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Insight and Symptom Severity in an Inpatient Psychiatric Sample

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Abstract

Individuals with a severe mental illness, particularly a psychotic disorder, often lack insight into having a mental illness. This study sought to examine the differences in insight and symptom severity between individuals with psychotic, bipolar, and depressive disorders in an inpatient psychiatric sample. 199 participants were interviewed and medical records were consulted. Results show that participants with a psychotic disorder had significantly less insight into their illness, more debilitating symptoms, and reported less depression symptoms after controlling for education, race, marital status, homelessness, age, gender, and history of incarceration. Insight was shown to be a mediator between having a psychotic disorder and symptom severity. Subjective quality of life did not differ by diagnosis. Substance use was not associated with insight or overall symptom severity, while homelessness was associated with having a psychotic disorder and more severe symptoms. Fostering insight during an inpatient stay may be an important part of reducing symptom severity and preventing patient relapse. However, greater insight may increase depression and suicidality, indicating a need for mood management and safety planning along with psychoeducation of symptoms.

Keywords Insight · Schizophrenia · Inpatient · Diagnosis · Severity · Psychiatric

Introduction

Lack of insight or the lack of awareness of one's mental health problems affects 30 to 50% of patients with a schizophrenia spectrum disorder [1] and is often debilitating [2, 3]. Lack of insight has been defined as a continuous and multidimensional construct that includes the

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following aspects: (1) awareness of having a mental illness, (2) an understanding of the need for treatment, (3) awareness of the social consequences of mental disorders, (4) awareness of symptoms, and (5) attribution of symptoms to a mental disorder [4]. Research has shown that the relationship between the lack of awareness and the various aspects of a serious and persistent mental disorder is complicated and affected by both aspects of the illness (e.g., symptom severity) and psychosocial factors (e.g., years of education, age, etc.). Lack of insight has been postulated to impair functioning [4–7], quality of life [8], and increases the resistance and lack of compliance to treatment (particularly psychotropic medications; [8–10]. Lack of compliance with treatment is often followed by relapse and re-hospitalization [11, 12].

Lack of insight of the behaviors and symptoms associated with a psychiatric disorder has been found to have a significant effect on clinical presentations. One study showed that the presence of a high level of insight has been associated with impaired functioning, perception of a lower quality of life, hopelessness, and depression [13]. It is possible that having an awareness of having a serious mental illness results in resignation to a lower standard of living and the giving up of one's goals and aspirations, which may cause or exacerbate depression. Depression in schizophrenia is a serious clinical problem as depression increases the risk of suicide. Suicide rates in people living with schizophrenia are eight times higher than in the general population, and 20–40% of people with schizophrenia attempt suicide [14].

The assessment of insight has been a subjective aspect of mental status examinations, based on a clinical interview of undefined depth and intensity. To place more rigor on the assessment of insight, Amador and colleagues developed the Scale to Assess Unawareness of a Mental Disorder (SUMD; [15]). Some evidence shows that patients with bipolar disorder did not differ significantly in the level of insight when compared to patients with schizophrenia [2, 16] and that insight deficits were worse in psychotic and bipolar disorders compared to those with a depressive disorder [17]. The results from the Pini, et al. [16] study showed that the assessed psychosocial functioning of a patient using the Global Assessment of Functioning scale (GAF) had a direct and significant effect on the level of insight. Thus, those with a psychotic and bipolar disorder are likely to have worse insight and overall functioning compared to those with a depressive disorder.

Because of its length (i.e., 17 items), however, the SUMD is seldom utilized in clinical settings and practice [2]. A shorter version of the SUMD (i.e., 9 items) that can be done within the time constraints of clinical settings was developed by the same group of authors. The abbreviated version, the SUMD-A, has been shown to be a valid and reliable instrument to assess insight in patients with schizophrenia [1]. This instrument has been used by others to explore insight and medication adherence [8] and in a large clinical study by the developers [2]. The authors concluded that the SUMD-A can be used in a clinical setting for reliable and valid assessment of insight.

A review of the literature has shown that the research in which the SUMD has been used has excluded participants whose psychotic symptoms were the result of intoxication related to a substance use disorder, have a diagnosed organic disorder, or neurodevelopmental disorder; some studies excluded all individuals not meeting criteria for a type of schizophrenia (i.e., paranoid type; [13]). In addition, the different samples used have been individuals that have been residing in the community for an unspecified duration [13, 18], recently discharged from the hospital [19], in remission [20], at-risk outpatients [21], attending a day treatment program [8], or a mix of outpatients and individuals admitted to a public university teaching hospital [22]. Studies that utilized a sample that reflects a "standard" urban, public psychiatric facility where the individuals were assessed shortly after being

admitted are lacking. Pini, et al. [16] did use consecutively hospitalized patients but the assessments occurred one week prior to discharge when the patients were stable in their symptoms and medications.

