



Factors impacting intent to seek treatment within youth at clinical high risk for psychosis

Gillian Ho^a, Danielle N. Pratt^{a,*}, Miranda A. Bridgwater^b, Jason Schiffman^b, Lauren M. Ellman^c, Vijay A. Mittal^d

^a Department of Psychology, Northwestern University, Evanston, IL 60208, USA

^b Department of Psychological Science, University of California Irvine, Irvine, CA 92697, USA

^c Department of Psychology, Temple University, Philadelphia, PA 19122, USA

^d Institutes for Policy Research and Innovations in Developmental Sciences, Departments of Psychology, Psychiatry, Medical Social Sciences, Northwestern University, Evanston, IL 60208, USA

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ABSTRACT

Existing work indicates that there is unmet need for care in those at clinical high risk (CHR) for psychosis. However, research on the factors that drive treatment seeking behaviors in this population is limited. Further, it is unknown how help-seeking behavior in CHR individuals compares to those seen in mood disorders, who have a higher rate of treatment seeking behavior. Participants ($n = 559$) completed an assessment of their intent to seek mental health treatment, attenuated psychosis-risk symptoms, and psychiatric symptoms and diagnoses. Participants were divided into CHR ($n = 91$), Mood Disorders (MD) ($n = 72$), or Community Controls (CC) groups ($n = 396$), whose intent to seek treatment was compared. Associations between intent to seek treatment with past treatment, depression, anxiety, positive and negative symptoms, distress from symptoms, intelligence quotient (IQ) estimates, and insight were assessed in CHR individuals. Further, it was assessed how this differs for the MD group. The MD group reported higher intent to seek treatment than CHR individuals, which reported higher intent to seek treatment than the CC group. In those at CHR, previous treatment, greater depression and anxiety severity, and higher distress all independently predicted higher intent to seek treatment. Depression predicted intent to seek treatment in both MD and CHR individuals. Previous treatment predicted intent to seek treatment in those at CHR. Our findings suggest that depression and past treatment utilization are critical factors in increasing intent to seek treatment in those at CHR, potentially serving as important targets for engaging this population in treatment.

1. Introduction

Increased attention has focused on individuals at clinical high risk (CHR) for psychosis given evidence that early intervention may reduce the risk of conversion or minimize the impairment associated with psychotic disorders (Addington et al., 2019). Conversion rates vary depending on the criteria used to identify the CHR state, but a study found that overall risk of conversion within 3 years is 22% (Fusar-Poli et al., 2020). A meta-analysis found that preventive interventions in those at CHR is associated with up to a 54% reduction in overall risk of onset after 12 months (van der Gaag et al., 2013). Further, longer duration of untreated psychosis is associated with higher symptom severity, worse functional outcomes, and poorer overall prognosis

(Addington et al., 2015; Marshall et al., 2005; Perkins et al., 2005), highlighting the importance of treatment engagement during this phase. Even before developing a psychotic disorder, the CHR state is associated with significant distress and impairment. Existing studies demonstrate that those at CHR have significant social and role functioning impairments (Addington et al., 2008; Carrión et al., 2013; Hui et al., 2013), have high rates of psychiatric comorbidity including anxiety and depression (Fusar-Poli et al., 2014; Granò et al., 2014a; Kelleher et al., 2012), and report lower subjective quality of life (Granò et al., 2014b; Hui et al., 2013; Ruhrmann et al., 2008), even among those who do not develop psychosis. Therefore, understanding treatment engagement is of paramount importance given that evidence suggests that this is more than just a risk group. Overall, with the emergence of attenuated

* Corresponding author.

E-mail address: Danielle.pratt@northwestern.edu (D.N. Pratt).

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positive and negative symptoms as well as the high rates of comorbid psychiatric disorders, this period can be very distressing and functionally impairing, highlighting the need for mental health services for this population. Thus, identifying the potential mechanisms underlying intent to seek mental health treatment in this population can offer important insight into help-seeking behaviors and potentially improve rates of service utilization. Our findings point to a potential mechanism that can be further tested in future studies.

Current research on rates of service utilization in individuals at CHR is limited. However, studies show that individuals who report experiencing subclinical psychotic symptoms are somewhat more likely to seek mental health treatment than those not reporting these experiences (Bhavsar et al., 2017; DeVlyder et al., 2014; Murphy et al., 2012; Petti et al., 2021). DeVlyder and colleagues observed that 30.4% of those who reported having psychotic-like experiences sought help from a mental health professional in the prior year (DeVlyder et al., 2014). However, not everyone who reports psychotic-like experiences has a CHR syndrome, and some percentage of that sample may not have a clear need for intervention at that time. Rates of help-seeking in the CHR population vary. Schultze-Lutter and colleagues found that in a sample of adults who developed psychosis, 23% sought help during the prodromal phase (Schultze-Lutter et al., 2015). Chung and colleagues found that in Korea in a sample of individuals at CHR, up to 50% initiated help-seeking behavior during their CHR period (Chung et al., 2010). However, of this 50%, individuals most often sought help from a family member, and only 26.3% initially sought help from a psychiatrist (Chung et al., 2010). These results suggest that there are still high rates of unmet need for care in this population.

