

The Role of Insight in Moderating the Association Between Depressive Symptoms in People With Schizophrenia and Stigma Among Their Nearest Relatives: A Pilot Study

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Background: There is evidence of a positive association between insight and depression among patients with schizophrenia. Self-stigma was shown to play a mediating role in this association. We attempted to broaden this concept by investigating insight as a potential moderator of the association between depressive symptoms amongst people with schizophrenia and stigmatizing views towards people with mental disorders in their close social environment. **Method:** In the initial sample of 120 pairs, data were gathered from 96 patients with a diagnosis of “paranoid schizophrenia” and 96 of their nearest relatives (80% response rate). In this cross-sectional study data were collected by clinical interview using the following questionnaires: “The Scale to Assess Unawareness of Mental Disorder,” “Calgary Depression Scale for Schizophrenia,” and “Brief Psychiatric Rating Scale.” The stigmatizing views of patients’ nearest relatives towards people with mental disorders were assessed with the “Mental Health in Public Conscience” scale. **Results:** Among patients with schizophrenia depressive symptom severity was positively associated with the intensity of nearest relatives’ stigmatizing beliefs (“Nonbiological vision of mental illness,” $\tau = 0.24$; $P < .001$). The association was moderated by the level of patients’ awareness of presence of mental disorder while controlling for age, sex, duration of illness and psychopathological symptoms. **Conclusions:** The results support the hypothesis that the positive association between patients’ depression and their nearest relatives’ stigmatizing views is moderated by patients’ insight. Directions for further research and practical implications are discussed.

Key words: stigma/insight/depression/schizophrenia/awareness of illness

Introduction

Poor insight in psychosis refers to a lack of awareness of a variety of factors related to mental disorder including its presence, symptoms, consequences, and needs for treatment.¹ Lack of insight is common among people with schizophrenia, among whom 30%–80% are unaware of their mental health condition.^{2,3}

Research on the clinical implications of insight in patients with schizophrenia has revealed a dilemma, described as the “insight paradox.”⁴ Although low insight was shown to be associated with poor treatment adherence and worse clinical outcomes,^{3,5–8} high insight has been linked to increased levels of depression, hopelessness, risk of suicide, lower self-esteem, decreased well-being, and quality of life.^{3,9–15}

A variety of studies have attempted to shed light on the association between insight and depression and several possible explanations have been offered.^{4,16,17} While “attribution theory”³ suggests that depression can lead to increased insight, the “defense theory”¹⁸ offers an opposite explanation. Some authors have suggested that the association between insight and depression is more complex, nonlinear and mediated by third constructs, such as social support,¹⁹ metacognitive abilities,²⁰ experiential avoidance,²¹ and internalized stigma.^{4,16,17,21}

Depression in schizophrenia is a major risk factor for suicide,²² what constitutes a serious clinical problem as suicide rates in people with schizophrenia are 8 times higher than in the general population²³ and 20%–40% patients attempt suicide.²⁴ Higher insight in schizophrenia has been shown to be a risk factor for suicidality^{7,13,14,25} although this association is mainly explained as mediated by depression, especially its cognitive component

(hopelessness).^{13,26} Depression, hopelessness, despair and demoralization are therefore particularly dangerous if they are associated with increasing awareness of the disorder.^{10,24}

However, it has also been shown that increase in insight may not always be associated with depression and hopelessness. Firstly, although baseline insight is a risk factor for suicide, its increase as a function of treatment was shown to decrease suicide risk.^{14,26} Secondly, the association between insight and depression may differ in relation to the stage of illness and is demonstrated to be stronger among those with a longer duration of disorder, and those in the post-acute stage.¹¹ A possible explanation for this is the accumulation of chronic demoralization during years of repeated relapses, leading to a feeling of hopelessness. Finally, the interrelation between insight and depression can be explained by other factors, such as patients' constellation of beliefs, appraisal of illness and attitude towards it (eg, self-stigma, self-esteem).^{4,11,16,17}

In this context, approaching insight as a personal narrative of psychiatric illness is particularly interesting²⁷ as it may help to combine mental illness awareness and personal beliefs related to it. It may be assumed that if the personal illness narrative (ie, understanding of a personal mental condition) is contaminated with stigmatizing beliefs that exist in the external social environment, insight can be merged with stigma and lead to its internalization, demoralization, hopelessness, depression, and consequently suicidality.