Studies have shown that there is a higher prevalence of substance abuse among persons who are homeless and have a mental illness [23–25]. Co-occurring disorders can be difficult to diagnose due to the complexity and severity of symptoms. One report cited that two million people with mental illness are booked into jails each year, and that nearly 15% of male and 30% of female inmates recently admitted to jail have a serious mental illness [26]. The high prevalence of substance use and homelessness in a psychiatric population may interact with lack of insight.

There are several aims to the study. First, we wanted to examine the relationship between diagnosis, symptom severity, and insight on variables relevant for this clinical population, such as substance use and homelessness. We hypothesized that insight and symptom severity would have significant associations with many of these clinical variables, and that substance use and homelessness would be associated with worse symptom severity and insight. Second, we aimed to look at the unique impact of diagnosis on clinical variables, including insight, symptom severity, depression, and quality of life. We hypothesized that individuals with a psychotic disorder would show greater problems on all measures compared to those with a depressive or bipolar disorder after controlling for demographic variables. Finally, we hypothesized that insight would act as a mediator between having a psychotic disorder and symptom severity.

Method

Participants and Setting

The data collection took place at a state psychiatric facility located in a major metropolitan city in the southwest area of the country. The city in which the hospital is located is culturally diverse and one of the most diverse cities in the nation. The hospital has approximately 120 beds. The average length of stay is less than 21 days. Patients were all transferred to the hospital from an emergency room. All consecutive admissions on one 40 bed unit consisting of two interdisciplinary teams were assessed. All participants were 18 years of age or older.

Patients were assessed within the first three to five days after being admitted. Exclusionary criteria were limited to exclude persons with severe decompensated neurodevelopmental disorders (i.e., autism spectrum disorder with intellectual impairment) and moderate to severe intellectual impairments. Patients were excluded if the person refused to participate or complete the assessment. All participants provided written informed consent upon admission. All clinical assessments were performed in routine practice during treatment team meetings and results were reported back to the members of the team as part of the routine treatment team review that was done for each working day (Monday through Friday).

Upon admission into the unit, each participant's chart was reviewed for admitting diagnoses and demographics were collected if available. Demographic information that was uncertain or unavailable during the chart review was obtained during the initial interview after admission or through collateral information from family members. One of the two authors attended the

initial treatment review and interview by the interdisciplinary team of each new admission. The interdisciplinary team consisted of a board-certified psychiatrist, a licensed psychologist, two licensed social workers and at least one registered nurse.

Measures

Participants were asked about socio-demographic information including ethnicity, living arrangement, education, existing legal problems, and history and type of incarceration. Information was gathered by interviewing the participant and available medical records. Participants were asked clarifying questions regarding clinical characteristics if needed, including substance use history and awareness of substance use when admitted into the hospital. DSM 5 diagnoses were obtained from the admitting paperwork.

Clinical Global Impressions Scale (CGI) The Clinical Global Impressions Scale (CGI; [27]), is a clinician-rated measurement of overall dysfunction due to illness. The measurement uses a seven-point scale (1 = normal, 7 = extremely dysfunctional). It has been shown to have good convergent validity with other assessments of functioning. Participants were assessed in terms of functioning of several domains: cognitive status, perceptual experiences, mood, and social functioning.

Calgary Depression Scale for Schizophrenia (CDSS) The Calgary Depression Scale for Schizophrenia (CDSS; [28]) is a nine-item scale specifically designed for patients with schizophrenia that evaluates depression independently of extra-pyramidal and negative symptoms. It has shown good predictive validity in evaluating depression in individuals with schizophrenia compared to other instruments focused on depressive disorders.

World Health Organization Quality of Life (WHOQoL-BREF) The World Health Organization Quality of Life (WHOQoL-BREF; [29]) is a widely used, 26 item self-report measure that assesses aspects of daily life in four domains: physical health (activities of daily living, dependence on medical treatment, energy and fatigue, mobility, pain, sleep and work capacity); psychological health (body image and appearance, negative and positive feelings, self-esteem, spirituality, and concentration); social relationships (personal relationships, social support, sexual activity); and environment (finances, physical safety, access to health services, home environment, opportunities to acquire new information, leisure activities, physical environment, and transport). In addition to the domain scores, an overall score also is calculated that includes questions regarding self-perceptions of overall well-being and health. The WHOQoL-BREF has been used in assessing perceived quality of life in patients at risk in developing a serious mental illness [21].