Existing studies suggest that depression, anxiety, and distress from symptoms play important roles in motivating individuals at CHR to seek treatment. In a treatment-seeking sample of individuals at CHR, the most commonly self-reported reasons to seek treatment were depression and anxiety symptoms, highlighting the role of affective symptoms in triggering help-seeking behavior (Falkenberg et al., 2015). Bak and colleagues found that in people reporting subclinical psychotic experiences, hearing voices, nonverbal hallucinations (visual, somatic, gustatory, and olfactory hallucinations), and the passivity phenomenon (the belief that one's thoughts and actions are being influenced by an external force), were all strongly positively associated with impairment and clinical judgement of need for care (Bak et al., 2005). The associations between nonverbal hallucinations and passivity phenomena and need for care were mediated by distress, but hearing voices had a direct association with need for care (Bak et al., 2005). Additionally, Chung and colleagues found that in those at CHR, lower levels of distress regarding one's unusual thought content was associated with delays in help-seeking behavior (Chung et al., 2010). These findings suggest that lower levels of distress may lead to less active help-seeking, highlighting the role of distress as an important factor driving service utilization.

Despite negative symptoms being key factors influencing subjective quality of life (Domínguez-Martínez et al., 2015), social functioning (Robertson et al., 2014), and functional outcome (Glenthøj et al., 2020), the impact of negative symptoms on attitudes towards treatment has received little research attention. However, Rüschi and colleagues found that positive attitudes towards psychotherapy were significantly associated with lower severity of negative symptoms (Rüschi et al., 2013). Platz and colleagues also found that in a sample of at-risk patients in Switzerland, those who presented only with negative or affective symptoms had significantly longer pathways to care than those who presented with any positive symptoms (Platz et al., 2006). Insight into symptoms is another important component of the CHR state. Although not in the CHR population, insight into symptoms has shown to facilitate help-seeking behavior and service utilization in youth who were formerly part of the mental health, child welfare, and juvenile justice systems (Munson et al., 2011). Previous service use is also significantly associated with positive attitudes towards mental health treatment and intent to seek further treatment in the general population (ten Have

et al., 2010). Another potential motivating component to consider when evaluating help-seeking behavior is intelligence quotient (IQ). There is evidence that full scale IQ is an important determinant of knowledge about health (Beier and Ackerman, 2003), thus those with higher IQ scores may have greater mental health literacy, which is positively correlated with help-seeking behavior (Gorczyński et al., 2017). Given this evidence, examining the factors that impact individuals at CHR's intent to seek treatment could improve the development of targeted approaches to better engage them in treatment.

Considerably more is known about treatment seeking behavior in individuals with mood disorders, which may help to inform the motivations for CHR individuals to seek treatment. Although CHR individuals may not yet have a clinical diagnosis, the symptoms are associated with significant distress, social and role impairment, lower subjective quality of life, and cognitive deficits, even among those who do not develop psychosis (Addington et al., 2008; Bora et al., 2014; Carrión et al., 2013; Granö et al., 2014b; Hui et al., 2013; Ruhrmann et al., 2008). Additionally, there are high levels of comorbidity and symptom overlap between the CHR state and mood disorders (Chin et al., 2015; Kessler et al., 2007; Lin and Parikh, 1999; Magaard et al., 2017), and other disorders, as well, suggesting that the CHR syndrome is an important clinical syndrome in its own right. Further, a sizeable subset of CHR individuals do meet criteria for attenuated psychosis syndrome, which is now included in the main text of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (American Psychiatric Association, 2022) as an Other Specified Schizophrenia Spectrum and Other Psychotic Disorder. Similar to individuals at CHR, individuals with depression tend to prefer to seek help from their friends and family over a mental health professional (Chin et al., 2015). Despite this tendency, Kessler and colleagues found that 56.7% of those with major depression, 67.3% of those with bipolar I, and 65.8% of those with bipolar II sought formal mental health treatment within a 12 month period (Kessler et al., 2007). Factors associated with help-seeking in those with major depression include educational status, depression severity, and the presence of comorbid anxiety disorders (Magaard et al., 2017). Lin and Parikh found that those with depression that did not seek treatment have significantly more negative attitudes towards seeking mental health treatment than those who did (Lin and Parikh, 1999). Given that there has been more work done examining help-seeking behavior in those with mood disorders and the high rates of comorbid mood disorders in those at CHR, investigating the similarities and differences in intent to seek treatment between those at CHR and those with mood disorders may offer unique insight.

Although research is limited, existing work suggests that there is a high rate of unmet need for care in those at CHR (Chung et al., 2010). To date, it is unclear how the motivators for treatment compare to mood disorders (Addington et al., 2002). Therefore, this study first aimed to compare intent to seek treatment between those at CHR to those with mood disorders (MD), and community controls (CC), a transdiagnostic group to shed insight on how those at CHR engage with treatment relative to these other, more well-defined and understood groups. We hypothesized that people with MD would report higher intent to seek treatment than those at CHR, and those at CHR would intend to seek treatment more than CC (Rietdijk et al., 2011). Second, we aimed to evaluate which clinical experiences are predictive of intent to seek treatment within those at CHR. We hypothesized that positive symptoms, negative symptoms, insight into positive symptoms, intelligence quotient (IQ), past treatment, depression, anxiety, and distress related to positive symptoms would influence intent to seek treatment in individuals at CHR (Kobayashi et al., 2011). Finally, we conducted an exploratory analysis to investigate whether there were any differences in how these clinical experiences impact intent to seek treatment in individuals with MD compared to individuals at CHR.