To support this idea there are data on the association between stigma, depression and suicidality.²⁸ The experience of discrimination was shown as leading to suicidal feelings for 38% of people with mental disorders as well as to negative self-image, perceived decreased supportive networks, and feelings of hopelessness.²⁹ In another study perceived stigma was shown to be associated with suicidality only among those labeled as "mentally ill."³⁰

In a similar way, we assumed that in cases of awareness of illness (self-attaching the label of mental illness), people with schizophrenia may become particularly vulnerable to stigma in their environment. It is possible that stigmatizing beliefs in the close social networks of people with schizophrenia are internalized and lead to depression only when patients have high levels of insight into the disorder. We thus hypothesized that the association between patients' depressive symptom severity and the intensity of stigmatizing views held by their nearest relatives is moderated by patients' insight into the disorder. The current study explores a novel area of the "insight paradox" by broadening its perspective from a single person to larger social structures.

Methods

Participants and Recruitment Procedure

Participants were recruited from the Minsk Psycho-Neurological Dispensary and the Republic Science and

Practice Center of Mental Health in Minsk, Belarus, from a case-register of people with a clinical diagnosis of paranoid schizophrenia between February 2010 and December 2012. We remained focused on cases of paranoid schizophrenia to increase the homogeneity of the sample, and as there are data showing that the risk of suicide is higher among patients with this subtype of schizophrenia.³¹ According to the country regulations, all cases of schizophrenia diagnosed by a certified psychiatrist within governmental mental health care facilities of Belarus are to be included into the case-register and remain there until otherwise decided by a committee of at least 3 psychiatrists. A decision to remove a patient is made if he/she is not hospitalized and remains symptomless for a period of at least 3 years.

The initial sampling frame consisted of 4764 cases from which 200 people with schizophrenia were randomly selected. Selected cases were assessed by analyzing medical documentation, contacting the psychiatrist in charge of the case and if necessary approaching the patient by phone and/or in person. "Inclusion criteria" consisted of having an ICD-10 diagnosis of paranoid schizophrenia confirmed by a certified psychiatrist, being aged between 18–65 years, being clinically well enough to fill out the questionnaires, and having a nearest relative available. Potential participants were "excluded" if they had comorbid neurological diseases, developmental disabilities, current substance abuse (except tobacco), mental retardation, or disability due to a severe chronic somatic disease. Out of 200 cases, 120 met the inclusion criteria and were included in the study.

In addition to the individuals with schizophrenia, we also enrolled their nearest relatives into the study. We defined nearest relatives by asking patients included in the study: "Who is the person in your life that you are closest to?" OR (if difficult to answer) "With whom do you spend most of your time?" OR (if difficult to answer) "In the case of an emergency with whom would you contact?" The nominated relatives were approached by phone, the study was described and they were invited to fill in the questionnaire during their next contact with the mental health care facility.

All study participants were suitably informed about the nature of the study, and provided written informed consent. The study was approved by the council of Belarussian Medical Academy of Post-Graduate Education (approval N 11, December 17, 2009).

Instruments and Data Collection

Insight was assessed via the Russian-language version of the Scale to Assess Unawareness of Mental Disorder (SUMD).³² Responses were rated using a 5-point Likert scale, with higher scores indicating poor awareness. The Russian version of the scale was validated in Moscow State University,³³ showing good internal and external

validity (Cronbach's $\alpha = .93$, Guttman Split-Half = 0.89, Equal-length Spearman-Brown = 0.9).³⁴

Depressive symptoms were evaluated using the Russian-language version of the Calgary Depression Scale for Schizophrenia (CDSS).³⁵ The CDSS consists of 9 items each graded on a 4-point Likert scale. Validity of the English version of the scale has been shown to have good psychometric properties in patients with schizophrenia³⁶ and it has been claimed to be the best scale for evaluating depression in people with schizophrenia compared to other psychometric instruments.^{37,38} The scale was translated into Russian by the MAPI Research Institute, Lyon, France. Despite there being no data available regarding the validation of the Russian version, the scale has shown good internal consistency based on the results of the current study (Cronbach's $\alpha = .88$).