Subjective Unawareness of a Mental Disorder- Abbreviated (SUMD-A) The Subjective Unawareness of a Mental Disorder- Abbreviated (SUMD-A) is a standardized nine item scale based on a patient interview. The SUMD-A assesses current awareness of the following states: a) having a mental disorder, b) consequences of a mental disorder, c) the effects of psychotropic drugs, d) hallucinatory experiences, e) delusional ideas, f) disorganized thinking, g) blunted affect, h) anhedonia, and i) lack of sociability. Higher scores represent less insight. SUMD-A data was obtained during the initial interview or during another interview within 5 days after admission to the unit.

Results

Sample demographics are presented in Table 1. Mean age was 37.05 years. Most participants were male (56.8%) and nearly half were Caucasian (49.2%); over half of the participants were never married (66.8%) and nearly one third (31.6%) had some education after graduating from high school. Forty-five percent were homeless, compared to a report that 33 % of homeless individuals had a serious mental illness [30]. In addition, nearly two thirds either had past or present substance abuse (65.8%) and more than half (56.6%) had a positive drug screen for some type of illegal substance (including cannabis) when admitted. More than half (54.8%) had a history of being incarcerated; of those reported having been incarcerated, 71% reported having only been in jail, and not prison.

Table 1 Sample demographics (N = 199)

Age (years)	M = 37.05
	SD = 12.16
Sex:	
Women	86 (43.2%)
Men	113 (56.8%)
Diagnosis:	
Psychotic Disorder	130 (65.3%)
Depressive Disorder	38 (19.0%)
Bipolar/Mood Disorder	31 (15.5%)
Ethnicity:	
Caucasian	98 (49.2%)
African American	52 (26.1%)
Asian	12 (6.0%)
Hispanic/Latino	31 (15.6%)
Other	6 (3.0%)
Marital Status:	
Never Married	133 (66.8%)
Divorced/Separated	51 (25.6%)
Married	15 (7.5%)
Education Level:	
Less than 9th grade	14 (7.0%)
Less than 12th grade	58 (29.1%)
High School Graduate	63 (31.6%)
More than high school	63 (31.6%)
Living Situation:	
Homeless	90 (45.2%)
With family	53 (26.6%)
With roommates/friends	26 (13.1%)
Supervised living facility	13 (6.5%)
Substance Abuse History:	
Present	131 (65.8%)
Absent	68 (34.2%)
Urine Drug Screen results (N = 150):	
Positive	82 (56.6%)
Negative	68 (43.4%)
Incarceration History:	
Incarcerated	109 (54.8%)
Never Incarcerated	90 (45.2%)
Incarceration Type (N = 104):	
Jail Only	74 (71.1%)
Prison or Jail	30 (28.9%)

Diagnoses were coded into three general categories listed in the DSM 5. The groupings that were included were Schizophrenia Spectrum and Other Psychotic Disorders, Depressive Disorders, and Bipolar and Related Disorders.

Correlations between the sociodemographic data and clinical variables are presented in Table 2. Table 3 presents the correlations between the clinical characteristics, and Table 4 presents the correlations between demographic variables and clinical variables.

Correlation analyses show relationships between the psychosis category and non-Caucasian race ($r = .29$, $p < .01$), less education ($r = .15$, $p < .01$), and younger age ($r = -.14$, $p < .05$). Having a diagnosis within the psychotic category was positively correlated with all domains of subjective well-being and life satisfaction (rs ranging from .20 to .38, $ps < .05$), and less awareness of having taken an illegal substance on either the current or a prior admission ($r = .21$, $p < .05$). Having a psychotic disorder was associated with higher total scores on the SUMD-A (i.e., less insight; $r = .47$, $p < .01$) and the CGI (i.e., more severe impact on functioning; $r = .40$, $p < .01$) and negatively associated with the CDSS (i.e., less depression; $r = -.28$, $p < .01$).

