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Psychosis-spectrum experiences linked to specific psychotherapy readiness domains among psychiatrically hospitalized adolescents

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Abstract

Aim: Early psychosocial treatment for psychosis-spectrum symptoms has been linked to positive outcomes, while delayed treatment is associated with poorer prognosis. Thus, there is a critical need to bolster psychotherapy engagement efforts, particularly among high-risk groups and during high-risk periods, in order to maximize recovery. This study explores the relation between psychosis-spectrum symptoms and psychotherapy readiness among psychiatrically hospitalized adolescents, a foundational step for developing more effective psychotherapy engagement approaches for this population.

Methods: Adolescents (n = 704; 12–18 years) who were admitted to a psychiatric inpatient unit completed the Readiness for Psychotherapy Index (RPI), a psychosis-spectrum questionnaire (PRIME Screen), and a brief diagnostic interview at intake. Correlational patterns and regression analyses were used to explore associations between variables.

Results: The PRIME Screen was negatively associated with the RPI Openness subscale and positively associated with the Distress subscale, beyond the effects of demographics (i.e. age, sex, race) and psychiatric diagnoses.

Conclusions: Results indicate that the RPI probes multiple facets of psychotherapy readiness that have unique associations with psychosis-spectrum experiences. Teens with higher PRIME scores endorsed greater mental health-related distress and lower levels of openness to psychotherapy. These psychotherapy readiness factors warrant further exploration, as they may be

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significant barriers or facilitators to engaging adolescents with psychosis-spectrum symptoms in much needed early treatment services.

Keywords

psychotherapy readiness; PRIME Screen; psychosis-spectrum; adolescents; psychiatric hospital

Introduction

Early psychosocial treatment is critically important for youth with emerging psychosis-spectrum disorders (Diaz-Caneja et al., 2015; McGorry, 2015). Psychotherapy readiness, i.e. one's willingness to share personal information with a professional and work in therapy to resolve problems, may be a highly influential characteristic impacting an individual's ability to effectively engage in psychosocial treatments such as individual or family therapy. For those on a trajectory towards full-threshold psychosis, delays in effective treatment are associated with poorer prognoses (Clemmensen, Vernal & Steinhausen, 2012). Delays in the initiation of mental health care are also associated with poorer engagement in treatment, in general, and psychotherapy, in particular (Álvarez-Jiménez et al., 2009; Turner, Smith-Hamel, & Mulder, 2007). Furthermore, timely engagement in psychotherapy is important for youth exhibiting psychosis-risk symptoms, regardless of whether they are on a trajectory towards full-threshold psychosis, because these symptoms often cause distress and interference which may exacerbate other mental health concerns and prolong functional impairment, especially if symptoms are unremitting and untreated (Fusar-Poli et al., 2009; Fusar-Poli et al., 2015). Thus, there is a critical need to understand and bolster psychotherapy readiness among youth experiencing psychosis-spectrum symptoms, in order to maximize early treatment engagement and therapeutic outcomes.

With growing attention to emergent stages of psychosis, early intervention initiatives are becoming increasingly available for individuals at clinical high risk (CHR) for psychosis (i.e., those with clinically significant subthreshold symptoms who meet criteria for a psychosis-risk syndrome and are at a markedly high risk for developing future psychosis). Several psychotherapy modalities, including Cognitive Behavioral Therapy (CBT) and family-based therapies, have demonstrated efficacy (McFarlane et al., 2014; Miklowitz et al., 2014; Thompson et al., 2015). Psychosocial CHR interventions have been consistently linked to positive outcomes including functional improvement, distress and symptom alleviation, delayed onset of psychosis, and prevention of full psychosis (Okuzawa et al., 2014). Early meta-analytic data indicated that early treatment, including mixed trials of psychosocial and pharmacological treatment, among CHR individuals may reduce risk of psychosis onset by ~50%−66% after 1 year, and by approximately 35% after 2–4 years (Fusar-Poli et al., 2012; van der Gaag et al., 2013). More recent trials, however, have highlighted the potential risks associated with antipsychotic use for CHR (Zhang et al., 2020), In fact, early psychosis intervention guidelines indicate the use of psychosocial treatment as a first-line intervention for psychosis-risk syndromes, prior to the use of antipsychotics (Schmidt et al., 2015; Addington et al., 2017). Furthermore, among individuals in their first episode of psychosis, psychosocial intervention, and CBT in particular, is an important component of gold-standard treatment that may be as effective as

antipsychotic treatment for some individuals (Francey et al., 2020; Morrison et al., 2018). Thus, psychotherapy engagement is a critical component of early psychosis intervention.

