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Insight among People with Severe Mental Illness, Co-Occurring PTSD and Elevated Psychotic Symptoms: Correlates and Relationship to Treatment Participation

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Abstract

Background—There is a dearth of research on what factors are predictive of insight among people with severe mental illness and co-occurring PTSD.

Method—Data were drawn from 146 participants with severe mental illness, co-occurring PTSD and elevated psychotic symptoms participating in a randomized controlled trial comparing two interventions for PTSD among people with severe mental illness. We examined the clinical and demographic correlates of insight at baseline, the relationship between baseline insight and treatment participation, the relationship between treatment participation and post-treatment insight, and the relationship between change in insight and change in other clinical variables.

Results—Impaired insight was relatively common, with roughly half the sample demonstrating mild or moderate impairment at baseline. Baseline insight was associated with fewer psychotic and disorganized symptoms, and greater emotional discomfort and PTSD knowledge, but was not associated with negative symptoms, PTSD symptoms, depression/anxiety, or treatment participation. Participation in PTSD treatment was associated with increased insight at post-treatment. Improved insight was associated with improvements in disorganization and negative symptoms, but not with knowledge of PTSD or positive symptoms.

Discussion—The findings suggest that engagement in treatment that includes educating people about PTSD may lead to improvements in insight and related improvements in other psychiatric symptoms.

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1. Introduction

Compelling evidence supports that individuals with severe mental illnesses such as schizophrenia, bipolar disorder, and major depression are more likely to experience trauma over their lifetime than people in the general population¹. Furthermore, surveys indicate elevated rates of PTSD in people with severe mental illness (SMI), with most studies reporting current rates between 25–48%, which are considerably higher than the estimated point prevalence of 3.5% in the general population^{2,3}. Co-occurring PTSD has been found to be associated with a range of negative outcomes among people with SMI, including more severe symptoms, reduced social functioning, decreased engagement in treatment, and increased substance use¹.

Insight, or awareness of one's disorder, has traditionally been of great interest to researchers who study psychotic disorders. However, there is controversy about the specific role that insight plays in impacting outcomes, since research has demonstrated that higher levels of insight are predictive of better outcomes over time,⁴ but other studies have also shown that insight is often associated with greater depression and poorer quality of life.⁵ An integration of these views was proposed by Lysaker, Yanos and Roe⁶, who proposed that insight can play an important role in recovery, but only as an "element of a larger personal understanding of one's life" (p. 116). From this perspective, the impact that insight has depends on the meanings that are attached to it. Insight can play a positive role in recovery if it allows one to make sense of one's experiences in a way that facilitates a sense of agency.

Despite the focus on insight among people with psychotic disorder, the topic of insight been largely neglected in the research literature on PTSD, either in the general population, or among people with SMI. In a review of the literature on insight and "awareness of illness" among persons with PTSD, we identified only a handful of articles that discussed the concept. One study retrospectively examined awareness of PTSD⁷ over time among Vietnam veterans, and found that roughly 60% of veterans diagnosed with PTSD endorsed delayed awareness of their PTSD symptoms. Participants reported that lack of awareness of PTSD led to negative life events, suggesting that awareness of PTSD symptoms is an important target for PTSD treatment. Shaw et al.⁸ examined the relationship between insight and clinical variables among people with psychotic disorders and probable PTSD, and found that insight was not related to PTSD symptom severity, but was negatively related to psychotic symptom severity and positively related to depersonalization/derealization symptoms. Mirroring findings among others with psychotic disorders⁵, these findings suggest that the association between insight and clinical variables among people with PTSD and psychotic symptoms is likely to be complex.

An issue that has not been previously addressed, to our knowledge, is whether insight is impacted by treatment of co-occurring PTSD among people with SMI. The importance of considering the role of trauma and its sequelae on developing a more nuanced understanding of the origin of psychiatric problems has been discussed by Longden and colleagues⁹, who have argued for a greater emphasis on treatment methods which focus on the role of trauma in causing psychiatric problems. A corollary of this view is that learning about the role of trauma in causing distressing symptoms can potentially facilitate insight because it can help

individuals develop a coherent explanatory account of the origin of their symptoms. Based on our experience working with individuals who have experienced trauma, and consistent with the perspective argued for by Lysaker et al., we speculated that treatment that allows one to develop a better understanding of the role of trauma in the development of one's psychiatric problems could increase motivation to address them (e.g., "I experience these symptoms in part because of traumatic experiences I went through as a younger person, and not just because of a genetic defect").