Having a diagnosis of Bipolar disorder was associated with less subjective satisfaction in three domains on the WHOQoL: physical health ($r = -.24$, $p < .01$), psychological health ($r = -.21$, $p < .05$), and social relationships ($r = -.18$, $p < .01$). A bipolar diagnosis was also associated with more insight ($r = -.52$, $p < .01$) and less severe symptoms ($r = -.14$, $p < .05$). A depressive diagnosis was associated with worse psychological health ($r = -.26$, $p < .01$), greater insight ($r = -.34$, $p < .01$), and less severe symptom severity ($r = -.30$, $p < .05$).

Having a depressive disorder was associated with lower quality of psychological health ($r = -.26$, $p < .01$), greater awareness of symptoms ($r = -.34$, $p < .05$), and less symptom severity ($r = -.30$, $p < .01$). Current depressive symptoms were associated with older age ($r = .19$, $p < .01$), greater insight ($r = -.21$, $p < .01$), and with lower quality of life in all four domains, as well as the total score (rs ranging from $-.24$ to $-.54$, $ps < .01$).

Being homeless was associated with being older ($r = -.16$, $p < .05$) and with non-Caucasian race ($r = .15$, $p < .05$). Having a positive urine drug screen for illegal substances upon being admitted was negatively associated with poorer medication compliance ($r = -.18$, $p < .05$). Being unaware of current or past substance use was associated with less awareness of one's mental health problems ($r = .36$, $p < .05$), greater symptoms severity ($r = .23$, $p < .01$), and decreased depressive symptoms ($r = -.18$, $p < .05$). Having a history of any type of

Table 2 Correlation matrix for examined variables

	1	2	3	4	5	6	7	8	9
1. Age	–								
2. Gender	.05	–							
3. Education	.03	−.18*	–						
4. Race	−.20**	−.04	−.16*	–					
5. Psychosis	−.14*	−.03	−.15*	.29**	–				
6. CDSS	.17*	−.14	.02	−.14	−.28**	–			
7. CGI	−.03	.01	−.09	.22*	.36**	−.12	–		
8. SUMD-A	−.17*	.00	.07	.29**	.47**	.21**	.60**	–	
9. WHOQoL	−.08	.15	−.04	.13	−.15	.01	−.06	−.03	–

* $p < .05$, ** $p < .01$. *WHOQoL* World Health Organization Quality of Life – Brief Total Score, *SUMD-A* Subjective Unawareness of a Mental Disorder, Abbreviated, *CDSS* Calgary Depressions Scale for Schizophrenia, *CGI* Clinical Global Impressions Scale

Table 3 Correlation matrix for clinical measurements

	1	2	3	4	5	6	7	8	9
1. QoL1	–								
2. QoL2	.69**	–							
3. QoL3	.58**	.67**	–						
4. QoL4	.71**	.75**	.71**	–					
5. WHOQoL	.84**	.88**	.82**	.94**	–				
6. SUMD-A	.16	.25**	.06	.07	−.03	–			
7. CDSS	−.37**	−.54**	−.36**	−.42**	−.24**	−.21**	–		
8. MedComp	.10	.20*	.14	.14	.06	.09	−.15*	–	
9. CGI	.07	.14	.02	.07	−.06	.59**	−12	.08	–

* $p < .05$, ** $p < .01$. *WHOQoL* World Health Organization Quality of Life – Brief Total Score, *QoL Domain 1* physical health, *QoL Domain 2* psychological health, *QoL Domain 3* social relationships, *QoL Domain 4* environment, *SUMD-A* Subjective Unawareness of a Mental Disorder, Abbreviated, *CDSS* Calgary Depressions Scale for Schizophrenia, *MedComp* Medication Compliance, *CGI* Clinical Global Impressions Scale

incarceration was only positively correlated with symptoms severity ($r = .17$, $p < .05$). Individuals who reported not being homeless (i.e., living with family, in a managed care facility, or independently by oneself) were more likely to report greater psychological ($r = .24$, $p < .05$) and environmental health ($r = .21$, $p < .05$), and overall quality of life ($r = .22$, $p < .05$).

Correlations between the clinical measures show positive correlations among the scores of all the domains of the WHOQoL (rs from .58 to .71, $ps < .01$). Domain 2 of the WHOQoL (Psychological Health) was correlated with less insight on the SUMD-A ($r = .20$, $p < .01$). Less insight was strongly correlated with overall symptom severity ($r = .59$, $p < .01$) and negatively correlated with depression symptoms ($r = −.21$, $p < .01$). Medication compliance was also associated with fewer depression symptoms ($r = −.15$, $p < .01$).