Despite the field's advances in identifying individuals at CHR and the promising outcomes linked to early psychosocial care, many youth do not receive psychotherapy for psychosis-spectrum experiences until a full-threshold first episode emerges. Little is known about how adolescents with lower-level psychosis-risk symptoms view mental health treatment, broadly speaking, and psychotherapy, in particular, in their early contacts with mental health professionals. Stigma-related influences, however, have been identified as playing a prominent role in negative attitudes toward treatment among those at CHR (Gronholm, Thornicroft, Laurens, & Evans-Lacko, 2017). This suggests that early assessment of one's attitudes and willingness to engage in therapy may facilitate a more effective approach to linking individuals to appropriate care. Additional exploration of how psychosis-spectrum symptoms may be linked to different facets of psychotherapy readiness may inform efforts to effectively engage youth in psychosocial services.

Teens with psychosis-risk symptoms are often hospitalized for other psychiatric disorders, making inpatient settings key points of contact for identification of at-risk youth. Given recommendations to enhance engagement strategies among high-risk groups and during high-risk periods (Kreyenbuhl, Nossel, & Dixon, 2009), exploring psychotherapy readiness in relation to psychosis-risk symptoms among psychiatrically hospitalized adolescents may be a critical step in developing more effective engagement approaches. This research could lay the groundwork for developing brief interventions to be delivered within inpatient settings to support more positive attitudes and beliefs about psychotherapy engagement after hospital discharge.

This study explores links between psychosis-spectrum symptoms and psychotherapy readiness among adolescents on a psychiatric inpatient unit. Findings could inform methods to assess psychotherapy readiness in conjunction with psychosis-risk, a necessary step for improving engagement in psychosocial interventions that are critical for psychosis-risk monitoring and management. Therapy readiness was assessed using the Readiness for Psychotherapy Index (RPI; Ogrodniczuk, Joyce, & Piper, 2009), which includes a total score and four subscale scores: Distress, Disinterest, Openness, and Perseverance. It was hypothesized that greater RPI Distress would be positively associated with psychosis-risk experiences. This was hypothesized due to the atypical and stigmatized nature of these symptoms, as well as the additional stress and interference that these experiences often elicit (Hartley, Barrowclough, & Haddock, 2013; Palmier-Claus, Dunn, & Lewis, 2012). It was further hypothesized that other facets of psychotherapy readiness, such as openness, interest in therapy, and willingness to work in therapy, would be inversely related to psychosis-spectrum experiences. This was hypothesized due to the associated stigma and lack of perceived internal control among individuals with psychosis-spectrum experiences (Stowkowy et al., 2015; Thompson et al., 2013). We also hypothesized that psychosis-risk symptoms would be negatively associated with overall readiness , a composite derived from the four subscales.

Methods

Participants

The study sample included adolescents admitted to a psychiatric inpatient unit in the northeast United States for acute safety concerns. The majority of adolescents were admitted due to suicidal ideation, suicide attempts, or severe self-harm. Many adolescents were admitted for aggression or dysregulated behavior, and a minority of adolescents were admitted due to substance use, disorganized behavior, or psychosis. The average length of stay was 9 days.