Although insight has not been directly assessed in studies of PTSD treatment, a related construct that has been studied in the context of treatment is "knowledge about PTSD," or the ability to identify the symptoms of PTSD. Psychoeducational interventions^{10,11} have demonstrated that education about PTSD can increase PTSD knowledge, but it is not clear whether this also generalizes to increases in insight or awareness, since one can have "knowledge" about PTSD without relating the symptoms of the disorder to one's own experiences (e.g., one may be able to learn about symptom clusters but not recognize that one experiences them). It is also unclear to what extent treatment for people with PTSD and co-occurring psychotic symptoms can influence insight more broadly, since PTSD and psychotic disorders overlap in many ways. Specifically, PTSD symptoms such as hypervigilance and exaggerated negative beliefs about the world and others (e.g., that people can't be trusted) can lead to heightened feelings of suspiciousness that can amplify psychotic symptoms.

This article seeks to expand the knowledge-base on insight among people with SMI, co-occurring PTSD and elevated psychotic symptoms. Given that insight and psychotic symptoms often overlap, we considered insight about psychiatric problems broadly and did not differentiate insight by disorder. Drawing data from a large randomized controlled trial comparing two interventions for severe PTSD among people with SMI, we report on 1) the clinical and demographic correlates of insight at baseline, 2) the relationship between insight at baseline and participation in the treatment programs, 3) the relationship between treatment participation and insight at post-treatment, and 4) the relationship between improvement in insight at post-treatment and other clinical variables. We hypothesized that higher levels of insight at baseline would be associated with more knowledge about PTSD less and severe psychotic symptoms at baseline, and with greater participation in treatment. We also hypothesized that treatment participation would be associated with greater improvements in insight (regardless of treatment approach), and that these improvements would be associated with related changes in PTSD knowledge and reductions in psychotic symptoms.

2. Methods

Data were drawn from a randomized controlled trial comparing a 12–16 week CBT for PTSD program with a Brief three-session program (including only breathing retraining and education) in a treatment system serving persons with severe mental illness operated by the Rutgers University Behavioral Health Care (RUBHC). The study took place at five RUBHC sites in Northern and Central NJ, including three partial hospital programs and two outpatient programs. All study procedures were approved by the Rutgers and Dartmouth IRBs. Findings and procedures of the larger trial are reported in Mueser et al.¹².

2.1. Study Participants

Inclusion criteria for study participants for the larger trial were: 1) meets State of NJ definition of “severe mental illness,” including; 2) diagnosis of schizophrenia, schizoaffective disorder, major depression, or bipolar disorder, based on the SCID (First et al., 1996); 3) exposure to a traumatic experience that met DSM-IV criteria for a traumatic event and diagnosis of severe PTSD, based on the Clinician Administered PTSD Scale (CAPS), schizophrenia version¹³ with a minimum CAPS total score of 65¹⁴; 4) interested in receiving treatment for PTSD. Individuals with borderline personality disorder were included if they met the other study criteria. Exclusion criteria were: 1) hospitalization or suicide attempt in the past three months and 2) substance dependence within the past three months.

A total of 201 participants were enrolled in the larger study. For the current analyses, the sample was restricted to 146 participants demonstrating evidence of elevated psychotic symptoms at baseline on the Positive and Negative Syndrome Scale (PANSS). We decided to restrict the sample to those with significantly elevated psychotic symptoms for two reasons: 1) there is evidence that persons with PTSD in general show some elevation in psychotic symptoms such as hallucinations and suspiciousness, and we wished our sample to be restricted to persons whose experience of psychosis exceeded what might normally be associated with PTSD¹⁵, and 2) prior research has indicated that impaired insight is more likely to occur among persons with elevated psychotic symptoms¹⁶. Following Mueser et al.¹⁷, we defined elevated psychotic symptoms as having a rating of 4 (corresponding with moderate symptom severity) or higher on any of the following items on the PANSS at baseline: delusions, hallucinations, suspiciousness, unusual thought content, or grandiosity.