2. Methods

2.1. Participants

Participants included adolescents and young adults in the general population who participated in the Multisite Assessment of Psychosis-Risk (MAP) (Ellman et al., 2020) study who were recruited across 4 sites: Northwestern University, Temple University, University of California, Irvine, and University of Maryland, Baltimore County. Since the goal of the MAP study is to improve identification and evaluation of psychosis-risk within the general community, participants were recruited from the local community via community outreach, flyers, and online ads on websites. Inclusion criteria for the study consisted of proficiency in the English language, being within the ages of 16–30, and having normal or corrected vision. There were no diagnostic exclusionary criteria.

Participant selection had two phases. In Phase 1, 6422 participants filled out an online survey that included a battery of questionnaires including two self-report scales designed to screen for psychosis-risk. Based on their scores on these two scales, participants were identified as either scoring above either of the predetermined psychosis-risk thresholds or randomly selected from those scoring below both of the predetermined psychosis-risk thresholds (full procedures described in Ellman et al., 2020). In Phase 2, all individuals above the psychosis-risk

threshold and an equal number of randomly selected participants below both the psychosis-risk thresholds were invited for structured clinical interviews and other assessments. Of those invited, 851 participants completed interviews. Participants were excluded from the present analyses if they were in active mental health treatment ($n = 277$) at the time of the study or within 3 months prior to the study, did not provide information on intent to seek mental health treatment ($n = 7$), or were identified as having present or past psychosis ($n = 8$) according to the Structured Clinical Interview for DSM-5 or the Structured Interview for Psychosis Risk Syndromes (First et al., 2015; Miller et al., 2003), therefore the final analytic sample is 559 participants (Table 1 and Fig. 1). Participants were included in the CHR group if they met for a CHR syndrome based on the Structured Interview for Psychosis Risk Syndromes (SIPS) (described below), in the MD group if they met for current depressive or bipolar disorder diagnoses based on the Structured Clinical Interview for DSM-5 (SCID-5) (described below), or in the transdiagnostic CC group if they had none or another DSM-5 diagnosis.

2.2. Measures

2.2.1. Treatment History Questionnaire (TRHQ)

The TRHQ is a self-report tool (created by PI of this study, JS and colleagues) and designed to assess past and current experiences with mental health services including therapy, medications, diagnoses, and

Table 1
Demographics and Clinical Information Table of Mood Disorders (MD), CHR, and Community Control (CC) groups.

	MD	CHR	CC	<i>p</i> -value	Pairwise comparisons		
					MD-CHR	CHR-CC	MD-CC
<i>n</i>	72	91	396				
Age, mean (sd)	21.39 (3.02)	20.36 (2.15)	20.66 (2.87)	0.055 ¹			
Sex assigned at birth				0.052 ²			
%Male	18.06	36.26	28.03				
%Female	77.78	63.74	71.97				
Race				0.773 ²			
%American Indian/Alaskan Native	0	0	0.51				
%Asian	20.83	25.28	30.56				
%Native Hawaiian/Other Pacific Islander	0	0	0.25				
%Black/African American	18.06	18.68	14.90				
%White	50.00	48.35	43.18				
%More than one race	5.56	3.29	6.06				
Ethnicity				0.229 ²			
%Hispanic or Latino	20.83	14.29	12.88				
%Not Hispanic or Latino	79.17	83.52	85.35				
Estimated years of education, mean (sd)	13.97 (1.89)	13.53 (1.57)	13.90 (1.82)	0.165 ¹			
Parental highest level of education				0.644 ²			
%Less than high school	4.17	2.20	2.02				
%High school degree or equivalent	11.11	10.99	8.08				
%Some college	4.17	6.59	8.08				
%Associates degree or a 2-year college	5.56	10.99	5.30				
%Bachelor's degree	29.17	18.68	22.98				
%Master's degree	19.44	27.47	24.50				
%Doctorate degree	11.11	8.79	14.39				
%Other	6.94	8.79	9.60				
WASI IQ, mean (sd)	109.17 (13.80)	110.22 (13.80)	115.32 (64.87)	0.560 ¹			
Any mental health treatment, <i>n</i>				<0.0001 ²	0.203 ²	0.0006 ²	<0.0001 ²
Previous treatment	38	38	97				
No previous treatment	34	51	296				
Psychosocial Treatment, <i>n</i>				<0.0001 ²	0.355 ²	0.001 ²	<0.0001 ²
Previous psychosocial treatment	30	33	84				
No previous psychosocial treatment	34	51	296				
Psychiatric disorders, <i>n</i>							
Anxiety	49	54	86	<0.0001 ¹	0.412 ³	<0.0001 ³	<0.0001 ³
Depressive	64	28	0	<0.0001 ¹	<0.0001 ³	<0.0001 ³	<0.0001 ³
Obsessive-compulsive	4	17	14	<0.0001 ¹	0.001 ³	<0.0001 ³	0.7834 ³

Note: Bolded values represent *p*-value <0.05.

¹ ANOVA *p*-value.

² Chi-square *p*-value.

³ Tukey's HSD adjusted *p*-value.