To test for the effect of diagnosis, a MANCOVA was conducted. The three diagnostic groups (i.e., psychotic disorders, bipolar disorders, and depressive disorders) were specified as independent variables in the model. Symptom severity, awareness of symptoms, depression, and quality of life were specified as dependent variables. Education level, race, marital status, living situation, age, gender, and history of incarceration were specified as covariates. Results

Table 4 Correlation matrix for clinical measurements with demographics

	QoL1	QoL2	QoL3	Qol4	QoLT	SUM-D	CDSS	MedComp	CGI
Age	−.15	−.24**	−.20	−.16	−.08	.17*	.17*	.02	−.03
Gender	.13	.08	.18*	.11	.15	.01	−.14	−.01	.01
Education	.13	.08	.18*	.11	.15	.01	−.02	.13	−.09
Race	.16	.25**	.20*	.15	.13	.29*	−.14	.07	.22**
Psychosis	.31**	.38**	.24**	.20*	.013	.47**	−.28**	.07	.40**
Bipolar	−.24**	−.21*	−.18*	−.15	.03	−.52**	.05	−.06	−.14*
Depression	−.15	−.26**	−.13	−.10	−.04	−.34**	.29**	−.03	−.30**
SA	−.15	−.14	−.04	−.08	−.16	−.06	.12	−.18*	−.08
SA Aware	.06	.06	.16	.12	−.14	.36**	−.18*	−.10	.23**
Incarceration	.02	−.04	−.03	−.02	−.15	.01	−.06	.01	.17*
Homelessness	.15	.24**	.07	.21*	.22**	.01	−.13	.13	−.03

* $p < .05$, ** $p < .01$. *SA* presence of substance abuse, *SA Aware* awareness of substance abuse, *QoL Domain 1* physical health, *QoL Domain 2* psychological health, *QoL Domain 3* social relationships, *QoL Domain 4* environment, *QoLT* World Health Organization Quality of Life – Brief Total Score, *MedComp* Medication Compliance

revealed a significant effect of diagnosis on symptom severity ($F(2, 145) = 5.05$, $p < .01$), awareness of symptoms ($F(2, 145) = 16.43$, $p < .001$), and depression ($F(2, 145) = 6.26$, $p < .01$). Diagnosis did not have an effect on quality of life ($F(2, 145) = .89$, $p = .41$).

Separate ANOVAs with planned contrasts were conducted to follow up the results of the MANCOVA. Diagnosis was identified as the independent variable in all analyses. Contrasts were conducted using a Bonferroni correction. For symptom severity, contrasts revealed a significant difference between psychotic disorders (M = 5.08) and both bipolar disorders (M = 4.72, $p < .01$) and depressive disorders (M = 4.34, $p < .001$). Results showed that individuals with psychotic symptoms showed more symptom severity compared to individuals with depressive and mood disorders.

Contrasts of the awareness analysis revealed a significant difference between psychotic disorders (M = 13.18) and both bipolar disorders (M = 7.46, $p < .001$) and depressive disorders (M = 7.07, $p < .001$). Results showed that patients with psychotic disorders were rated as being less aware of their symptoms and their effects than patients with either bipolar disorders or depressive disorders. Contrasts of the depressive symptoms analysis revealed a significant difference between depressive disorders (M = 9.57) and psychotic disorders (M = 4.71, $p < .001$). Results showed that individuals with depressive and mood disorders were more likely to report symptoms associated with depression than by patients with psychotic disorders.

Awareness of psychiatric symptoms was tested as a mediator between having a psychotic disorder and symptom severity. Separate correlations between the three variables were found to be significant (see Table 2), satisfying the first three conditions of a mediator as defined by Baron and Kenny [31]. Hierarchical multiple regression analysis was used to test the strength of the relationship between having a psychotic disorder and symptom severity when in the presence of awareness. In the first step, having a psychotic disorder was associated with greater symptom severity (beta = .47, $p < .001$). In the second step, awareness was added a predictor to the model. When awareness was entered into the model, having a psychotic disorder was no longer a significant predictor (beta = .08, $p = .18$). Awareness was significantly associated with symptom severity in the model (beta = .55, $p < .001$), indicating full mediation.

Discussion

This study sought to explore the link between diagnosis, insight into one's own mental health symptoms, and symptom severity in an urban inpatient psychiatric setting.

Patients who had less awareness of their own psychiatric symptoms were more likely to have worse overall symptom severity, regardless of diagnosis. Symptom unawareness was also related to being less aware of having taken illegal substances either in a previous or current admission. However, having a history of substance abuse was not associated with symptom severity, indicating that substance use is not a driving force behind unawareness and severe mental illness.