Demographic characteristics of the selected sample are reported in Table 1. Participants were predominantly African-American women in their 40’s, most typically diagnosed with major depression or schizoaffective disorder.

2.2 Measures

Evaluations included clinical interviews and self-report measures. Assessments were conducted at baseline, post-treatment, and 6 and 12 months post-treatment.

2.2.1. Interview-Based Assessments—Psychiatric symptoms were assessed with the *Positive and Negative Syndrome Scale* (PANSS¹⁸). Insight was specifically assessed using the “insight” item (G12) from the PANSS, which asks the interviewer to rate the participant’s lack of insight into having a mental illness on a 7 point scale, considering factors such as whether they believe that they have a mental illness, whether it is serious, and if it requires treatment. Ratings are made after initial probes including “Do you, at this time, have any psychiatric or mental problems?” PTSD symptom severity was assessed with the *CAPS, Schizophrenia Version*¹². Other Axis I psychiatric diagnoses were evaluated at baseline only with the *SCID-I*¹⁹.

2.2.2. Self-report Measures—Understanding of PTSD was assessed with the *PTSD Knowledge Test*, which contains 15 multiple choice questions about PTSD and has been

previously shown to be sensitive to the effects of education about trauma and PTSD in persons with severe mental illness⁹ (alpha = .72 for the 6 true-false items). Depression and anxiety severity were evaluated with the *Beck Depression Inventory-II*²⁰ (alpha = .9 at baseline and .94 at follow-up) and the *Beck Anxiety Inventory*²¹ (alpha = .94 at baseline and .94 at follow-up).

2.3. Procedures

2.3.1. Recruitment—Following administration of the trauma and PTSD screening instruments at the five clinic sites, clients were given information about the PTSD study and indicated whether they would be interested in being contacted by the research team if they met preliminary eligibility criteria for the study. Potentially eligible and interested clients were contacted by a research team member, who described the study and obtained informed consent. The baseline assessment was then conducted to confirm eligibility, with individuals meeting all criteria randomized to either the CBT or Brief program following completion of the interview. Participants were paid for completing baseline assessments, regardless of whether they enrolled in the study or not.

2.3.2. Randomization and Follow-up Assessments—Participants were randomized to the CBT or Brief programs via a computer program operated by an off-site data manager, with no study personnel aware of assignments in advance. In order to avoid confounding treatment program (CBT or Brief) with the duration of time elapsed between the baseline and subsequent assessments, follow-up assessment dates for the participants in the Brief program were yoked to the dates for the post-treatment and follow-up assessments of participants in the CBT program (post-treatment assessments were conducted about 4 months after baseline assessments). All interviewers were blind to treatment assignment. Participants were paid for completing assessments.

3. Results

Impairment in insight at baseline was not normally distributed, and ranged from 1 (no impairment) to 6 (moderately severe impairment) in our sample, with a mean score of 2.37 (SD = 1.18). The sample was split into roughly 3 groups with 83 participants (56% of the sample) demonstrating minimal or no impairment, 30 (20.5%) demonstrating mild impairment, and 33 (22.6%) demonstrating moderate or moderately severe impairment.

We first examined correlates of impaired insight at baseline. As can be seen in Table 2, impairment in insight was not correlated with any of the demographic variables. It was statistically significantly correlated with the PANSS positive subscale ($r = .30, p < .01$) and PANSS disorganized symptoms ($r = .45, p < .01$). Lack of insight was also significantly correlated with emotional distress ($r = -.21, p < .01$), but in the opposite direction, with more impairment associated with less distress). Impairment in insight was also significantly correlated with PTSD knowledge ($r = -.24, p < .01$), but not with the severity of PTSD symptoms, PANSS negative symptoms, or self-reported depressive or anxiety symptoms. As an exploratory analysis, we also examined whether impairment in insight at baseline was associated with clinical variables at follow-up (analyses not shown). There were no

significant associations between baseline insight and follow-up scores (controlling for baseline scores) in any of the clinical variables.

We next examined whether impaired insight at baseline was associated with subsequent participation in treatment. Treatment participation was a priori defined as the attendance of at least 2 of the 3 sessions for the Brief treatment, and at least 6 of the 12–16 sessions of the CBT condition. Of the 146 participants in our sample, 108 (60 brief and 48 CBT) were categorized as “participating” in treatment, while 38 (11 Brief and 27 CBT) were categorized as non-participants. The mean number of sessions for study participants assigned to Brief treatment was 2.63 (SD = 1.12), while the mean number of session for participants assigned to CBT was 9.33 (SD = 6.21). Individuals who participated in treatment did not differ significantly from non-participants in insight impairment at baseline ($F = 1.23, p = .27$). There were no differences by treatment type (CBT vs. Brief).

