



## Stigma as a predictor of insight in schizophrenia

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### ABSTRACT

Insight in schizophrenia can be seen as a multifactorial phenomenon. Although multifactorial pathways have also been suggested for insight formation, motivational explanations have rarely been tested. The present study explores stigma as one possible determinant of a motivated lack of insight in integrated models of insight formation. It examines the contribution of socio-demographic and clinical variables, neurocognitive functions, symptoms, and stigma to the prediction of insight into illness. Patients diagnosed with schizophrenia spectrum disorders ( $N = 111$ ) participated in a comprehensive battery of instruments to measure insight dimensions, stigma, neurocognitive functions, symptoms, socio-demographic and clinical variables. Block-wise multiple regression analysis indicates significant association of variability in insight dimensions with gender (7%) and stigma (i. e., stereotype agreement: 5%). Our findings demonstrate an incremental validity of stigma, which indicates a motivational pathway of insight formation. This study enables better understanding of the multifactorial nature of insight, which should be considered in therapeutic interventions to improve insight. The roles of gender and neurocognitive functions in insight formation are also discussed.

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### 1. Introduction

Lack of insight is a common phenomenon in schizophrenia-spectrum disorders, with prevalence rates for patients with this diagnosis varying around 50% (Johnson and Orrell, 1996; Pyne et al., 2001). Insight can be understood as a complex phenomenon that includes different factors which are clinically relevant, such as awareness of the disorder, of social consequences of the disorder, and of need for treatment (Amador et al., 1991). Because clinical insight is associated with aspects relevant for treatment, such as symptoms (Mintz et al., 2003; Ritsner and Blumenkrantz, 2007), compliance (Fenton et al., 1997; Lacro et al., 2002), course of illness (Fennig et al., 1996; Thompson et al., 2001), and quality of life (Hasson-Ohayon et al., 2006; Karow et al., 2008), there is a growing interest in understanding the formation of this aspect of insight. In the present article, we chose clinical insight as our focus of investigation.

So far mainly neurocognitive explanations for lack of clinical insight have been discussed: IQ, working memory, verbal memory, metacognition, and executive functions (e. g., Sartory et al., 2001; Drake and Lewis, 2003; Lysaker et al., 2005; Langdon et al., 2006; Lysaker et al., 2006; Mutsatsa et al., 2006; Langdon and Ward, 2009). The study of neurocognitive function seem to be a promising approach, as significant associations with insight have been found (Lysaker and Bell, 1994; Young et al., 1998; Smith et al., 2000). A meta-analytic integration of these findings, however, resulted in a statistically

significant, but weak mean effect for the relation between insight and neurocognitive measures (Aleman et al., 2006). Accordingly, neurocognitive perspectives alone fail to explain the complexity of this phenomenon. Without neglecting possible impacts of neurocognitive and neurological variables on insight, multifactor models, which combine the neurocognitive approach with an examination of motivational variables, could be a useful extension of one-dimensional neurocognitive approaches (e. g. Ritsner and Blumenkrantz, 2007). To account for this possibility of multiple interrelated influences on insight, Startup (1996) postulated a multi-factor model with a curvilinear relationship between insight and cognitive deficits. He furthermore postulated three subgroups of patients: a first group with a high level of insight and intact cognitive functions, a second group scoring – due to reduced ability to maintain a stable representation of the illness – moderately on insight and poorly on cognitive functions, and a third group showing low insight values despite unimpaired cognitive functions. For the third group, motivational aspects have to be considered. Startup found the postulated curvilinear relationship and interpreted this result as an indication of distinct, yet equifinal pathways to insight formation, considering ability and motivation to be the key determinants in insight formation. He concluded that the patients of the third group may deny their illness to maintain self-esteem. Lysaker et al. (2003) confirmed Startup's subgroups of insight, and Cooke et al. (2007) verified the finding of a curvilinear relationship of insight and neurocognition. They also showed significant correlations between insight and self-esteem which supports the hypothesis that motivation may contribute to reduced insight.