While having little insight was associated with less awareness of having taken substances (either in a past or present admission), it was not associated with substance use itself. Additionally, substance use was only associated with a history of incarceration, having less education, and being white. The lack of connection between substance use and both insight and symptom severity suggests that substance use is related more to demographic factors in this population rather than psychopathology. The lack of connection between substance use

and both insight and symptom severity indicate that substance use is not a driving force behind why severely mentally ill patients struggle with insight and debilitating symptoms.

When insight and symptom severity were examined by diagnosis, patients with any psychotic disorder exhibited greater unawareness of their illness and greater symptom severity compared to patients with non-psychotic disorders after controlling for age, gender, race, substance use history, education, and homelessness. This is in line with previous research that found individuals with schizophrenia had worse insight into their symptoms than those with bipolar disorder [32]. This finding speaks to the unique and debilitating impact of psychotic symptoms. Complex psychosocial variables can greatly hinder recovery and stability for a variety of reasons, but successful treatment of psychotic symptoms and fostering insight may be a crucial first step in addressing issues of substance use and homelessness in this population.

Awareness was found to fully mediate the relationship between having a psychotic disorder and symptom severity. Individuals with psychotic disorders may be more prone to having their symptoms debilitate their functioning as they may attribute their lack of functioning to other sources (e.g., delusions, hallucinatory content). Emphasis on psychoeducation may be especially important for those who have a psychotic disorder.

Quality of life was negatively associated with depressive symptoms. After controlling for psychosocial variables, quality of life was not associated with insight, general symptom severity, or diagnosis. It is possible that individuals with psychotic disorders are so out of touch with reality (as indicated by their high unawareness of symptoms and general symptom severity) that they may not perceive their quality of life as being diminished. Additionally, our population was comprised of individuals often receiving treatment against their will. A population of patients with psychotic disorders that have shown treatment adherence and stability may show differences in perspective of quality of life. With regard to patients with bipolar disorder, it is likely that individuals in an active manic phase may also overinflate their quality of life compared to those in a depressive state.

Quality of life was negatively associated with depressive symptoms, but those with a depressive disorder did not overall endorse a worse quality of life after controlling for demographic variables. The lack of connection between quality of life and having a depressive disorder implies that other factors (e.g., homelessness, substance use) may better explain the link between quality of life and depression in an inpatient population. The basic needs of this sample were complex, and stress from a variety of areas may be reducing quality of life significantly more than current depression.

Depression is often seen in schizophrenia. However, individuals with a psychotic disorder in our sample were less likely to report depressive symptoms than those with other diagnoses. It is possible that individuals with a psychotic disorder have fewer depressive symptoms when they are in an episode of care that requires inpatient hospitalization. This is congruent with research that found that greater insight increases depression, self-stigma, hopelessness [33] and suicidality [34] in those with a schizophrenia diagnosis. Those with a psychotic disorder who are in an inpatient episode of care should be given skills to manage depression and safety planning that are necessary after insight increases.

These results have several important implications. Patient education may be an important part of recovery, as increasing insight into mental health symptoms may reduce overall symptom severity, regardless of diagnosis and specific symptoms. Patients who are unaware of their diagnosis and symptoms will likely go longer without treatment and disagree about needing treatment in the first place. Some patients may not have insight into when symptoms

get worse, and may not get treatment until well into an episode (e.g., not recognizing early signs of mania or depression). Education of signs and symptoms of how severe episodes start may decrease overall symptom severity and reduce the number of hospitalizations. However, it is important to note that greater insight may result in greater depression and thoughts of suicide in those with a psychotic disorder, and so coping skills for depression are crucial during an inpatient episode of care for this population.

This study also suggests a diminished role of substances and insight. Despite their mind-altering effects and interactions with psychopathology, this sample did not show a significant association between substances and either insight or symptom severity. However, there were significant correlations with being white, homeless, and having been incarcerated. While substance abuse should remain an important target of treatment, substance use seems to be tied in with systemic and demographic problems that are often beyond the scope of treatment for an inpatient psychiatric hospital. This suggests that referrals to quality resources, especially around homelessness and being an ex-offender, are crucial for discharge planning.

There were several limitations to this study. This study used cross-sectional data, and so we cannot say how insight changed over time. Participants were interviewed quickly after admission due to the high census turnaround, so participants may have given different responses if they were interviewed closer to discharge when they have regained some stability and had a satisfactory discharge plan.