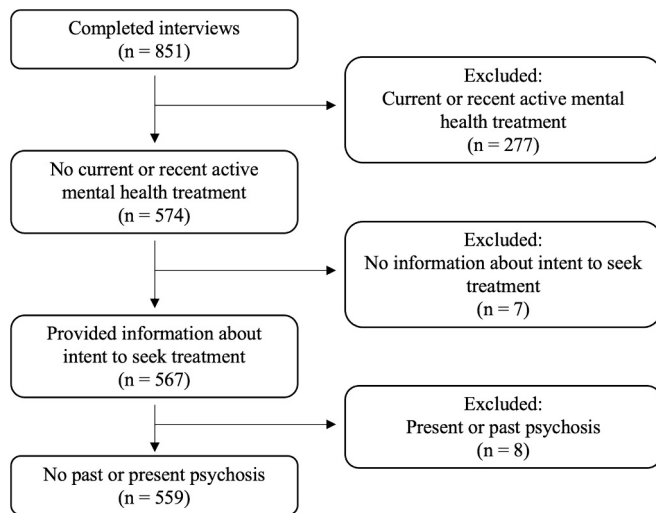


Fig. 1. Participants included in the final analytic sample and reasons for exclusion.

hospitalizations (Petti et al., 2021). This measure also examines to what degree individuals intend to seek treatment, for what type of mental health issues participants previously sought treatment (see Appendix A for items), and whether or not they ever received mental health care prior to 3 months ago. In this study, the primary dependent measure was the degree to which participants are considering seeking “some type of mental health care,” based on a 5-point Likert scale item with response options ranging from 0 (“Not at all”) to 5 (“Very much”). Therefore, this measure includes therapy, medication, and other potential interventions.

2.2.2. Structured Interview for Psychosis Risk Syndromes (SIPS)

The SIPS is a semi-structured clinical interview used to identify CHR syndromes and was used to determine group membership for the CHR group in this study (Miller et al., 2003). Although the SIPS assesses negative, disorganized, and general symptoms, the present study focuses only on positive symptoms. The positive symptom dimensions include unusual or delusional thoughts, suspiciousness and persecutory ideas, grandiosity, perceptual abnormalities, and disorganized communication. These symptom dimensions are rated on a scale of 0 to 6. On the scale, 0 represents absence of the symptom, 1–2 corresponds to sub-clinical experiences, 3–5 represent attenuated positive symptoms consistent with CHR syndrome, and 6 represents presence of psychosis.

2.2.3. Structured Clinical Interview for DSM-5 (SCID-5)

The SCID-5 is a semi-structured clinical interview used to identify the presence or absence of diagnoses according to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) (First et al., 2015). In the study, participants were evaluated for psychotic, bipolar, depressive, anxiety, obsessive-compulsive, trauma-related, eating, and substance use disorders. The MD group included all participants who met for current depressive and bipolar disorder diagnoses and did not meet for a CHR syndrome. The CC group included all participants who did not meet for current depressive or bipolar disorder diagnoses and did not meet for a CHR syndrome.

2.2.4. Secondary measures

Secondary measures include the PRIME Screen (Miller et al., 2004), Center for Epidemiologic Studies – Depression (CES–D) (Kohout et al., 1993; Radloff, 1977), State Trait Anxiety Inventory Trait Version, Anxiety Subscale (STAI-Trait) (Bieling et al., 1998; Spielberger, 1989), Wechsler Abbreviated Scale of Intelligence (WASI-II) (Wechsler, 2011), SIPS Score Separable Components (SSSC) (Pratt et al., 2022), and

Negative Symptom Inventory – Psychosis Risk (NSI-PR) (Pelletier-Baldelli et al., 2017), which are detailed in the supplementary methods.

2.3. Statistical analyses

In Aim 1, a one-way ANOVA and Tukey’s HSD test for post-hoc comparisons were utilized to explore if intent to seek treatment differed across groups. In Aim 2, separate simple linear regressions were used to evaluate whether past treatment utilization, depression, anxiety, positive symptoms, distress from positive symptoms, negative symptoms, IQ, and insight were predictors of intent to seek treatment in CHR individuals. A Bonferroni corrected threshold of 0.0056 was taken into consideration, but as we do not make any claims or recommendations based on this aim, we used the less stringent 0.05 threshold to determine which variables would be examined in Aim 3. In Aim 3, a multiple regression was conducted including all CHR and MD individuals to examine which variables predict intent to seek treatment, taking the others into account. The model included all significant Aim 2 variables, group membership, and the interaction between group and each one of the other variables. Non-significant interactions were dropped to improve model fit as there were no a priori hypotheses about how these variables interact (see supplemental table S1 for the initial model results) (Finney et al., 1984).

3. Results

3.1. Aim 1: group differences in intent to seek treatment

A one-way ANOVA revealed that there was a statistically significant difference in intent to seek treatment between each diagnostic group ($F(2, 556) = 33.1, p < 0.0001$). As hypothesized, Tukey’s HSD revealed that intent to seek treatment was significantly higher in the MD group compared to the CHR group ($p = 0.0002, 95\% \text{ C.I.} = [-1.33, -0.35]$, Cohen’s $d = 0.609$; Fig. 2). and CC group ($p < 0.0001, 95\% \text{ C.I.} = [-1.73, -0.94]$, Cohen’s $d = 1.04$; Fig. 2). CHR individuals also reported higher intent to seek treatment compared to CC ($p = 0.0038, 95\% \text{ C.I.} = [-0.85, -0.13]$, Cohen’s $d = 0.383$; Fig. 2).