Data on the intensity of psychopathological symptomatology were collected using the Russian version of the Brief Psychiatric Rating Scale (BPRS). The scale is a well-known rating scale developed by Overall in 1962 to measure the severity of symptoms in different mental disorders.³⁹ It is based on a clinical interview with a patient and provides a sum of 18 items scored from 1 (not present) to 7 (very severe). The Russian version of the scale has been used multiple times in psychiatric research^{40,41} and recommended as a standardized instrument to assess recovery among Russian-speaking patients with schizophrenia.⁴⁰

Stigmatizing beliefs held by the participants' nearest relatives regarding mental health were assessed via the "Mental health in public conscience" questionnaire (MHPC), a Russian-language questionnaire developed by Serebriyskaya et al.⁴² Answers to each of 120 items were given on a 4-point scale ("disagree," "somewhat disagree," "somewhat agree," "agree") with higher scores indicating stronger stigmatizing beliefs. The sum is calculated independently for each of 4 factors. Based on the literature and expert opinion the authors of the questionnaire have developed a list of 120 stigmatizing statements covering cognitive, emotional and behavioral components of stigma related to mental illness, people with mental illnesses and psychiatry. The questionnaire was tested by the authors with a sample of 500 people living in Moscow, Russia.^{43,44} Using factor analysis the authors derived 4 independent factors of stigmatizing beliefs: (1) "Control and rejection" (statements related to limitations of rights and distancing from people with mental illnesses, who were perceived as dangerous, unpredictable and unreliable); (2) "Negative attitude toward psychiatry" (statements related to negative attitude toward psychiatry, psychiatrists and psychiatric treatment); (3) "Aggressive hostility" (statements related to hostility towards people with mental illness, and to perceiving them as "bad," "uninteresting," "unintelligent," etc.); (4) "Nonbiological vision of mental illness" (statements rejecting or questioning the objectivity of psychopathology, the medical model of mental illness, and suggesting that it is a result

of laziness, sins, lack of responsibility, hidden talents or paranormal abilities etc.). The rationale for using a locally developed scale was the assumption that it has better sensitivity to cultural and linguistic specificity as the use of scales created in high income countries to measure stigma in other world regions has been critiqued.⁴⁵ Despite the limited data on the validity and reliability of the questionnaire, in our study the scale has shown good internal consistency (Cronbach's $\alpha = .81$).

All data were collected by the researcher who is an officially qualified clinical psychiatrist in Belarus and has training and experience in planning and conducting research. However, no formal training was undertaken on the usage of scales as such training is not available in Belarus. There was no separation between collection of data on insight and depression as data were collected by the same rater.

Analysis

The data were processed using MATLAB Statistics and Machine Learning Toolbox Version 10.1 (R2015b). As the raw data didn't fit a normal distribution, we used non-parametric statistics in the first and second stages of the analysis while analyzing associations between stigma and depression.

First, a Kendall correlation (τ) was used to test for an association between patients' depressive symptomatology and the stigmatizing views held by their nearest relatives. The correlation test was undertaken for the whole group and separately in each of the 3 groups of people with schizophrenia, divided according to their level of insight ("Awareness of presence of mental disorder" aspect): (1) Full awareness of presence of mental disorder (SUMD score 1)—37 subjects; (2) Partial awareness of presence of mental disorder (SUMD score 2–3)—32 subjects; (3) No awareness of presence of mental disorder (SUMD score 4–5)—27 subjects.

Second, to test for differences in correlations between 3 groups of patients with different levels of insight, an additional set of permutation tests was conducted, comparing groups in pairs. The null hypothesis of the permutation test was that there was no difference in correlation coefficients between groups of patients with different insight levels; an alternative hypothesis was that there is a greater correlation in the first comparison group.

Third, to assess how insight, stigma and their interaction predicted the intensity of depressive symptoms in patients with schizophrenia when controlling for other variables (sex, age, duration of illness, and intensity of psychopathological symptomatology [BPRS]) we conducted a linear regression analysis. To check if the residuals of the above regression model followed a normal distribution, we analyzed the normal probability plot and performed the Kolmogorov-Smirnov test on standardized model residuals (test statistic = .10, $P = .30$) which did not reject the normality assumption.

