Personal resources and depression in schizophrenia: The role of self-esteem, resilience and internalized stigma

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Abstract

Depression in schizophrenia represents a challenge from a diagnostic, psychopathological and therapeutic perspective. The objective of this study is to test the hypothesis that resilience and self-stigma affect depression severity and to evaluate the strength of their relations in 921 patients with schizophrenia. A structural equation model was tested where depression is hypothesized as affected by resilience, internalized stigma, gender and negative symptoms, with the latter two variables used as exogenous covariates and the

former two as mediators. The analysis reveals that low resilience, high negative symptoms, female gender were directly associated with depression severity, and internalized stigma acted only as a mediator between avolition and resilience, with similar magnitude. The cross-sectional study design and the variable selection limit the generalizability of the study results. The model supports a complex interaction between personal resources and negative symptoms in predicting depression in schizophrenia. The clinical implication of these findings is that personal resources could be a significant target of psychosocial treatments.

1. Introduction

Depression is a frequently occurring symptom in schizophrenia, although often under-recognized and under-treated (Mulholland and Cooper, 2000). The estimated prevalence ranges from 7% to 80% (Rabany et al., 2013), with a modal rate of 25%, suggesting a strong variation that goes beyond sample heterogeneity.

Depressive symptoms are associated with greater impairments in well-being and global functioning, as well as enhanced risk of suicide (Schennach-Wolff et al., 2011), making depression in schizophrenia a key area of assessment and intervention. Although this issue has been explored from historical, pathophysiological, diagnostic and therapeutic perspectives (Chiappelli et al., 2014a, Chemerinski et al., 2008, Häfner, 2005, Siris, 2000), several inconsistencies in depression assessment in schizophrenia emerged, especially due to a possible overlap with other psychopathological dimensions, including negative symptoms. Indeed, several studies have analyzed the association between depression and other symptoms in schizophrenic patients, with mixed results (Lako et al., 2012, Rabany et al., 2011, Rocca et al., 2005). The issue of the overlap between negative and depressive symptoms has been debated in the literature, with the prevailing view of a moderate association, while a low association with positive symptoms has been reported (Majadas et al., 2012).

The overlap between negative and depressive symptoms may be in part due to the psychometric properties of the rating scales used rather than to the characteristics of the illness itself (Rocca et al., 2005), although an overlap between the two constructs cannot be ruled out (Chiappelli et al., 2014b, Winograd-Gurvich et al., 2006). The use of new instruments with good psychometric properties to assess negative symptoms (Carpenter et al., 2016; Daniel et al., 2013; Kirkpatrick et al., 2011) may help to clarify the issue.

A different perspective has been advocated by Liddle and Barnes, 1988, Liddle et al., 1993, who suggested that depression could be due to the experience of psychological deficits in schizophrenia. Subjective experience of deficits could represent an indication of vulnerability to depression due to psychological or neural mechanisms. Within this perspective two main aspects as internalized stigma and resilience could have a role in shaping depression.

Internalized stigma, also referred to as self-stigma, is characterized by a subjective perception of devaluation, marginalization, secrecy, shame, and withdrawal (Boyd et al., 2014). People with a severe mental illness, such as schizophrenia, anticipate social rejection and consider themselves as devalued members of society (Corrigan et al., 2005). They may internalize negative stereotypes about mental illness and respond by self-stigma (Mittal et al., 2012). In accordance with the current literature, both stigma and lack of empowerment may lead to depression (Lysaker et al., 2013, Sibitz et al., 2011).

Resilience is a construct encompassing several aspects of personal resources. It is usually defined as a dynamic process of adaptation to challenging life conditions that could be protective against mental disorders (Kim-Cohen, 2007, Rutter, 2006). In patients with schizophrenia, a correlation between resilience and psychosocial functioning has been reported (Kim et al., 2013, Torgalsboen, 2012) so that this issue deserves further investigations.

The aim of the present study is to test the hypothesis that resilience and self-stigma affect depression severity in opposite directions: self-stigma worsening and resilience improving. This hypothesis has been verified using a structural equation model (SEM), which allows to evaluate complex paths linking covariates to an outcome. Using this approach, we designed a model in which resilience and stigma act as mediators and gender and negative symptoms are exogenous covariates.