3.2. Aim 2: separate predictors of intent to seek treatment within individuals at CHR

Separate simple linear regression analyses were used to examine the associations between intent to seek treatment and past treatment, negative symptoms, insight, depression, anxiety, positive symptoms, and positive symptom distress within the CHR group only. Consistent with our hypotheses, past psychiatric treatment ($b = 0.812, t(1, 87) = 2.760, p = 0.007, \text{Adj. } R^2 = 0.070$; Fig. 3A), depression ($b = 0.100, t(1, 87) = 3.463, p = 8.3e-4, \text{Adj. } R^2 = 0.111$; Fig. 3B), anxiety ($b = 0.063, t(1, 89) = 2.19, p = 0.031, \text{Adj. } R^2 = 0.041$; Fig. 3C), and positive symptom distress ($b = 0.024, t(1, 89) = 2.26, p = 0.026, \text{Adj. } R^2 = 0.044$; Fig. 3D) all positively predicted intent to seek treatment. Notably, only depression survived the Bonferroni correction for multiple comparisons threshold of 0.0056, but the less stringent threshold of 0.05 was utilized for further examination in Aim 3. Positive symptoms, negative symptoms, insight, and IQ were not significant predictors of intent to seek treatment within youth at CHR and were dropped from further analyses.

3.3. Aim 3: predictors of intent to seek treatment in CHR and MD groups

To explore how past treatment, depression, anxiety, and positive symptom distress impact intent to seek treatment in those at CHR and those with a MD, a multiple regression was conducted including depression, anxiety, distress, past treatment, and diagnostic group as predictors. Interactions between group membership and each of the four other predictors were assessed (supplementary Table S1), but the model was reduced to only include the main effects and significant interaction

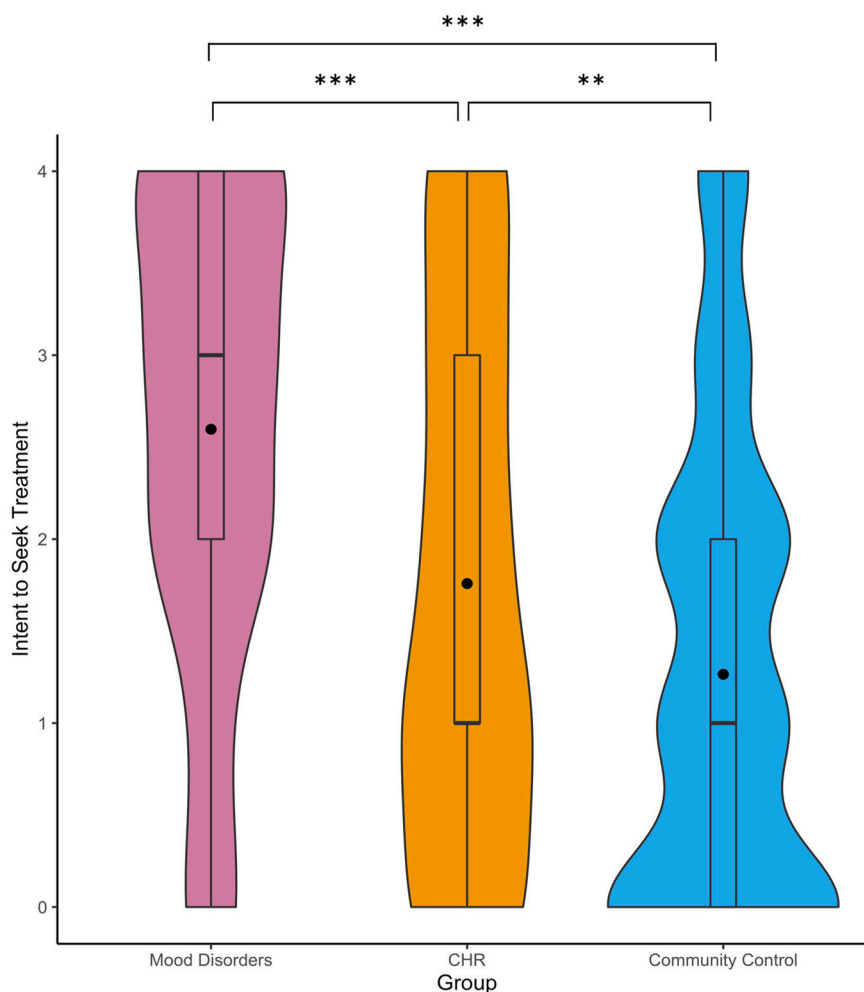


Fig. 2. Distribution of intent to seek treatment across groups. An ANOVA revealed that those with MD had significantly higher intent to seek treatment than those at CHR and those at CHR had significantly higher intent to seek treatment than CC. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

effects.

There was a significant main effect of depression severity ($b = 0.076$, $t(6, 150) = 3.167$, $p = 0.002$; Table 2) and a significant interaction effect between group and past treatment ($b = 0.953$, $t(6, 150) = 2.312$, $p = 0.022$; Fig. 4) influencing intent to seek treatment as part of this model ($F(6, 150) = 7.841$, $p = 2.362e-07$, $Adj. R^2 = 0.208$; Table 2 and Fig. 4). Those in the MD group report high intent to seek treatment regardless of previous treatment engagement, but those in the CHR group report higher intent to seek treatment if they previously engaged in treatment. Notably, in the unreduced model, there is a significant conditional effect of anxiety (supplementary Table S1). However, in light of the difficulties in interpreting main effects in the presence of interactions (Hayes et al., 2012), we focus on the reduced model findings that are more interpretable.