Procedure

This study was approved by the hospital's Institutional Review Board (IRB). Given its classification as a chart review, the study was granted a waiver of consent, and the hospital's electronic medical record system (EPIC software) was used to obtain intake measure data. Within 72 hours of admission adolescents completed a standard hospital assessment protocol, administered and monitored by psychology staff, via Research Electronic Data Capture (REDCap; Harris et al., 2009) software presented on tablets. This intake battery takes approximately one hour to complete and includes the RPI, a psychosis-spectrum questionnaire (the PRIME Screen- Revised or PRIME; Miller et al., 2004), and a brief diagnostic interview (the Children's Interview for Psychiatric Syndromes or ChIPS; Weller et al., 1999), along with other self-report measures not included in this study. The ChIPS is used as a preliminary assessment of diagnostic criteria, to inform further assessment and treatment planning. The PRIME is administered to screen for potential psychosis-spectrum symptoms; clinical staff follow up on symptom endorsements to assess for psychosis-spectrum diagnoses so that early intervention can be implemented if needed. The RPI is used to gauge psychotherapy readiness, in order to inform clinical care on the unit, and to help prepare adolescents for outpatient treatment after hospital discharge (adolescents are linked to community providers and outpatient therapy appointments are booked prior to discharge from the unit). All adolescents engage in group and family therapy while hospitalized, and, in order to maximize limited psychotherapy resources on the unit, individuals who demonstrate a greater degree of readiness on the RPI are offered additional individual therapy services. Adolescents with a lower degree of psychotherapy readiness work with their treatment teams (i.e. psychiatry and social work providers) to prepare for outpatient therapy after hospital discharge.

Measures

The RPI was used to examine respondents' willingness to work in therapy, share personal information, and desire to change or resolve personal problems. The RPI is composed of 20 items rated on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). Items are organized into four subscales: Disinterest (e.g. lack of interest/desire for therapy), Perseverance (e.g. willingness to work in therapy), Openness (e.g. willingness to self-disclose), and Distress (e.g. level of discomfort caused by symptoms), as well as a total score. According to RPI developers, a higher degree of psychotherapy readiness is demonstrated by higher scores in all domains except Disinterest (a low score would indicate a greater degree of readiness).

The PRIME is a 12-item screener that asks respondents how much they agree that they have experienced potential psychosis-spectrum symptoms, including bizarre and delusional beliefs, grandiose ideas, and hallucinations. Ratings are based on a Likert scale ranging from definitely disagree (0) to definitely agree (6). The PRIME (Miller et al., 2004) has been validated against comprehensive assessment of psychosis-risk syndromes and demonstrates good psychometric properties for identifying individuals at clinical high risk for psychosis within help-seeking populations (Kline & Schiffman, 2014). Although the PRIME is not precise enough to be used as stand-alone tools to diagnose psychosis-risk syndromes, it is an efficient method of first-line screening and it has been used as a proxy for overall severity of psychosis-spectrum symptoms (Kline et al., 2015). Continuous PRIME scores were used in this study to explore the full spectrum of experiences in relation to psychotherapy readiness.

The ChIPS is a highly structured and well-validated diagnostic interview for youth (Weller, Weller, Fristad, Rooney, & Schecter, 2000). The ChIPS was used to identify mental health diagnoses among adolescents on the unit, based on the youth's self-reported experiences. For this study, diagnostic status was dichotomized (0 for no diagnosis, 1 for meeting diagnostic criteria) for the following psychiatric disorders: mood disorder (i.e. any depressive or bipolar disorders), anxiety (i.e. phobia, social anxiety, generalized anxiety, obsessive-compulsive disorder), behavioral disorder (i.e. oppositional/defiant disorder [ODD] or conduct disorder [CD]), attention deficit/hyperactivity disorder (ADHD), and post-traumatic stress disorder (PTSD).

Results

The full sample included 704 adolescents with complete data. Participants were aged 12–18 years ($m = 14.77$, $SD = 1.67$), and the majority were female (64.1%). The racial breakdown of the sample was as follows: 70.2% white, 9.9%, black, and 19.8% identified as another race. Given prior evidence indicating differences in attitudes toward mental health treatment across age, sex, and race (Gonzalez, Alegria, & Prihoda, 2005), these demographic variables were included in our analyses. Based on ChIPS data, 71.7% of the sample had a mood disorder, 65.3% had an anxiety disorder, 33.2% had a behavioral disorder (ODD or CD), 25.1% had ADHD, and 22.9% had PTSD. A total of 376 individuals (53.4%) endorsed one or more PRIME symptom.