2. Materials and method

2.1. Participants

Data for this study were collected from the Italian Network for Research on Psychoses study (NIRP). A detailed description of the study can be found elsewhere (Galderisi et al., 2014). In the NIRP study, participants were recruited among patients living in the community and consecutively seen at the outpatient units of 26 Italian university psychiatric clinics and/or mental health departments. Inclusion criteria were a diagnosis of schizophrenia according to DSM-IV, confirmed with the Structured Clinical Interview for DSM-IV - Patient version (SCID-I-P), and an age between 18 and 66 years. Exclusion criteria were: a history of head trauma with loss of consciousness; a history of moderate to severe mental retardation or neurological diseases; a history of alcohol and/or substance abuse in the last six months; current pregnancy or lactation; inability to provide an informed consent; treatment modifications and/or hospitalization due to symptom exacerbation in the last three months. All patients signed a written informed consent to participate after receiving a comprehensive explanation of the study procedures and goals. Approval of the study protocol was obtained from the Local Ethics Committees of each participating center.

2.2. Procedures

Recruitment took place from March 2012 to September 2013. A clinical form was filled in with data on age of disease onset, course of the disease and treatments, using all available sources of information (patient, family, medical records and mental health workers).

2.3. Study variables

2.3.1. Dependent variable

Depressive symptoms were evaluated using the Calgary Depression Scale for Schizophrenia (CDSS), a rating scale designed to assess the level of depression in people with schizophrenia (Addington et al., 1992, Addington et al., 1994). Higher scores represent higher levels of depression. The CDSS includes nine items (depression, hopelessness, self-depreciation, guilty ideas of reference, pathological guilt, morning depression, early wakening, suicide, observed depression), each rated from 0 (absent) to 3 (severe). Ratings > 6 on the total score indicate clinically significant depression (Rybakowski et al., 2012). The Italian translation of the CDSS is available on the official website (http://www.ucalgary.ca/cdss/).

2.3.2. Independent variables

Avolition and expressive deficit were assessed using the Brief Negative Symptom Scale (BNSS) which includes 13 items, rated from 0 (normal) to 6 (most impaired), and five negative symptoms domains:

anhedonia, asociality, avolition, blunted affect and alogia. In line with previous research, domains evaluated by the scale loaded on two factors: “avolition”, consisting of anhedonia, asociality and avolition, and “poor emotional expression”, including blunted affect and alogia (Kirkpatrick et al., 2011, Mucci et al., 2015, Strauss and Gold, 2016).

Resilience was assessed using the Resilience Scale for Adults (RSA) (Friborg et al., 2005). This is a self-administered instrument including 33 items that examine intra- and inter-personal protective factors thought to facilitate adaptation when facing psychosocial adversity. Items are organized into six factors: perception of self, planned future, structured style, social competence, family cohesion, and social resources. In this study we used ‘personal strength’ as a factor containing perception of self and planned future (Friborg et al., 2005). ‘Personal strength’ measures the level of self-esteem, self-efficacy, self-liking, hope, determination and a realistic orientation to life. ‘Social competence’ measures extraversion, social adeptness, cheerful mood, an ability to initiate activities, good communication skills and flexibility in social matters.’Family cohesion’ measures shared values, ability to enjoy family, cohesion, shared optimistic view of future, loyalty, mutual appreciation. ‘Structured style’ measures goal oriented planning ability. ‘Social resources’ measures social support, presence of important persons outside family and feeling of cohesion (Capanna et al., 2015; Friborg et al., 2005).

The experience of stigma and internalized self-rejection was evaluated using the Internalized Stigma of Mental Illness (ISMI) (Ritsher et al., 2003; for Italian version see Brohan et al. (2010)). This includes 29 items and 5 subscales for self-assessment of subjective experience of stigma. Each item is rated on a 4-level Likert scale, where higher scores indicate greater levels of internalized stigma (Ritsher and Phelan, 2004).

2.4. Statistical analysis

A SEM model was used to analyze the relationship of depression with gender, avolition, poor emotional expressivity, stigma and resilience based on an a priori theoretical model. Gender, avolition and poor emotional expressivity were used as exogenous variables, and stigma and resilience as mediators. A latent variable for resilience was used, identified by the five items of structured style, social competence, family cohesion, social resources and personal strength. The CDSS variable was transformed in its square root in order to normalize its distribution. All possible paths connecting these variables were traced, and those non-significant ($p > 0.05$) were removed from the model. Standardized path coefficients were obtained, in order to compare paths pointing to the same dependent variable. Correlations between pairs of items of resilience were added when useful to improve the model fit. The goodness of fit of the final model was assessed using RMSEA, CFI and TLI statistic, with RMSEA < 0.080 (Browne and Cudeck, 1993), CFI > 0.900 and TLI > 0.900 (Hu and Bentler, 1999) denoting good or acceptable fit.