4. Discussion

To the best of our knowledge, this is the first study to investigate and compare the components that impact intent to seek treatment in those at CHR to those with MD. We believe that comparing those at CHR to those with MD and a transdiagnostic CC group would shed insight on how those at CHR engage with treatment relative to these other, more well-defined and understood groups. Characterizing the potential mechanisms that lead individuals to intend to seek psychiatric treatment in these groups may assist in identifying motivating areas to target that have the potential to improve rates of mental health service utilization.

We found that those with MD reported significantly higher intent to seek treatment compared to those at CHR and those at CHR reported significantly higher intent to seek treatment compared to CC. Based on existing literature on attitudes towards treatment and help-seeking behavior in those at CHR, we evaluated previous psychiatric treatment, depression, anxiety, and positive symptom distress as predictors of intent to seek treatment (Chung et al., 2010; Falkenberg et al., 2015). In those at CHR, previous psychiatric treatment utilization, greater depression and anxiety severity, and higher positive symptom distress all independently predicted higher intent to seek treatment, though notably only depression survived correction for multiple comparisons. When investigating how these factors interplay as well as assessing differences in the impact of these experiences on intent to seek treatment in those with MD compared to those at CHR, we found that depression predicts intent to seek treatment in both individuals at CHR and with MD. Additionally, past psychiatric treatment utilization predicts intent to seek treatment in those at CHR but not in those with MD, who intend to seek treatment regardless of past experience.

We found that those with MD reported higher intent to seek treatment than those at CHR and that those at CHR reported higher intent to seek treatment than CC, which has never been directly compared before. This finding is, however, consistent with the rates reported in separate studies that report treatment seeking behavior in 56.7% of individuals with MDD and 67.3% with bipolar within a 12 month period (Kessler et al., 2007), but only 23% with a CHR syndrome (Schultze-Lutter et al., 2015). The high rates of treatment seeking in those with MD may be