Results

Sample Characteristics

Out of 120 initially included pairs of patients with schizophrenia and their nearest relatives, 96 took part in the study (80% response rate). Five patients refused to participate in the study and in 19 cases relatives refused to fill in the questionnaires or became inaccessible.

The characteristics of the 96 participants with schizophrenia are shown in [table 1](#). Mean age was 38.8 (SD = 9.9) and 45.8% were male. Most participants were unemployed (92.7%) and unmarried (89.6%). On average, participants had a duration of illness of 13.7 (SD = 8.9) years and had been hospitalized 12.9 (SD = 11.2) times on average. The majority of patients (96.8%) were on antipsychotic medication. BPRS and CDSS means were 35.1 (SD 7.8) and 3.98 (SD 4.7), respectively. The majority of

relatives who participated in the study were parents of the patients (mothers—56.3% and fathers—10.4%), followed by second-degree relatives.

The Association Between Nearest Relatives' Stigmatizing Views and Patients' Depressive Symptoms as Moderated by the Level of Insight of the Latter

There was strong evidence of an association between patients' depressive symptom severity and the factor "Nonbiological vision of mental illness" ($\tau = 0.24$; $P < .001$) of the "Mental health in public conscience" questionnaire for the whole sample of 96 pairs ([table 2](#)). Because of this, the further analyses were conducted with respect to this factor of stigmatizing beliefs.

After dividing the whole sample according to the patients' level of insight (full, partial, no awareness) the correlation analysis showed evidence of an association ($\tau = 0.41$; $P < .01$) between patients' depressive symptoms and nearest relatives' stigmatizing views only in the group with full awareness of the presence of a mental disorder with no evidence of an association in the groups with partial ($\tau = 0.14$; $P = .31$) and no awareness ($\tau = 0.14$; $P = .37$) of the presence of a mental disorder ([table 3](#)).

The results of the permutation analysis are presented in [table 4](#). The null hypothesis of equal Kendal correlations in the groups with full and no awareness was rejected at a significance level of .05, in favor of a stronger correlation in group with full awareness ($\Delta\tau = 0.26$, $P < .05$). When comparing groups with full and partial awareness, the P -value was close to the significance level ($\Delta\tau = 0.27$, $P = .051$), indicating a high probability that the correlation in the group with full awareness is stronger than in the group with partial awareness. When comparing groups with partial and no awareness, the P -value was much higher than the significance level ($\Delta\tau = -0.003$, $P = .5$).

The results of the regression analysis are presented in [table 5](#). After controlling for age, sex, duration of illness, and intensity of psychopathological symptoms there was evidence of an interaction between insight and stigma in predicting the intensity of depressive symptoms. Among the 4 different factors of relatives' stigmatizing views, only "Nonbiological vision of mental illness" and its interaction with patients' awareness of the presence of a mental

Table 1. Sociodemographic Characteristics of the Sample

Variable	N (%)	Mean (SD)
Total	96 (100)	
Gender (male)	44 (45.8)	
Employed	17 (17.7)	
Married	10 (10.4)	
Receiving disability pension	70 (77.9)	
Deprived of legal capacity	12 (12.8)	
Receiving antipsychotic treatment	93 (96.8)	
Age (y)		38.8 (9.9)
Duration of illness (y)		13.7 (8.9)
Number of hospitalizations		12.9 (11.2)
Education (y)		13.1 (2.7)
BPRS		35.1 (7.8)
CDSS		3.98 (4.7)
Relatives that took part in the study		
Mother	54 (56.3)	
Father	10 (10.4)	
Grandparent	3 (3.1)	
Brother	2 (2.1)	
Sister	5 (5.2)	
Aunt/Uncle	2 (2.1)	
Spouse	7 (7.3)	
Son	6 (6.3)	
Daughter	6 (6.3)	
Other	1 (<1)	

Note: BPRS, Brief Psychiatric Rating Scale; CDSS, Calgary Depression Scale for Schizophrenia.

Table 2. Kendall Correlations (τ) Between Depressive Symptom Severity (CDSS) of Participants With Schizophrenia and the Stigmatizing Views of Their Closest Relatives

CDSS	"Mental Health in Public Conscience"			
	Control and Rejection	Negative Attitude Toward Psychiatry	Aggressive Hostility	Nonbiological Vision of Mental Illness
τ	−0.04	0.10	0.05	0.24
P -value	.58	.17	.46	<.001

Note: τ , Kendall correlation coefficient.