Stata 13.1 was used for descriptive analyses and Mplus 7.4 for the SEM analysis.

3. Results

Out of 1691 screened patients, 1180 were eligible for the NIRP study; of these, 202 refused to participate, 57 failed to complete the assessments and 921 were included. In accordance with the study protocol, clinical and demographic data were not required to patients who refused to participate and were not retained for those who dropped out the procedures.

Table 1 shows that the study population consists mainly of males (69.6%), had a mean age of 40.2 years and received the first treatment of psychosis at 24.0 years. Almost one-third (29.2%) was working at the time of the interview and more than two thirds (68.5%) received atypical antipsychotic treatment.

Table 1. Characteristics of the study population.

Variable	N	Mean (SD) or %
Education (years)	919	11.61 (3.43)
Age	921	40.17 (10.71)
Age at onset	918	24.02 (7.20)
Antipsychotic treatment	921	
Typical		14.2%
Atypical		68.5%
Both		14.1%
None		3.2%
Gender (% males)	921	69.6%
Work (% currently working)	893	29.2%
BNSS avolition	920	20.66(9.64)
BNSS poor emotional expressivity	920	12.84(8.03)
RSA 'structured style'	912	13.08 (3.43)
RSA 'social resources'	912	25.17 (5.94)
RSA 'social competence'	910	18.89 (5.32)
RSA 'family cohesion'	912	20.34 (5.74)
RSA 'personal strength'	911	28.96 (8.95)
ISMI	910	2.20(0.44)
CDSS	920	3.99 (4.02)
CDSS ≥6	920	28.5%

Abbreviations. BNSS: Brief Negative Symptom Scale; RSA: Resilience Scale for Adults; ISMI: Internalized Stigma of Mental Illness; CDSS: Calgary Depression Scale for Schizophrenia.

Twenty-eight percent of the clinical sample reported clinical depression according to CDSS cut-off point of > 6.

Correlations among depression and the variables selected for the SEM model were over 0.20, except for three items related to the latent construct of resilience (Table 2).

Table 2. Correlation matrix of the variables included in the SEM model[a]

	Avolition (BNSS)	Poor emotional expressivity (BNSS)	Resilience structured style (RSA)	Resilience social resources (RSA)	Resilience social competence (RSA)	Resilience family cohesion (RSA)	Resilience personal strength (RSA)	Stigma (ISMI)
Avolition (BNSS)	1.000							
Poor emotional expressivity (BNSS)	**0.730**	1.000						
Resilience - structured style (RSA)	**−0.128**	**−0.108**	1.000					
Resilience - social resources (RSA)	**−0.168**	**−0.090**	**0.280**	1.000				
Resilience - social competence (RSA)	**−0.287**	**−0.205**	**0.358**	**0.414**	1.000			
Resilience - family cohesion (RSA)	**−0.092**	−0.002	**0.280**	**0.632**	**0.262**	1.000		
Resilience - personal strength (RSA)	**−0.224**	**−0.139**	**0.468**	**0.348**	**0.595**	**0.284**	1.000	
Stigma (ISMI)	**0.257**	**0.199**	**−0.289**	**−0.290**	**−0.423**	**−0.221**	**−0.499**	1.000
Depression (CDSS)	**0.302**	**0.201**	**−0.149**	**−0.114**	**−0.243**	**−0.131**	**−0.339**	**0.301**

Correlations in bold are statistically significant at $p < 0.05$.

Abbreviations. BNSS: Brief Negative Symptom Scale; RSA: Resilience Scale for Adults; ISMI: Internalized Stigma of Mental Illness; CDSS: Calgary Depression Scale for Schizophrenia.

[a] with the exception of gender.

In the SEM model shown in Fig. 1 higher avolition, lower resilience, higher stigma and female gender were associated with higher levels of depression. Gender, avolition and resilience were directly related to depression, while stigma connected to depression by the mediation of resilience. Avolition was also indirectly related with depression through stigma and resilience. Poor emotional expressivity was removed from the model because it was unrelated to all the other variables. As shown in Table 3, resilience had the strongest direct effect on CDSS (b = −0.301, p < 0.001), but overall the covariate most associated with depression through direct and indirect pathways was avolition (total b = 0.336, p < 0.001, b = 0.246 indirect effect, b = 0.090 direct effect). The model explained 20.1% of the variance of CDSS and had a good fit to the data (RMSEA = 0.046, CFI = 0.978, TLI = 0.965).