As persons affected by schizophrenia-spectrum disorders frequently experience stigmatization (Dickerson et al., 2002), which

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may threaten a person's self-esteem (Corrigan and Ruesch, 2002; Yanos et al., 2008), denial or deception in persons who are aware of the stigma may be one source of a motivated pathway to reduced insight (Link et al., 1989). Theoretical approaches to stigma (Link et al., 1989; Link and Phelan, 2001; Corrigan and Watson, 2002) emphasize three main aspects in the process of stigmatization: a negatively stereotyped label (discrimination), agreement with these stereotypes (legitimacy) and application of the label to oneself (identification). Corrigan et al. (2006) refined this process and postulated that self-esteem will decrease due to stigma if a person is first aware of negative stereotypes, second agrees with these stereotypes and third adopts them for himself. Considering these assumptions, a relation of stigma of schizophrenia and insight is conceivable. While the occurrence of a label of schizophrenia may contain enough potential to stimulate a stigma process, insight may play a role in the identification process which is part of stigmatization. Although causal directions in the relation of stigma and insight are uncertain, one can assume that insight and stigma may be reciprocal constructs in a complex interplay.

Despite these theoretical assumptions, the direct relationship between insight and stigma has not been investigated yet. In addition to theoretical approaches which describe the interplay of stigma and insight and its link to outcome variables like self-concept, illness courses or functioning (for a detailed view see Williams, 2008, or McCay and Seeman, 1998), some empirical studies integrated both in the prediction of outcome variables. Warner et al. (1989) predicted self-esteem by insight and stigma variables and their interaction. Patients who accepted the illness – indicating insight into illness – and at the same time experienced stigma had the lowest scores on self-esteem. Lysaker et al. (2007) performed cluster analyses and reported similar results. Persons with moderate acceptance of stigma and high insight scored significantly lower in hope and self-esteem measures than persons with minimal stigma acceptance and high insight and persons with low insight and mild stigma acceptance. The unique contribution of stigma in the prediction of self-esteem was demonstrated by Kleim et al. (2008). Stigma was a significant predictor of self-esteem, even after controlling for insight. Staring et al. (2009) conducted structural equation modeling and found that stigma moderated the relation of insight with self-esteem, depressed mood and quality of life. This association was strong when stigma was high and weak when stigma was low. The authors interpreted this result as supporting the hypothesis that unawareness might also be a motivational mechanism as it preserves one's self-esteem by rejecting the stigma of schizophrenia. These results demonstrate that stigma and insight both relate to negative emotionality and self-concept variables (see also Lincoln et al., 2007). Concerning the complex interplay of stigma and insight, one unambiguous conclusion that can be drawn from these findings is that stigma is especially relevant for patients who are aware of their diagnosis.

Since the vast majority of literature in this area treats both stigma and insight as distinct predictor variables, the contribution of stigma to insight formation and the direct link of stigma and insight are less clear. Given the limited explanatory power of neurocognitive variables and the growing evidence for multi-factor models, the idea of a motivated unawareness of illness should be considered a viable complementary account. As stigma may contribute to this kind of motivation, the present study aimed at inserting stigma into a multi-factor analysis of insight formation. Accordingly, we wanted to investigate the prediction of different aspects of insight in a sample of patients with a diagnosis of schizophrenia, based on independent variables including socio-demographic and clinical characteristics, neurocognitive functions, symptom clusters, and stigma. We hypothesize that insight is related to these variables, especially neurocognition and stigma, meaning that patients who are aware of stereotypes and who are cognitively impaired are less insightful. Based on the literature reported above, we also assume that stigma uniquely contributes

to the variability of insight after controlling for neurocognition, socio-demographic and clinical variables.