Table 3. Correlations Between Stigma Among Nearest Relatives and Patients' Depressive Symptoms According to Patients' Level of Insight (Awareness of Presence of Mental Disorder)

"Awareness of Presence of Mental Disorder"	Sample Size	Correlation with CDSS (τ)	<i>P</i> -value
Full awareness (SUMD score 1)	37	.41	<.01
Partial awareness (SUMD score 2–3)	32	.14	.31
No awareness (SUMD score 4–5)	27	.14	.37

Note: SUMD, Scale to Assess Unawareness of Mental Disorder.

Table 4. Differences in Correlations Between Stigma Among Nearest Relatives and Depressive Symptoms of Patients in Groups With Different Insight in Permutation Test

First Comparison Group (<i>i</i>)	Second Comparison Group (<i>j</i>)	$\Delta_{i,j} = \tau_i - \tau_j$	<i>P</i> -value
Full awareness (SUMD score 1)	Partial awareness (SUMD score 2–3)	0.27	.051
Full awareness (SUMD score 1)	No awareness (SUMD score 4–5)	0.26	<.05
Partial awareness (SUMD score 2–3)	No awareness (SUMD score 4–5)	–0.003	.50

Table 5. Results of the Regression Analysis

Variable	Regression Coefficient	SE	<i>t</i> -value	<i>P</i> -value
Intercept	–12	4.4	–2.84	.0058
Age	0.06	0.049	1.13	.26
Sex				
Male	(Reference group)			
Female	1.4	0.79	1.71	.091
Duration of illness	–0.12	0.055	–2.14	.036
BPRS	0.14	0.050	2.80	<.01
SUMD				
High	(Reference group)			
Medium	12	5.9	1.97	.052
Low	6	6.1	0.983	.33
MHPC				
Factor 1	0.06	0.063	0.940	.35
Factor 2	–0.03	0.080	–0.364	.72
Factor 3	0.04	0.087	0.456	.65
Factor 4	0.35	0.082	4.25	<.001
Interactions between insight and stigma				
SUMD:Factor 1 of MHPC				
High insight: MHPC (Factor 1)	(Reference group)			
Medium insight: MHPC (Factor 1)	–0.13	0.11	–1.14	.26
Low insight: MHPC (Factor 1)	–0.06	0.11	–0.594	.55
SUMD:Factor 2 of MHPC				
High insight: MHPC (Factor 2)	(Reference group)			
Medium insight: MHPC (Factor 2)	0.07	0.15	0.505	.61
Low insight: MHPC (Factor 2)	0.02	0.11	0.214	.83
SUMD:Factor 3 of MHPC				
High insight: MHPC (Factor 3)	(Reference group)			
Medium insight: MHPC (Factor 3)	0.02	0.17	0.102	.92
Low insight: MHPC (Factor 3)	0.05	0.18	0.269	.79
SUMD:Factor 4 of MHPC				
High insight: MHPC (Factor 4)	(Reference group)			
Medium insight: MHPC (Factor 4)	–0.37	0.14	–2.67	<.01
Low insight: MHPC (Factor 4)	–0.29	0.13	–2.24	.03

Note: MHPC, "Mental health in public conscience" questionnaire: Factor 1 (Control and rejection), Factor 2 (Negative attitude toward psychiatry), Factor 3 (Aggressive hostility), Factor 4 (Nonbiological vision of mental illness); *P*-values less than .05 are marked in bold.

disorder showed a significant effect on the intensity of patients' depressive symptoms. The effect of the fourth factor of MHPC ("Nonbiological vision of mental illness") on the intensity of depressive symptoms (CDSS) in groups with medium and low insight was significantly smaller compared to the group with high insight ($P < .01$ and $P = .03$, respectively).

Discussion

We examined the association between 3 variables: level of insight and depressive symptom severity in patients with schizophrenia, and the stigmatizing beliefs of their nearest relatives. Analyses revealed the intensity of the stigmatizing beliefs of nearest relatives' (in particular "Nonbiological vision of mental illness") was associated with the severity of depressive symptoms among persons with schizophrenia. Moreover, the association was moderated by patients' level of insight. Evidence of this interaction remained after controlling for sex, age, duration of illness, and intensity of psychopathological symptomatology in multiple linear regression analyses.

