most recent analyses from the CATIE trial (Rabinowitz et al., 2012; n = 1447) suggest that improvements in negative symptoms are more strongly linked to improvements in function than other symptom types, even when functioning items that might be linked to ratings of negative symptoms (method variance) are removed. Recent research has sought to expand on previous studies by understanding *how* cognition and negative symptoms are linked to function in schizophrenia, and whether other illness variables may mediate these relationships. For example, measures of social cognition, the cognitive operations involved in perceiving, understanding and interpreting our social world have been increasingly viewed as mediating the relationship between cognitive skills and outcome (see Schmidt et al., 2011, for a review), and thus have been increasingly attended to as a potential target for treatment.

Self-efficacy, defined as the confidence one has in their ability to perform a behavior or specific task, has been introduced as a crucial motivational factor for successfully carrying out social and everyday living skills (Bandura, 1977, 1997). Few studies have assessed its role in functioning in schizophrenia. Pratt et al. (2005) in a cross-sectional study of 85 patients with schizophrenia or schizoaffective disorder, tested a model in which a measure of self-efficacy was assessed as a mediator of the relationship between cognition, negative symptoms and premorbid functioning and a measure of psychosocial status (an average of two indices of third-party rated function). Results revealed that while measures of self-efficacy were modestly related to function and negative

* Corresponding author at: Department of Psychology, Wesleyan University, Judd Hall, 207 High Street, Middletown, CT 06459, USA. Tel.: +1 860 695 2072; fax: +1 860 685 2761.
E-mail address: mkurtz@wesleyan.edu (M.M. Kurtz).

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symptoms and premorbid function, there was no evidence that self-efficacy mediated links between other illness domains and functional status. Instead, there was evidence that negative symptoms mediated the relationship of self-efficacy and function. The authors concluded that negative symptoms, rather than self-efficacy should be the target of novel behavioral and pharmacologic treatments that have as a goal enhancing function in schizophrenia. The authors noted that impaired insight in their sample may have impacted the ability of clients to render the type of appraisal of self-efficacy evident in healthy populations.

In a more recent study, Cardenas et al. (in press) explored whether self-efficacy levels bridged the capacity-to-functioning gap in which a person with schizophrenia is able to demonstrate the capacity for completing daily life tasks, but fails to successfully accomplish these tasks in everyday life. In a sample of 97 middle-aged and older people with schizophrenia or schizoaffective disorder, results revealed a relationship between functional capacity and actual community daily functioning in patients with high self-efficacy (those who believed that they could carry these behaviors out successfully in the community); however, this relationship was not significant in patients with low self-efficacy. These findings suggest that the construct of self-efficacy may help explain why some individuals with schizophrenia have the capacity to function well in the community but remain unable to translate these skills into achieved levels of community function. Thus, studies to date in schizophrenia support the role of motivational factors such as self-efficacy in bridging the gap between everyday life skills demonstrated in the clinic and skills employed in the community, but show less of a role in influencing functioning in the disorder when compared to other key illness domains.

The current study was designed to investigate whether self-efficacy either serves, or doesn't serve as a mediator of the relationship of key illness features, negative symptoms and cognition, and two performance-based measures of functional skills, a measure of performance of everyday living skills and a measure of social skill, depending upon the level of illness insight. The study was motivated by the assumption that accurate insight into illness is a necessary precondition for forming accurate appraisals about one's ability to carry out behaviors necessary for functioning and that individuals with poor illness insight would also show poor insight into one's own functioning and the effectiveness of one's behaviors. We also hypothesized that performance-based assessments of skills would be less influenced by factors external to the disease that might influence the ability to perform behaviors in vivo even when belief in successful performance of those behaviors is high, (e.g., opportunity to engage in social interactions secondary to living in a an isolated area, limited opportunity to engage in recreational activities because of limited financial resources), and thus might provide a better index of the relationship of key illness domains, beliefs about skills and performance of those skills. We predicted that: (1) illness insight would moderate the relationship of self-efficacy with functional status in domains of everyday living and social skills; patients with good illness insight would show a stronger relationship between self-efficacy and function than patients with poor insight, and (2) only in patients with strong illness insight, and not in those with poor insight, self-efficacy would mediate the relationship of key illness domains such as negative symptoms and cognition and measures of everyday living and social skills (moderated mediation).

2. Methods

2.1. Participants

Sixty-nine patients who met the criteria for schizophrenia or schizoaffective disorder, according to the DSM-IV (APA, 1994) participated. Diagnosis was confirmed via the Structured Clinical Interview for DSM-IV (First et al., 1995). Exclusion criteria for all potential participants were: (a) known neurological disease, (b) developmental disability, (c) current substance abuse, (d) mental retardation as evidenced by a history of services, or (e) lack of fluency in English. All participants provided written informed consent forms and all procedures were in accordance with institutional review procedures. Recruitment for the study was ongoing over a five-year period (2007–2012) and participants were recruited from one of three sites: outpatient clinics at The Institute of Living in Hartford, CT. (n = 56), Inter-Community Mental Health Group in East Hartford, CT. (n = 10), or an inpatient unit at Cedar Crest Mental Health Center, Newington, CT. (n = 3). Data for this study were collected at entry to an ongoing parent study of the combined effects of cognitive remediation and social skills training on a variety of proximal and distal treatment outcome measures in schizophrenia (e.g., Kurtz et al., 2007). Demographic and clinical characteristics of the sample are presented in Table 1.

2.2. Assessment measures

2.2.1. Self-efficacy

The Revised Self-Efficacy Scale (SES, McDermott, 1986) designed specifically for use with people with schizophrenia, was used to assess the participants' confidence in their abilities to control symptoms associated with their illness in order to perform specific tasks or behaviors. The ratings are based on a 100-point scale, in which a rating of "0" indicates no confidence, and a rating of "100" indicates total confidence in one's ability to complete the task or behavior. The scale consists of fifty-seven items that are divided into three subscales, each consisting of nineteen items. The subscales measure confidence in one's ability to perform social behaviors and to manage positive and negative symptoms, as well as an overall self-efficacy score, representing a mean score of the three subscales. The scale has demonstrated strong evidence of reliability and evidence of construct validity (McDermott, 1986; Pratt et al., 2005).

2.2.2. Insight into illness

Insight into illness was measured from the PANSS, "Lack of Judgment and Insight (G12)". This item is rated on a seven-point scale with a "1" indicating no impaired awareness or understanding of one's own psychiatric condition and life situation and a "7" indicating extreme impairment, an emphatic denial of past and present psychiatric illness.

2.2.3. Cognitive assessment

All participants were administered a neuropsychological test battery including the Digit Span and the Digit Symbol subtests from the

Table 1
Demographic and clinical characteristics (n = 62–68).

Variable	Mean (SD; range)
Age	31.4 (11.5; 18–57)
Sex (% male)	73.5
Education (years)	12.0 (2.2; 6–16)
Illness duration (years)	10.6 (9.8; 0.3–37)
Age onset (years)	22 (6.3; 13–46)
PANSS Positive Subscale Score	17.3 (5.3; 9–30)
PANSS Negative Subscale Score	19.3 (5.7; 9–35)
Antipsychotic medication	**Percentage (%) treated**
Atypical:	
Risperidone	23.0
Clozapine	14.9
Quetiapine	14.9
Olanzapine	13.8
Aripiprazole	12.6
Paliperidone	3.5
Ziprasidone	3.5
Typical:	
Haloperidol	6.9
Perphenazine	4.6