## 2. Methods

### 2.1. Procedure

For our cross-sectional study, participants were recruited from six hospitals and two residential homes in the north of Germany from July 2009 to June 2010. Study inclusion criteria were an age range of 18–65 years, and meeting criteria for schizophrenia spectrum disorder according to Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revision (DSM-IV-TR). Diagnoses were obtained by an experienced psychiatrist and a senior research clinical psychologist at a best estimate diagnostic conference using all sources of information available (e.g., checklist-based diagnostics, clinical records, and indicators of illness course). Diagnoses of alcohol or psychoactive substance abuse or dependence, organic brain dysfunction, mental retardation as well as a premorbid IQ estimate lower than 70 were exclusionary, while additional comorbid disorders were admitted. Data were collected by clinical psychology graduate students, who were trained in interview skills, passed interview simulations and video-based rater trainings as recommended (Mueller and Wetzel, 1998), as well as trainings in all diagnostic instruments. All raters were trained to the pre-specified criterion (i.e., Scale to Assess Unawareness of Mental Disorder [SUMD; Amador and Strauss, 1990] and Positive and Negative Syndrome Scale scores [PANSS; Kay et al., 1987] deviating not more than one point from an experienced senior psychologist's rating). Out of a battery from a larger study on neurocognitive and motivational correlates of insight in schizophrenia, we used data from four instruments for this investigation.

### 2.2. Measures

#### 2.2.1. Descriptive data

Socio-demographic data on age, gender, years of education, marital status, and clinical data such as diagnoses, age at illness onset, illness duration, institution (hospital or residential home), medication (Chlorpromazine equivalent (CPZE)), and response (rated on a 5-point Likert scale) were collected by chart reviews, patient surveys and interviews conducted by a senior psychiatrist or psychologist. Premorbid IQ estimate was operationalized by the Wortschatztest (WST; Schmidt and Metzler, 1992). The WST measures verbal comprehension and is considered as an adequate estimate of premorbid verbal (crystalline) IQ for schizophrenia patients (Russell et al., 2000).

#### 2.2.2. Insight (extended SUMD)

Lack of insight was assessed using the Scale to Assess Unawareness of Mental Disorder (SUMD; Amador and Strauss, 1990) in an extended version (Subotnik, K. L., 2011. UCLA modified version of the Scale for Unawareness of Mental Disorder [originally by Amador et al., 1993. Assessment of insight in psychosis. *Am. J. Psychiatry* 150, 173–179]. University of California, Los Angeles.). The original version includes three general items, specifically, awareness of mental disorder (SUMD2), awareness of effects of medication (SUMD6), and awareness of social consequences (SUMD8). Each item is rated by the interviewer on a 5-point Likert scale (1 = fully aware, 3 = somewhat aware, 5 = fully unaware). Another 17 items are used to assess awareness of specific symptoms and the correctness of attribution of these symptoms. Each item can be answered concerning current or past insight. With the intention to widen the scope of insight assessment, Subotnik (2011) extended the SUMD by five further general items: awareness of general problems (SUMD1), definition of mental disorder (SUMD3), label of mental disorder (SUMD4), agreement with diagnosis (SUMD5), and awareness of need for treatment (SUMD7). For statistical analyses, all eight general items were included, as well as sum scores for the original (SUMD2, 6, 8), and extended (SUMD1–8) items. All ratings are based on current insight, with higher scores indicating lower insight. We investigated and report on general items only, because different formation models have to be assumed for symptom awareness and attribution (Lincoln et al., 2007), which is beyond the scope of this paper.

#### 2.2.3. Stigma (SSMIS)

The Self-Stigma of Mental Illness Scale (SSMIS; Corrigan et al., 2006; German version: Ruesch and Brueck, Unpublished) was used to operationalize stigma. It consists of 10 items rated on a 5-point Likert scale (1 = fully disagree to 5 = fully agree) and four subscales: stereotype awareness (e.g. "persons with diagnoses of schizophrenia are said to be violent"), stereotype agreement (e.g. "I think persons with diagnoses of schizophrenia are violent"), self-concurrence (e.g. "because I have a diagnosis of schizophrenia, I am violent"), and self-esteem decrement due to self-stigma. We used the scale stereotype agreement only, because stereotype awareness has been shown to be uncorrelated to self-stigma (Corrigan et al., 2006) which means that subjects did not refer the stigma to themselves, and second because the scales self-concurrence and self-esteem decrement can only be answered if patients are aware of their mental disorder. For a facilitated reading we subsequently use the term stigma when referring to stereotype agreement.

#### 2.2.4. Symptoms (PANSS)

The PANSS (Kay et al., 1987) is a 30-item rating scale completed by clinically trained research staff at the conclusion of chart review and a semi-structured interview. Six items are based on an interview, conducted with mental health nurses who

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