The distributions of the PRIME and RPI scales were approximately normal (i.e., skewness and kurtosis < |1|; see Table 1 for descriptive characteristics). Correlations among the PRIME, RPI scales, ChIPS diagnoses, and demographic variables are presented in Table 2. Two of the RPI subscales (Perseverance and Openness) were significantly, negatively correlated with the PRIME, whereas the Distress scale was significantly, positively associated with the PRIME. The RPI Total Score and Disinterest subscale were not correlated with the PRIME. Given that the RPI Total and Disinterest scales also had relatively low internal consistency scores (Tavakol & Dennick, 2011), these scales were consequently were dropped from further analyses (Table 1).

Linear regression analyses were used to further explore the relation between PRIME scores and the RPI Distress and Openness scales, given the moderate correlations observed between

these variables. Parallel regression models included the PRIME, ChIPS diagnoses, and demographic predictors for each of the two RPI outcomes of interest, Distress and Openness (Table 3). PRIME score, mood disorder, and anxiety were all positively associated with RPI Distress, with small effects. White racial identity was also associated with Distress, with a very small effect. PRIME score was negatively associated with RPI Openness, with a small effect. Very small effects were conveyed by mood and behavioral disorders (in the negative direction) and male sex in the statistical prediction of Openness.

Discussion

This study examined the relation between psychosis-spectrum symptoms and psychotherapy readiness among adolescents admitted to a psychiatric inpatient unit. The RPI Total Score was not found to be clinically informative in relation to psychosis-spectrum symptoms in this sample, given the lack of significant correlation between the PRIME and RPI Total. Furthermore, the somewhat low internal consistency of the Total Score in this sample limits interpretation. Thus, our overarching hypothesis that psychosis-spectrum symptoms would be associated with overall psychotherapy readiness (i.e. RPI Total Score) was not supported. Although the RPI authors created the RPI Total Score to reflect overall level of readiness, they also emphasized the importance of prioritizing the individual components of readiness in clinical applications of the scale, especially when working with individuals with lower degrees of readiness (Ogrodniczuk et al., 2009). Our findings support this component-based approach to interpreting RPI results, as several of the individual subscales were found to be clinically relevant in the current sample.

Individual subscales of the RPI were found to be uniquely related to psychosis-spectrum experiences. Findings supported our secondary hypotheses that PRIME symptoms would be negatively associated with Openness and Perseverance, and positively associated with Distress.

Regression results indicated that PRIME symptoms were significantly associate with both RPI Distress (in a positive direction) and Openness (in a negative direction), with small effects, after controlling for co-morbid diagnoses derived from the ChIPS and demographic variables that have been linked to treatment attitudes in the literature (Gonzalez, Alegria, & Prihoda, 2005). Overall, these findings suggest that adolescents with more psychosis-spectrum symptomatology endorse greater concern for their mental health problems, a factor that, according to RPI creators, is linked to greater readiness for therapy. Somewhat paradoxically, yet not surprising given high rates of stigma associated with psychosis-spectrum experiences, greater PRIME scores were inversely related to attitudes about being open in therapy (i.e. Openness). Taken together, these findings raise the question of whether, in this sample, more endorsed distress is truly indicative of greater psychotherapy readiness, as RPI creators assert. There may be other factors not measured here (e.g., stigma, embarrassment, paranoia, or fear) that interact with psychosis-spectrum experiences to predict lower psychotherapy readiness.

Given the patterns of findings demonstrated here, clinicians may need to spend additional time building rapport with adolescents with psychosis-spectrum symptoms, especially in

acute care settings and when these experiences are being shared for the first time. Clinical effort used to convey empathy, exercise non-judgmental and collaborative attitudes, address misconceptions about treatment, dispel stigma, and instill hope may motivate positive attitudes towards mental health professionals and psychotherapy. The RPI may be a useful tool to use in conjunction with psychosis-risk assessment, and subscale scores may inform approaches to increase psychotherapy readiness. For example, motivational interviewing may be helpful for ambivalent individuals, whereas approaches emphasizing normalization and stigma-reduction might be a necessary first-step to engaging others with more negative or guarded attitudes. Developing interventions to enhance therapy engagement is particularly important given evidence that individuals with early psychosis are at an increased risk of service disengagement (Conus et al., 2010; Kreyenbuhl, Nossel, & Dixon, 2009; Schimmelmann et al., 2006), and untreated psychosis is associated with particularly poor clinical, functional, and cognitive outcomes (Murru & Carpiniello, 2018; Thomson et al., 2019; Bhullar, Klar, & Anderson, 2018).