The data help to further explore the problem of the "insight paradox" ie, its association with depression in schizophrenia. The interrelation between insight, depression and stigma has been investigated in prior research. Lysaker et al's⁴ cross-sectional study was among the first to explicitly assess the role of stigma in the effects of insight on outcomes for schizophrenia. The study's results showed that people with schizophrenia with better insight who internalized self-stigmatizing beliefs had worse self-esteem and hope compared to those with high insight who did not internalize such beliefs. Staring et al¹⁶ confirmed that internalized stigma acts as a moderator in the association between insight and detrimental outcomes in people with schizophrenia. Although Cavelti et al¹⁷ also showed that self-stigma is a moderator of the association between insight and negative outcomes such as high levels of demoralization, they additionally found that self-stigma was a partial mediator of this association. A longitudinal study by Cavelti et al⁴⁶ failed to confirm self-stigma as a moderator and mediator of the association between insight and demoralization, but instead found that insight into personal illness and increases in self-stigma independently contribute to demoralization. In a recent study by Valiente et al²¹ internalized stigma was also shown as playing a moderating role.

In the current study we attempted to expand the model by broadening it from single individuals to larger social structures. We tested the role of insight as a moderator in the association between patients' depressive symptoms and stigma in their environment. The results suggest that the beliefs of nearest relatives should be taken into account while patient's insight is increasing. This is particularly important as most of the care for people with

schizophrenia substantially depends on the involvement of the family.^{47,48} It was shown that 50%–80% of persons with schizophrenia have close contact with their friends and families⁴⁹ and therefore the views of relatives should not be ignored in managing the disorder.

From this perspective the further development and evaluation of interventions to help both people with schizophrenia and their families to develop an appropriate understanding of mental illness are required to allow for recovery. This may be achieved through transforming the personal illness narratives of both patients and those within their close environment into a more adaptive and empowering perspective towards disorder, by teaching them to recognize and cope with both self-stigma and discrimination. The Narrative Enhancement and Cognitive Therapy approach by Yanos and Roe may be a good example of such an intervention.⁵⁰ It was shown that this approach influences both insight and self-stigma.^{51,52} However, we suggest that the intervention might be further evolved to be implemented in the wider context of family, instead of targeting only the individual.

In summary, acquiring good insight into one's own condition is an important step for patients with schizophrenia in their pathway towards recovery,⁵³ but the benefits of gaining better insight might be hampered by the possibility of its negative influence through depressive symptomatology, risk of suicide and worsening quality of life.^{3,11} It has been suggested that any increase in insight needs to be carefully monitored with special attention to hopelessness, demoralization, depression, and other risk factors for suicide (suicidal ideation, young age, substantial reduction in premorbid functioning, etc.).²⁴ Based on the results of the current study we suggest that the views and beliefs within the patients' immediate environment must be added to this list.

Limitations

Many limitations of the current study need to be mentioned. Firstly, the results presented are based on cross-sectional data, thereby limiting the potential for causal inferences. Reverse causality between stigma and depression is possible, in which greater levels of depression lead to higher stigma among patients' relatives. Longitudinal studies are needed to clarify this issue. Secondly, in the study we used depression and stigma questionnaires with a lack of data on their validation in Russian. Third, the sample was selected from an existing case register of patients with schizophrenia that may be skewed to include more chronic and severe cases. This raises the possibility of selection bias and so limits generalizability. Fourth, data on depression and insight were collected by the same researcher which increases the probability of observer bias. In further studies it would be important to separate the collection of data on insight and depression. To sum up, this is a pilot study that needs to be followed by more

extended research testing both the moderating and mediating role of insight. From this perspective Structural Equation Modeling with a multiple-indicator measurement is a promising approach for further investigation.

Conclusions

In group of patients with higher level of insight into the disorder, depressive symptom severity was positively associated with relatives' intensity of stigmatizing beliefs ("Nonbiological vision of mental illness"). The data support the hypothesis that the association between patients' depression and their nearest relatives' stigmatizing views is moderated by patients' illness awareness. This needs to be taken into account when planning and implementing interventions aimed at increasing insight in schizophrenia.

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