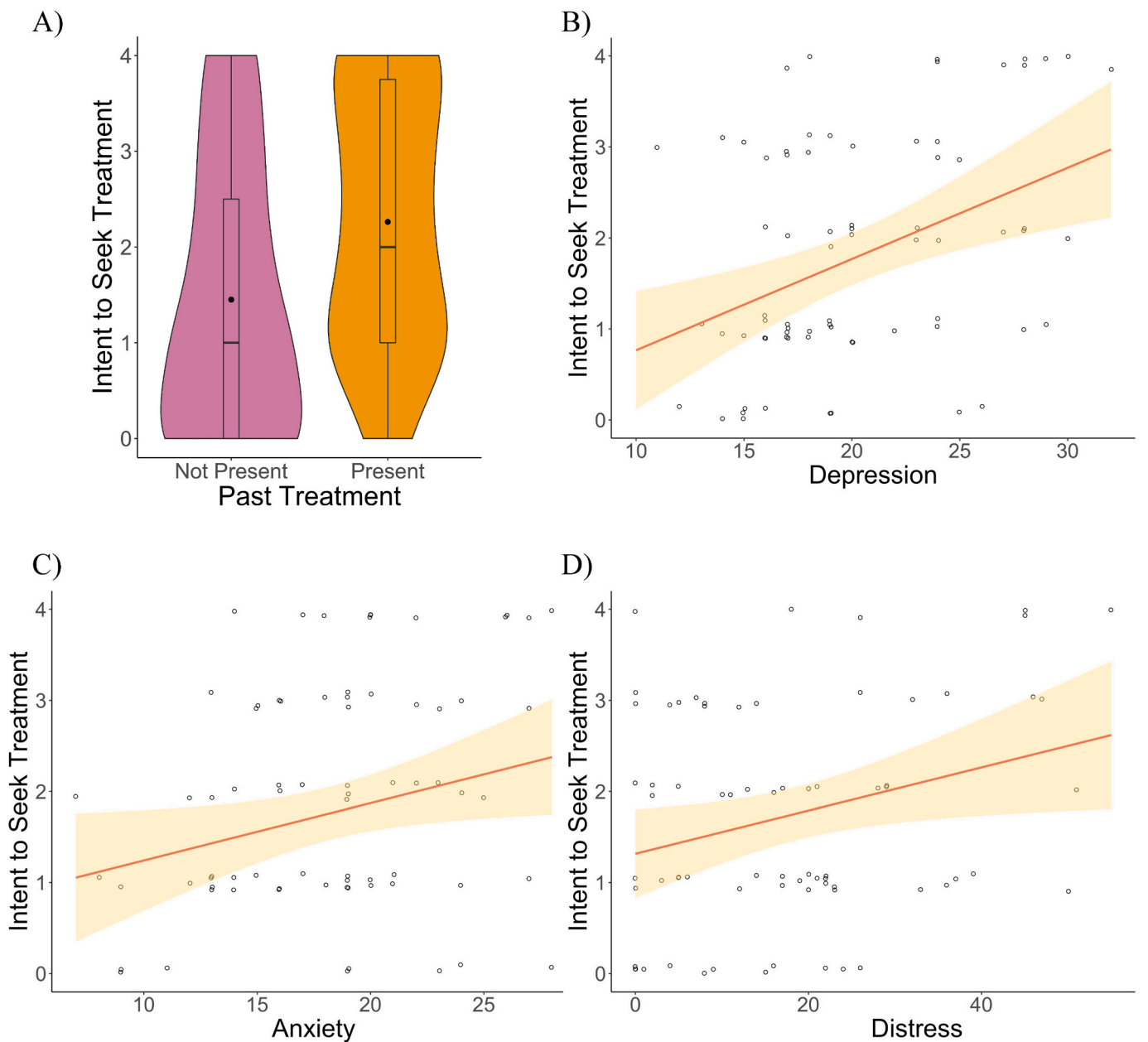


Fig. 3. (A) Relation between past psychiatric treatment utilization and current intent to seek treatment. (B) Higher depression scores predicted greater intent to seek treatment. (C) Higher anxiety scores predicted greater intent to seek treatment. (D) Higher distress ratings predict greater intent to seek treatment.

Table 2
Multiple regression with group and predictors of intent to seek treatment.

	Estimate	Std. error	t-Value	p-Value
(Intercept)	0.300	0.529	0.567	0.572
Group (CHR) ^a	-1.032	0.293	-3.526	0.001
Past treatment (present) ^b	-0.021	0.305	-0.068	0.946
Depression	0.076	0.024	3.167	0.002
Anxiety	0.032	0.023	1.364	0.175
Distress	0.003	0.009	0.310	0.757
Group (CHR) × past treatment (present)	0.953	0.412	2.312	0.022

Bolded values indicate a statistically significant result.

^a Group is either CHR or MD, with MD as the reference group.

^b Past treatment consists of Present and Not Present, with Not Present as the reference.

driven by the fact that clinically significant distress or functional impairment is a diagnostic requirement for a mood disorder diagnosis. Additional contributing factors may also include the lower levels of stigma related to mood disorders in comparison to psychosis as well as more psychoeducation and health literacy on early symptoms of mood disorders compared to psychosis (Angermeyer and Matschinger, 2003; Crisp et al., 2005; Reavley and Jorm, 2011; Svensson and Hansson, 2016). Unlike for mood disorders, distress is not necessarily required to meet criteria for a CHR syndrome according to the SIPS. Thus, there may be individuals who meet criteria for a CHR syndrome who are not sufficiently distressed by their symptoms to seek treatment. This, combined with our finding that distress predicts intent to seek treatment, may contribute to why, on average, those at CHR report lower intent to seek treatment than those with MD.

Our findings show that previous treatment, depression, anxiety, and distress related to attenuated positive symptoms predicted intent to seek treatment in those at CHR when examined separately, though only

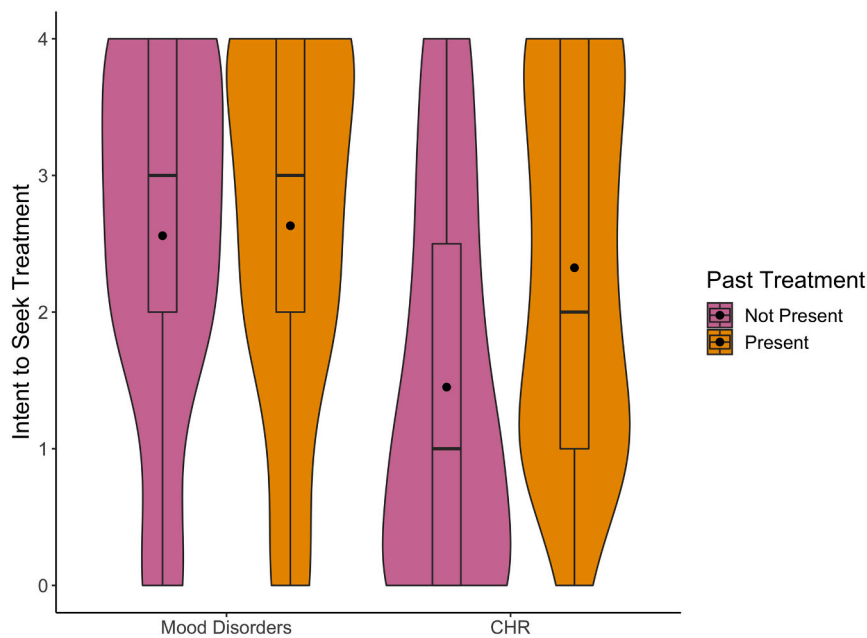


Fig. 4. Interaction between group and past treatment. A multiple regression revealed a significant interaction between group and past treatment such that those in the CHR group who previously engaged in treatment reported higher intent to seek treatment than those who did not.