Compliance with Ethical Standards

References

1. Michel P, Baumstarck K, Auquier P, Amador X, Dumas R, Fernandez J, et al. Psychometric properties of the abbreviated version of the scale to assess unawareness in mental disorder in schizophrenia. BMC Psychiatry. 2013;13:229. https://doi.org/10.1186/1471-244X-13-229.
2. Amador XF, Flaum M, Andreasen NC, Strauss DH, Yale SA, Clark SC, et al. Awareness of illness in schizophrenia and schizoaffective and mood disorders. Arch Gen Psychiatry. 1994;51:826–36. https://doi.org/10.1001/archpsyc.1994.03950100074007.
3. Medalia A, Thysen J. A comparison of insight into clinical symptoms versus insight into neuro-cognitive symptoms in schizophrenia. Schizophr Res. 2010;118:134–9. https://doi.org/10.1016/j.schres.2009.09.027.
4. David AS. Insight and psychosis. Br J Psychiatry. 1990;156:798–808. https://doi.org/10.1192/BJP.156.6.798.
5. Amador XF, David AS. Insight and psychosis: awareness of illness in schizophrenia and related disorders. 2nd ed. New York: Oxford University Press; 2004.

6. Schwartz RC. The relationship between insight, illness and treatment outcome in schizophrenia. Psychiatry Q. 1998;69:1–22. https://doi.org/10.1023/A:1022141322657.

7. Schwartz RC, Cohen BN, Grubaugh A. Does insight affect long-term inpatient treatment outcome in chronic schizophrenia? Compr Psychiatry. 1997;38:283–8. https://doi.org/10.1016/S0010-440X(97)90061-4.

8. Boyer L, Aghababian V, Richieri R, Loundou A, Padovani R, Simeoni MC, et al. Insight into illness, neurocognition and quality of life in schizophrenia. Prog Neuro-Psychopharmacol Biol Psychiatry. 2012;36: 271–6. https://doi.org/10.1016/j.pnpbp.2011.10.008.

9. Buckley PF, Wirshing DA, Bhushan P, Pierre JM, Resnick SA, Wirshing WC. Lack of insight in schizophrenia: impact on treatment adherence. CNS Drugs. 2007;21:129–41. https://doi.org/10.2165/00023210-200721020-00004.

10. Dassa D, Boyer L, Benoit M, Bourcet S, Raymondet P, Bottai T. Factors associated with medication non-adherence in patients suffering from schizophrenia: a cross-sectional study in a universal coverage health-care system. Aust N Z J Psychiatry. 2010;44:921–8. https://doi.org/10.3109/00048674.2010.493503.

11. Boyer L, Millier A, Perthame E, Aballea S, Auquier P, Toumi M. Quality of life is predictive of relapse in schizophrenia. BMC Psychiatry. 2013;13. https://doi.org/10.1186/1471-244X-13-15.

12. Drake RJ, Dunn G, Tarrier N, Bentall RP, Haddock G, Lewis SW. Insight as a predictor of the outcome of first-episode nonaffective psychosis in a prospective cohort study in England. J Clin Psychiatry. 2007;68: 81–6. https://doi.org/10.4088/JCP.v68n0111.

13. Krupchanka D, Katliar M. The role of insight in moderating the association between depressive symptoms in people with schizophrenia and stigma among their nearest relatives: a pilot study. Schizophr Bull. 2016;42:600–7. https://doi.org/10.1093/schbul/sbw024.

14. Pompili M, Amador XF, Girardi P, Harkavy-Friedman J, Harrow M, Kaplan K, et al. Suicide risk in schizophrenia: learning from the past to change the future. Ann General Psychiatry. 2007;6. https://doi.org/10.1186/1744-859X-6-10.

15. Amador XF, Strauss DH, Yale SA, Flaum MM, Endicott J, Gorman JM. Assessment of insight in psychosis. Am J Psychiatry. 1993;150:873–9. https://doi.org/10.1176/ajp.150.6.873.

16. Pini S, Cassano GB, Dell'Osso L, Amador XF. Insight into illness in schizophrenia, schizoaffective disorder, and mood disorders with psychotic features. Am J Psychiatry. 2001;158:122–5. https://doi.org/10.1176/appi.ajp.158.1.122.