We next examined the relationship between treatment participation and impaired insight at follow-up. Table 3 presents findings from a multiple regression predicting impaired insight at post-treatment. We included treatment participation and controlled for baseline insight impairment, and positive and disorganized symptoms at baseline (we did not include treatment type, as there was no evidence for a difference in insight impairment at post-treatment between the two treatment groups). Treatment participation was significantly associated with improved insight at post-treatment ($\beta = -.23$), controlling for baseline insight impairment, positive and disorganized symptoms. As can be seen in Table 3, impairment in insight and severity of positive symptoms at baseline were also significantly positively associated with impairment in insight at follow-up, but severity of disorganized symptoms was not.

Next, we examined whether change in impaired insight between baseline and post-treatment was associated with changes in other clinical variables. To do so, we created residual change scores and then examined correlations between these variables. Residual change scores are preferable to raw change scores as they statistically control for baseline level and are therefore more sensitive to change²². Findings from these analyses are summarized in Table 4. As seen in Table 4, improved insight was associated with reduced severity of negative symptoms and disorganized symptoms, but not with any other clinical variables. This suggests that participants showed reductions in both negative and disorganized symptoms as they improved in insight, although it is not possible to discern the direction of this relationship. Contrary to expectation, residual change in insight was not associated with residual change in PTSD knowledge.

4. Discussion

The findings indicated that impairment in insight among persons with SMI, co-occurring PTSD and elevated psychotic symptoms is relatively common, with roughly half of the sample having mild or moderately impaired insight at the beginning of the study. Further findings, consistent with hypotheses, indicated that impairment in insight at baseline was significantly associated with psychotic symptoms, disorganization, and PTSD knowledge, but was not associated with severity of negative symptoms, PTSD symptoms, or self-

reported depression/anxiety. However, consistent with previous studies reporting an association between insight and depression⁵, baseline impaired insight was associated with less emotional distress. These findings suggest that the pattern of associations of insight impairment among people with psychotic symptoms and co-occurring PTSD are similar to those found among persons with psychotic symptoms generally.

With regard to the relationship between insight and treatment participation, our hypothesis that clients with lower levels of insight at baseline would be less likely to participate in treatment was not confirmed. Although insight is often thought of as a predictor of treatment engagement, these findings suggest that impaired insight did not interfere with active participation in the study treatments. Baseline insight was also not found to predict improvement in the clinical variables at follow-up, indicating that high initial levels of insight were not necessary in order for participants to respond to the study interventions. The lack of association between insight and involvement in treatment may be due to the fact that the study participants were already engaged in treatment services at RUBHC, and consented to be contacted by research staff for participation in a treatment study.

An important finding that was consistent with our hypothesis was that participation in treatment for PTSD was associated with improved insight. This finding, which is similar to studies of cognitive behavioral therapy for psychosis,²³ was independent of treatment type (CBT or Brief), suggesting that the “psychoeducation” component of treatment (common to both conditions) could be the main therapeutic ingredient involved in improving insight in PTSD treatment. This finding is especially interesting considering that insight, as measured by the PANSS, is primarily concerned with one’s understanding of having a “mental illness” and is not specific to the experience of PTSD symptoms. However, it is plausible that persons who participated in treatment developed a new understanding of their psychiatric symptoms after learning about the influence of trauma on their internal experiences. This understanding may have made the label “mental illness” more acceptable to these participants. Put another way, the education provided, which included information about PTSD symptoms resulting from trauma exposure, as well as other common symptoms associated with PTSD (e.g., “over-arousal,” depression, other negative feelings), may have normalized the experience of psychiatric symptoms more broadly, thereby reducing the stigma associated with acceptance of the label “mental illness.”