depression survived correction for multiple comparisons. Evidence from the psychosis literature suggests that the finding of higher intent to seek treatment in those who had previous treatment might be explained by having positive experiences with past psychiatric treatment. A study of individuals in their first episode of psychosis found that interpersonal connections and good quality of care were the most commonly reported factors that shortened pathways to care (Cabassa et al., 2018). It may be that positive interpersonal connections can provide emotional support and enhance trust and high quality of care, which may lead to a reduction of symptoms and restoration of functioning (Cabassa et al., 2018). These factors may be particularly impactful for the CHR population given that impairment in social and role functioning is common in the prodrome and social functioning is predictive of conversion to psychosis (Carrión et al., 2013; Gee and Cannon, 2011; Jang et al., 2011). It is possible that if those at CHR who previously sought psychiatric treatment had positive experiences with this care, they may have experienced improvements in their ability to build trust and relationships as well as a reduction in their symptoms, thus driving them to intend to seek treatment again. Our findings that depression and anxiety predict intent to seek treatment is also supported by previous studies showing that these symptoms are the most commonly reported reasons to seek psychiatric treatment in this population and are associated with persistent service use (Falkenberg et al., 2015; Lindgren, 2019; Platz et al., 2006). Our finding that positive symptom distress predicts intent to seek treatment is consistent with a study that found that lower levels of distress related to unusual thought content are associated with delays in seeking help (Chung et al., 2010). This suggests that less distressing positive symptoms may not be enough to motivate an individual to seek treatment. Notably, the severity of attenuated positive symptoms did not predict intent to seek treatment in our study, potentially because the positive symptoms alone are not bothersome enough to lead individuals to seek treatment. Our findings that distress from positive symptoms, but not positive symptoms themselves, predict intent to seek treatment in those at CHR suggests that individuals in this population are seeking treatment for reasons outside of the core CHR construct.

In our final aim, we found that depression and previous psychiatric treatment utilization predict intent to seek treatment. Specifically, we saw that greater depression severity predicts higher intent to seek treatment in both CHR and MD groups. This underscores the large

impact of depressive symptoms in motivating individuals to seek treatment. Although anxiety and positive symptoms distress independently predicted intent to seek treatment, they were no longer significant when they were added to a model with group status, past treatment, and depression. This suggests that the effect of anxiety and distress observed independently is better explained by depression and previous psychiatric treatment, and therefore may not be the root cause of intent to seek treatment. Further, previous treatment is only an indicator of intent to seek treatment in those at CHR and not in those with a MD, as individuals with MD intend to seek treatment regardless of engagement with past treatment. One possible reason for this is stigma. Psychotic disorders are among the most stigmatized disorders and are often associated with the most negative stereotypes compared to depressive and anxiety disorders (Angermeyer and Matschinger, 2003; Crisp et al., 2005; Crisp et al., 2000; Pescosolido et al., 2019; Svensson and Hansson, 2016; Wood et al., 2014). Previous studies have shown that those at CHR for psychosis also experience stigmatization for their symptoms and it can be a barrier towards seeking treatment (Boydell et al., 2013; Uttinger et al., 2018; Welsh and Tiffin, 2012). However, once they seek psychiatric treatment, there is a reduction in stress and stigma (Uttinger et al., 2018; Welsh and Tiffin, 2012), as well as knowledge that treatment is helpful. It may be that stigma plays a larger role in delaying seeking treatment in those at CHR than it does in those with MD. Another possible explanation of the past treatment by group interaction is that mood disorders are so distressing and impairing that individuals have high intent to seek treatment regardless of whether they were previously in treatment, despite any hesitations from stigma or other causes.

This study has several limitations. The sample primarily consists of those assigned female at birth, which may limit the generalizability of our findings. Future studies should examine the association between intent to seek treatment, deficits in role functioning, and stigma in those at CHR. We were unable to examine the longitudinal relationship between intent to seek treatment and actual help-seeking behavior, so we are unable to comment on whether these factors predict future treatment utilization. We also did not have information on the self-reported reasons why individuals intend to seek treatment or what type of treatment they might seek. Future studies should consider longitudinal designs and consider evaluating the type of treatment individuals might

seek and the symptoms for which they might seek treatment to bridge the gap between intent to seek treatment and help-seeking behavior. A subset of the participants self-reported on the TRHQ that they were not receiving or did not recently receive any type of mental health care, but later reported psychiatric medication use during the clinical interview. These participants might not have considered their more passive mental health care as current psychiatric treatment. This study was not designed to compare those at CHR to others on the psychosis spectrum, however future studies should compare these groups to delineate the differences in help seeking behavior and attitudes towards treatment along the psychosis spectrum. Overall, current literature suggests that there is unmet need for care in those at CHR. Our findings suggest that depression severity and past treatment utilization may be critical factors for why individuals at CHR intend to seek treatment. Therefore, these factors may potentially serve as important targets for engaging this population in treatment. Further, these results highlight the need for finding ways to engage CHR individuals in treatment specifically for their attenuated symptoms and other related factors.

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Author statement

All authors (GH, DNP, MAB, JS, LME, VAM) have contributed to the development of this project and approve its publication.

CRedit authorship contribution statement

Gillian Ho: Conceptualization, Formal analysis, Investigation, Methodology, Visualization, Writing – original draft. **Danielle N. Pratt:** Conceptualization, Formal analysis, Investigation, Methodology, Supervision, Visualization, Writing – original draft, Writing – review & editing. **Miranda A. Bridgwater:** Investigation, Methodology, Writing – review & editing. **Jason Schiffman:** Conceptualization, Funding acquisition, Investigation, Project administration, Resources, Writing – review & editing. **Lauren M. Ellman:** Conceptualization, Funding acquisition, Investigation, Project administration, Resources, Writing – review & editing. **Vijay A. Mittal:** Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Writing – review & editing.

Declaration of competing interest

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.schres.2024.03.047>.

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