Our findings highlight some interesting relations between demographics and clinical variables of interest, which warrant discussion and further investigation. Consistent with previous research, our results indicated a small negative correlation between age and PRIME scores (Rakhshan et al., 2018). The clinical implications of potential age-related effects relative to the PRIME warrant further investigation. Interestingly, female sex was associated with greater RPI Distress, however, male sex was associated with greater RPI Openness. These results are somewhat contradictory to prior research, which indicates that males are less likely to seek mental health treatment compared to females (Gonzalez, Alegria, & Prihoda; 2005). These sex differences, however, may not be consistent in Latino and African American samples. Notably, racial minority identities made up almost 30% of the current sample (n = 210). Racial minority status was correlated with lower levels of psychotherapy readiness (i.e. lower Distress, lower Perseverance), indicating that minority youth may benefit from interventions targeting psychotherapy readiness. Given mixed patterns of results seen across our sample and previous literature, further in-depth exploration of demographic variables in relation to psychosis-risk and psychotherapy readiness is critical to better understand factors relevant to treatment readiness across different groups and settings.

Limitations and future directions

One study limitation was the use of self-report measures, as they rely on adolescents' willingness, honesty, and insight. Furthermore, the PRIME Screen was used as a proxy for psychosis-spectrum symptoms and although over 50% of participants endorsed the presence of at least one symptom, it is unknown how many would endorse clinically significant symptoms. There may be differences in psychotherapy readiness among youth who meet psychosis or psychosis-risk criteria versus those who report subclinical symptoms.

It would be informative to have a more face-valid and objective measure of overall psychotherapy readiness against which to compare the RPI scales, particularly in the context of the psychosis-spectrum. Additionally, the RPI Distress scale is not specific to psychosis-risk symptoms, and results could differ if the RPI was anchored to psychosis-spectrum experiences, in particular. It is possible that the presence of PRIME symptoms and higher

RPI Distress ratings are both the byproducts of greater severity of psychopathology in general, rather than specific to the psychosis-spectrum per se. In controlling for the presence of ChIPS diagnoses in our regression analyses, however, we were able to account for the effects of some of the most common psychiatric diagnoses on the RPI outcomes, and PRIME scores accounted for unique variance with respect to Distress and Openness.

Interview-based assessment of psychosis-spectrum symptoms and psychotherapy readiness would allow for a deeper understanding of clinically relevant symptoms and facilitate further exploration of the links between early psychosis symptomatology and therapy readiness.. Understanding psychotherapy readiness among psychiatrically acute adolescents is an important step in addressing barriers to engagement among this population of youth at risk for ongoing mental health difficulties. With this in mind, further exploration of the relation between different types of distress and treatment attitudes is needed to understand how specific types of distress (e.g., loneliness, paranoia, social anxiety) and moderators (e.g., stigma, functional interference, quality of life) may interact to impede treatment versus motivate help-seeking. In addition, interview-based data regarding different facets of therapy readiness (e.g., Openness, Distress) and their relation to specific psychosis-spectrum symptoms is necessary to inform targeted psychotherapy engagement strategies.

Another limitation of this study was not being able to account for treatment history, which may play an important role in adolescents' perceptions of and readiness for psychotherapy. An investigation into prior treatment experiences, especially as they relate to psychosis-spectrum symptoms, may be necessary for designing effective interventions to increase motivation for psychotherapy engagement.

Conclusions

Results indicate that psychotherapy readiness, as measured by the RPI, is not a unitary construct within this acute sample of psychiatrically hospitalized adolescents. The RPI may be a useful tool to evaluate domains of readiness among these youth, however, as the subscales probe multiple facets of readiness that are of clinical importance and have unique associations with psychosis-spectrum experiences. Specifically, teens with higher PRIME scores endorsed greater distress related to their mental health and lower levels of openness. These factors may be significant barriers to engaging adolescents with psychosis-spectrum symptoms in much needed therapy services. Findings warrant further exploration to inform psychotherapy engagement strategies for acute psychiatric and psychosis-risk populations.