With regard to the correlates of improvement in insight, contrary to hypotheses, findings indicated that improvement in insight was not associated with improvements in PTSD knowledge, positive symptoms or PTSD symptoms; however, there was evidence that improvements in insight were related to decreases in negative and disorganization symptoms. Based on our findings, improvements in PTSD knowledge, a concept similar to insight, did not correspond to improvements in insight to psychiatric symptoms. It is also possible that improvements in PTSD knowledge alone were not responsible for improved insight, but may have contributed in addition to other factors which allowed individuals to make sense of their psychiatric symptoms in a general way. Some implications of this finding could be that PTSD knowledge does not lead to the application of such knowledge to one’s own experience of symptoms or, alternatively, that a longer-follow up period is required to detect a relationship between insight and PTSD knowledge.

Some important limitations of our study should be noted. While data were drawn from a randomized controlled trial, study participants selected themselves into “treatment participation” groups. Although we did not find that baseline insight predicted treatment participation, it is plausible that a change in insight that was unrelated to treatment preceded participants’ decision to engage or disengage in treatment after beginning it. Furthermore, it is not possible to determine a causal direction for the observed relationship between change in insight and improvement in negative and disorganized symptoms, as it is possible that symptom improvements led to improvements in insight. In addition, our measure of insight consisted of a single item on the PANSS, rather than multidimensional measure of insight. Although, the PANSS insight item has been found to be strongly correlated with multidimensional measures of insight²⁴, more nuanced measures of insight are preferable.

5. Conclusion

The findings suggest that impaired insight is an appropriate target for treatment among persons SMI, co-occurring PTSD and elevated psychotic symptoms. Furthermore, engagement in treatment and providing information to people about PTSD may lead to improved insight and related improvements in other psychiatric symptoms, including disorganization and negative symptoms. As a result, findings underscore the importance addressing PTSD among people with SMI.

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Table 1

Demographic Characteristics of the Overall Sample (n = 146)

Variable	n	%
Gender: Male	47	32
Female	99	68
Ethnicity: White	40	27
Hispanic	26	17.8
African-American	76	52
Other	4	.02
Completed High School: No	49	34
Yes	97	66
Living Independently: No	46	32
Yes	100	68
Ever Married: No	83	57
Yes	63	43
Diagnostic Group: Schizophrenia	8	6
Schizoaffective	55	38
Bipolar I	37	25
Major Depression	46	32
	<i>Mean ± SD</i>	
Age	43.16 ± 10.04	

Table 2

Correlations Between Impairment in Insight, Demographic and Clinical Variables at Baseline (n = 146)

Variable	Correlation with Impairment in Insight at Baseline
Age	-.117
Gender (0 = Male, 1 = Female)	.02
Completed High School (0 = No, 1 = Yes)	-.011
Schizophrenia-Spectrum Diagnosis vs. Other (0 = Yes, 1 = No)	.079
PANSS Positive Symptoms	*.301
PANSS Negative Symptoms	.053
PANSS Disorganization	*.449
PANSS Emotional Distress	*-.214
PTSD Knowledge	*-.242
CAPS Re-Experiencing Severity	.062
CAPS Avoidance Severity	.099
CAPS Hyper-Arousal Severity	-.014
BDI	.034
BAI	-.003

*
p < .01

Table 3

Simultaneous Regression Predicting Impairment in Insight at Follow-up

	Beta	t	p
Treatment Participation (0 = Non-Participant, 1 = Participant)	-.230	-2.86	.005
PANSS Impairment in insight (baseline)	.205	2.24	.027
PANSS Positive symptoms (baseline)	.198	2.27	.025
PANSS Disorganized symptoms (baseline)	.122	1.32	.188

 $R^2 = .237$, $F = 9.34$, $p < .001$

Table 4

Correlations Between Residual Change in Impairment in Insight between Baseline and Post-Treatment and Residual Change in Clinical Variables (n = 127)

Variable	Correlation with Residual Change in Insight Impairment
Residual Change in PANSS Positive Symptoms	.165
Residual Change in PANSS Negative Symptoms	*.288
Residual Change in PANSS Disorganization	*.364
Residual Change in PANSS Emotional Distress	-.001
Residual Change in PTSD Knowledge	-.015
Residual Change in CAPS Re-Experiencing Severity	-.008
Residual Change in CAPS Avoidance Severity	-.032
Residual Change in CAPS Hyper-Arousal Severity	-.009
Residual Change in BDI	-.048
Residual Change in BAI	-.008

*
p < .01