17. Weiler MA, Fleisher MH, McArthur-Campbell D. Insight and symptom change in schizophrenia and other disorders. Schizophr Res. 2000;45:29–36. https://doi.org/10.1016/S0920-9964(99)00215-7.

18. Makara-Studzinska M, Wolyniak M, Partyka I. The quality of life in patients with schizophrenia in community mental health service – selected factors. J Pre-Clin Clin Res. 2011;5:31–4.

19. Kako Y, Ito K, Hashimoto N, Toyoshima K, Shimizu Y, Mitsui N, et al. The relationship between insight and subjective experience in schizophrenia. Neuropsychiatr Dis Treat. 2014;10:1415–22. https://doi.org/10.2147/NDT.S66121.

20. Margariti M, Ploumpidis D, Economou M, Christodoulou GN, Papadimitriou GN. Quality of life in schizophrenia spectrum disorders: associations with insight and psychopathology. Psychiatry Res. 2015;225:695–701. https://doi.org/10.1016/j.psychres.2014.11.016.

21. Domínguez-Martínez T, Kwapil TR, Barrantes-Vidal N. Subjective quality of life in at-risk mental state for psychosis patients: relationship with symptom severity and functional impairment. Early Interv Psychiatry. 2015;9:292–9. https://doi.org/10.1111/eip.12111.

22. Aghababian V, Auquier P, Baumstarck-Barrau K, Lançon C. Influence des troubles de la conscience sur l'auto-évaluation de la qualité de vie des patients souffrant de schizophrénie. = Relationship between insight and self-reported quality of life among schizophrenic patients. L'Encéphale Rev Psychiatr Clin Biol thérapeutique. 2011;37:162–71. https://doi.org/10.1016/j.encep.2010.08.011.

23. Fazel S, Khosla V, Doll H, Geddes J. The prevalence of mental disorders among the homeless in Western countries: systematic review and meta-regression analysis. PLoS Med. 2008;5:e225.

24. Folsom DP, Hawthorne W, Lindamer L, Gilmer T, Bailey A, Golshan S, et al. Prevalence and risk factors for homelessness and utilization of mental health services among 10,340 patients with serious mental illness in a large public mental health system. Am J Psychiatry. 2005;162:370–6. https://doi.org/10.1176/appi.ajp.162.2.370.

25. Palepu A, Patterson M, Strehlau V, Moniruzzamen A, de Bibiana JT, Frankish J, et al. Daily substance use and mental health symptoms among a cohort of homeless adults in Vancouver, British Columbia. J Urban Health. 2013;90:740–6. https://doi.org/10.1007/s11524-012-9775-6.

26. National Alliance on Mental Illness Jailing People with Mental Illness | NAMI: National Alliance on Mental Illness. https://www.nami.org/Learn-More/Public-Policy/Jailing-People-with-Mental-Illness. Accessed 26 Nov 2017.

27. Busner J, Targum SD. The clinical global impressions scale: applying a research tool in clinical practice. Psychiatry. 2007;4:28–35.
28. Addington D, Addington J, Atkinson M. A psychometric comparison of the Calgary depression scale for schizophrenia and the Hamilton depression rating scale. Schizophr Res. 1996;19:205–12. https://doi.org/10.1016/0920-9964(95)00070-4.
29. Group W. Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychol Med. 1998;28:551–8.
30. Treatment Advocacy Center. How Many People with Serious Mental Illness Are Homeless? - Treatment Advocacy Center. 2014. http://www.treatmentadvocacycenter.org/fixing-the-system/features-and-news/2596-how-many-people-with-serious-mental-illness-are-homeless. Accessed 18 Dec 2017.
31. Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. J Pers Soc Psychol. 1986;51:1173–82.
32. Varga M, Magnusson A, Flekkøy K, David AS, Opjordsmoen S. Clinical and neuropsychological correlates of insight in schizophrenia and bipolar I disorder: does diagnosis matter? Compr Psychiatry. 2007;48:583–91. https://doi.org/10.1016/j.comppsych.2007.06.003.
33. Schrank B, Amering M, Hay AG, Weber M, Sibitz I. Insight, positive and negative symptoms, hope, depression and self-stigma: a comprehensive model of mutual influences in schizophrenia spectrum disorders. Epidemiol Psychiatr Sci. 2014;23:271–9. https://doi.org/10.1017/S2045796013000322.
34. Melle I, Barrett EA. Insight and suicidal behavior in first-episode schizophrenia. Expert Rev Neurother. 2012;12:353–9. https://doi.org/10.1586/ern.11.191.

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