Fig. 1. Diagram of the final SEM. Legend: straight lines indicate direct effects; curved lines indicate correlations; short lines pointing to the dependent variables report explained variance.

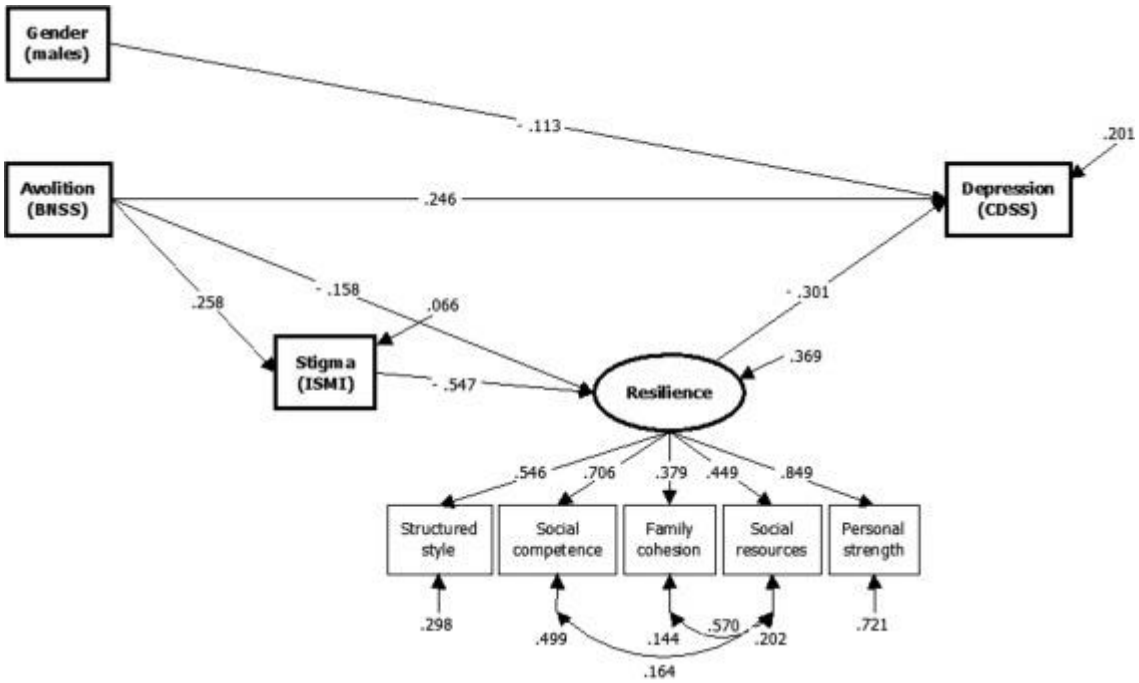

Table 3. Standardized effects to depression (CDSS) resulting from the SEM model.

	Direct effects	Indirect effects	Total effects
Male gender	−0.113 (p<0.001)	–	−0.113 (p<0.001)
Avolition (BNSS)	0.246 (p<0.001)	0.090 (p<0.001)	0.336 (p<0.001)
Stigma (ISMI)	–	0.165 (p<0.001)	0.165 (p<0.001)
Resilience (RSA)	−0.301 (p<0.001)	–	−0.301 (p<0.001)

Abbreviations. BNSS: Brief Negative Symptom Scale; RSA: Resilience Scale for Adults; ISMI: Internalized Stigma of Mental Illness; CDSS: Calgary Depression Scale for Schizophrenia.

4. Discussion

With the present study we sought to explore the association between personal resources and depression in patients with schizophrenia. To the best of our knowledge, this is the first single study addressing this issue using a SEM model on such a large cohort. Moreover, this is the first study that specifically investigates the relationships between depression and negative symptoms in schizophrenia using newly developed negative symptom scales such as the BNSS.