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Table 1

Descriptive statistics for study measures

Measure	Range	Mean	SD	Skewness	Kurtosis	Cronbach's α
PRIME	0–72	21.72	18.05	0.52	−0.74	.92
RPI Total	7–68	40.14	11.17	−0.19	−0.07	.66
RPI Disinterest	5–25	12.24	3.82	0.48	0.26	.64
RPI Distress	5–25	17.86	4.41	−0.56	0.06	.80
RPI Openness	5–25	16.73	4.58	−0.21	−0.30	.80
RPI Perseverance	5–25	17.78	4.48	−0.46	0.11	.86

Notes. RPI: Readiness for Psychotherapy Index. $n = 704$.

Table 2

Correlation matrix including PRIME, RPI, ChIPS diagnoses, and demographic characteristics

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. PRIME Total Score	---												
2. RPI Total Score	−.04	---											
3. RPI- Disinterest	−.03	−.63**	---										
4. RPI- Distress	.31**	.50**	−.26**	---									
5. RPI- Openness	−.31**	.63**	−.18**	−.19**	---								
6. RPI- Perseverance	−.11**	.82**	−.28**	.22**	.58**	---							
7. Mood Disorder	.29**	.14**	−.22**	.42**	−.19**	−.05	---						
8. Anxiety Disorder	.20**	.16**	−.20**	.36**	−.14**	.02	.40**	---					
9. Behavioral Disorder	.16**	−.17**	.08*	.01	−.17**	−.18**	−.05	−.01	---				
10. ADHD	.14**	.01	−.04	.10**	−.08*	−.03	.10**	.15**	.20**	---			
11. PTSD	.23**	.04	−.08*	.19**	−.12**	−.04	.24**	.24**	.11**	.08*	---		
12. Age	−.10**	.09*	−.07t	.01	.10*	.05	.03	.16**	−.05	−.04	.05	---	
13. Sex	−.13**	.00	.12**	−.19**	.16**	.12**	−.29**	−.27**	.11**	−.04	−.18**	.05	---
14. Racial minority status	.02	−.16**	.14**	−.14**	−.05	−.08*	−.11**	−.11**	.07t	−.06	−.01	−.02	.05

Notes. RPI- Readiness for Psychotherapy Index; ChIPS- Children's Interview for Psychiatric Syndromes; Pearson correlations were used for two continuous variables (PRIME, RPI scores, age), point biserial correlation was used for one continuous variable and one dichotomous variable, and Phi coefficient was used for two dichotomous (0,1) variables (racial minority status, sex, and ChIPS diagnoses). Bootstrapping (1000 samples) was used in each set of correlations to control for Type 1 errors. $n = 704$.

* $p < .05$

** $p < .01$

t $.10 < p < .05$.

Table 3

Regression predicting RPI scales from PRIME symptoms

	Beta	t	f^2	R^2	df	F
Predictors of RPI Distress				0.26	694	26.94**
Age	−.01	−0.23	-			
Sex	−.03	−0.97	-			
Racial minority status	−.09	−2.68**	0.01			
PRIME symptoms	.18	5.16**	0.04			
Mood disorder	.26	6.97**	0.07			
Anxiety disorder	.19	4.99**	0.04			
Behavioral disorder	<.01	0.08	-			
ADHD	.01	0.34	-			
PTSD	.03	0.77	-			
Predictors of RPI Openness				0.15	694	13.48**
Age	.07	1.90t	-			
Sex	.11	2.90**	0.01			
Racial minority status	−.06	−1.60	-			
PRIME symptoms	−.23	−6.06**	0.05			
Mood disorder	−.09	−2.31*	0.01			
Anxiety disorder	−.04	−1.09	-			
Behavioral disorder	−.15	−4.00**	0.02			
ADHD	<.01	0.10	-			
PTSD	<.01	0.06	-			

Notes. Cohen's f^2 effect size convention: small - 0.02, medium - 0.15, large - 0.35. Effect sizes <. 01 are not reported (indicated by "-"). Sex was coded 0 - female, 1 - male. Racial minority status was coded 0 - white, 1 - racial minority identity. $n = 704$.

*P < .05

**p < .01

t.10 < p < .05.