In line with previous findings, 28% of clinical sample reported clinical depression according to CDSS cut-off point of > 6 (Dan et al., 2011, Rybakowski et al., 2012). From a psychopathological perspective, we found that both personal resources and negative symptoms concurred to depression. Interestingly, we found that only BNSS pleasure and motivation items (i.e. BNSS avolition) showed a significant association with depression, while the emotional expressivity factor did not. In so far as anhedonia represents a core symptom of major depression (Fletcher et al., 2015), this is not surprising. On the other hand, the lack of association of depression severity with emotional expressivity further supports the separation of the two BNSS factors (Strauss and Gold, 2016).

Inconsistencies in the correlations between depression and negative symptoms reported in the literature may be due to differences in the instruments used, as well as in the patients selection criteria. For example, Rabany et al. (2011) reported a low negative correlation between the Scale for Assessment of Negative Symptoms (SANS) and CDSS, but their sample was made up of schizophrenia patients with predominantly negative symptoms. In our model avolition has the highest total effect on depression while resilience shows the highest direct effect. Treatments aimed to improve avolition could ha a positive impact on depression directly but also improving resilience.

In our model, low resilience was associated with higher levels of depression. Furthermore, higher resilience coupled with lower avolition indicate protection towards depression, balancing the subjective experiences of psychological deficits reported by Liddle and Barnes, 1988, Liddle et al., 1993. It could be argued that what we called ‘personal resources’ could simply be the other face of the self-perceived psychological deficit. Nevertheless, the issue of ‘positive’ resources opens new opportunities to investigate outcome variability in schizophrenia.

High internalized stigma was associated with higher depression, consistent with other studies reporting that interventions aimed at reducing stigma might contribute to improve depression (Drapalski et al., 2013, Gerlinger et al., 2013, Lysaker et al., 2013, Park et al., 2013). Our study refines this perspective by highlighting the role of resilience as a mediator between stigma and depression.

We found that female gender was associated with higher depression severity. This finding is not consistent with some prior reports: more severe depressive symptoms were previously reported in male patients (Rocca et al., 2005), and a positive correlation between depression severity and positive symptoms was also found in male patients with schizophrenia (Müller, 2007). This discrepancy may be due to differences in the samples. However, the NIRP study, for its size and design, should have helped in reducing selection bias better than prior investigations.

4.1. Clinical implications

Clinical strategies targeting resilience could be studied in depth and eventually tested within the recovery approach (Hofer et al., 2016; Yoshida et al., 2016). Because of the complex interaction between subjective and objective elements of recovery (Jørgensen et al., 2015), strategies aimed at improving resilience could ultimately improve recovery (Borras et al., 2009). 'Personal strength' measures levels of self-efficacy, self-liking, hope, determination and a realistic orientation to life (Capanna et al., 2015, Friborg et al., 2003, 2005; Hjemdal et al., 2006). In our study personal strength was the item more strongly correlated with the latent construct of resilience, suggesting a high relevance of the individual and personal aspect of resilience in buffering depression. Including this item in its definition expands resilience's role as a protective factor toward psychiatric symptoms (Hjemdal et al., 2006). This psychological approach could be further reshaped into the 'subjective recovery perspective', as suggested by Hofer et al. (2016). The role of 'personal resources' suggests that some positive features of adjustment to psychosis may reduce the burden of depression, which, in turn, could have a positive impact on the disorder itself.

The role of positive psychological variables such as resilience and even happiness has not been systematically evaluated among people with schizophrenia or other serious mental illnesses (Palmer et al., 2014), but the "wellness within illness" issue (Saks, 2013) deserves further exploration.

4.2. Strengths and limitations

Among the limitations of the study, our model was based on cross-sectional data, which prevent to infer causal relationships among variables. Moreover, the explained variance of depression was quite low (20.1%), although in line with other studies exploring psychological models of depression in schizophrenia (Xu et al., 2013). We are aware that we limited the exploration of personal and psychological resources to self-stigma and resilience, while other constructs, such as self-esteem and insight, could have a role to predict clinical outcomes and depression (Lysaker et al., 2007, Lysaker et al., 2013, Mashiach-Eizenberg et al., 2013, Xu et al., 2013). However the model we report could be further enriched in the perspective to include other variables in the causal chain leading to depression in schizophrenia.

The 'psychological' nature of depression in schizophrenia seems to offer a wide perspective to psychological oriented approaches. Improving 'personal resources' could contribute to produce a more positive outcome, at least in part of the cases (Vass et al., 2015, Palmer et al., 2014, Yanos et al., 2008).

Declaration of interest

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