Introduction

Psychosis is a severe mental illness that affects a small percentage of the population, with global lifetime prevalence estimates of 7.49 per 1,000 persons (Moreno-Küstner et al., 2018). Despite its overall low prevalence, psychosis is a major public health concern largely due to delayed initiation of mental health care. In the United States, the median duration of untreated psychosis to initiation of first-episode psychosis programs is 74 weeks (nearly 1.5 years) (Addington et al., 2015). Prolonged untreated symptoms of psychosis can lead to greater symptom severity, a lower likelihood of remission, poor treatment response, and diminished social functioning (Drake et al., 2020; Fresan et al., 2020; Penttilä et al., 2014). Early intervention and continued service provision play a crucial role in improving health outcomes and quality of life for individuals with psychosis (Chan et al., 2019; Correll et al., 2018). With the onset of psychosis typically emerging in young adulthood, and with evidence showing that early intervention leads to better health outcomes (Correll et al., 2018; Salazar de Pablo et al., 2024; Solmi et al., 2022), understanding help-seeking behaviors and mental health service use among young adults with psychosis is a key priority.

There is substantial evidence linking medication non-adherence to high relapse rates in people experiencing psychosis, a major clinical concern in this population (Caseiro et al., 2012; Robinson et al., 1999). Medication non-adherence is linked to increased emergency room visits, prolonged hospital stays, higher risks of suicidal ideation, and greater risk of relapse (Caseiro et al., 2012; Goff et al., 2010; Higashi et al., 2013). While the existing literature highlights poor outcomes and high relapse rates associated with low treatment adherence in individuals diagnosed with psychosis, there is a research gap in understanding the factors, such as informal

supports, that influence help-seeking behaviors and mental health service utilization (Oliver et al., 2018; Smolak et al., 2013).

Early intervention services reduce the risk of treatment discontinuation and psychiatric hospitalization while improving outcomes related to overall quality of life, school or work involvement, symptom severity, and employment rates and relapse rates (Correll et al., 2018; Salazar de Pablo et al., 2024). The efficacy of treatment when initiated early and adhered to for individuals with psychosis motivates a need to examine factors that encourage treatment initiation (Kelebie et al., 2025). Examining formal and informal health services utilization is especially important for the nearly 15 million college students in U.S. higher education (National Center for Education Statistics, 2022). This is particularly crucial as the traditional college years are characterized by young adults' increasing independence in their health decision-making, including their use of health services. The traditional college years are an epidemiologically vulnerable time that coincides with the onset of many mental illnesses, including psychosis (Solmi et al., 2022). The average age of onset of psychosis (20.5 years) raises important questions about how U.S. college students with a diagnosis of psychosis access and navigate mental health services (Solmi et al., 2022). Many U.S. higher education institutions have rich resources to promote student well-being through organized social activities, counseling, peer support services, and or referrals (Downs et al., 2018; Lipson et al., 2016). Exploring how college students diagnosed with psychosis engage with formal and informal mental health supports can help identify patterns of service utilization and elucidate opportunities for potential earlier intervention to improve psychosis outcomes.

This study seeks to examine the perceptions, beliefs, and attitudes that inhibit or facilitate formal service use and informal engagement (from friends, loved ones, roommates, campus staff,

religious counselors, or support groups) among college students with a diagnosis of psychosis. Addressing the major knowledge gaps in mental health service utilization is a crucial first step toward reducing treatment delays that can improve outcomes for individuals with psychosis.

Methods

Data Source and Participants

This study utilizes the national Healthy Minds Study (HMS) cross-sectional data from 2015 to 2024 to examine mental health help-seeking among college students with a diagnosis of psychosis. HMS is an annual web-based survey that collects demographic information, assesses mental health status, and measures help-seeking behaviors among U.S. college students. All postsecondary institutions in the United States are eligible to participate in the HMS. From each participating university, students are randomly invited to complete HMS. Students are over 18 years old and consent to complete the survey, which is collected via Qualtrics and is IRB-approved. The response rates among students by survey year were as follows: 23% (2015), 27% (2016), 23% (2017) 16% (2018), 16% (2019), 14% (Fall 2020), 13% (Winter 2020), 15% (2021), 12% (2022), 9% (2023), and 9% (2024). As described below, survey nonresponse rates were applied to address some limitations related to response rates. Previous research has published extensively on HMS data collection methods (Lipson et al., 2022).

Diagnosis of psychosis was determined by the HMS survey item, *"Have you ever been diagnosed with any of the following conditions by a health professional?" (Select all that apply).* Students were included in the sample if they selected the response option "Psychosis".

Measures

Primary Outcomes

Formal mental health service utilization was categorized as participants engaging in therapy and/or antipsychotic medication in the past 12 months. Therapy utilization in the past 12 months was determined by the survey item *"How many total visits or sessions for counseling or therapy have you had in the past 12 months?"*. If students indicated that they had at least one therapy or counseling session in the past 12 months, then they were classified as 'yes' for therapy/counseling use, and if they did not, they were classified as 'no'. Antipsychotic medication use was measured by the survey item "*In the past 12 months, have you taken any of the following types of prescription medications?*" *(Select all that apply)*. If students selected "Antipsychotics," then they were classified as 'yes' for medication use, and if they did not, they were classified as 'no'. Students were classified as 'yes' for formal service use if they had taken antipsychotic medication and/or attended therapy or counseling in the past 12 months; otherwise, they were classified as 'no'. Antipsychotic and therapy/counseling use in the past 12 months were also assessed as independent outcomes, but only among help seekers who engaged in formal service use due to survey skip logic.

Informal support engagement was determined by the survey question, "*In the past 12 months, have you received support for your mental or emotional health from any of the following sources?*" *(Select all that apply)*. Students were able to select "Roommate", "Friend", "Significant other", "Family member", "Religious counselor or other religious contact", "Support group", or "Other non-clinical sources, such as professor or staff member". If any of those response options were selected, students were assigned a 'yes' to indicate informal support engagement, which was coded as a binary yes/no variable.

Predictors

Reasons for seeking help were measured by the item, "*Earlier in this survey, you reported that you have taken medication and/or received counseling/therapy in the past 12 months for your mental or emotional health. Which of the following are important reasons why you received those services*?". Students could select all that apply from the following reasons or factors that led them to seek care: "Self-initiated", "Encouragement from family members", "Pressure from family members", "Encouragement from friends", "Pressure from friends", "Mandated or referred by a campus advisor", "Someone other than a family member or friend, such as a health professional recommended or referred me to seek help", and/or "Other".

Perceived need for help was captured by survey item "*How much do you agree with the following statement? In the past 12 months, I needed help for emotional or mental health problems or challenges such as feeling sad, blue, anxious or nervous*". Students were able to select "Strongly agree", "Agree", "Somewhat agree", "Somewhat disagree", "Disagree", or "Strongly disagree". Responses were coded numerically from 1 ("Strongly agree") to 6 ("Strongly disagree").

Perception of how helpful medication is was determined by the item "*How helpful on average do you think the medication would be for you if you were having mental or emotional health problems*?". Students could select "Very helpful", "Helpful", "Somewhat helpful", or "Not helpful". Responses were coded numerically from 1 ("Very helpful") to 4 ("Not helpful").

Perception of how helpful therapy or counseling was measured by the item "*How helpful on average do you think therapy or counseling would be for you if you were having mental or emotional health problems?*. Students could select "Very helpful", "Helpful", "Somewhat

helpful", or "Not helpful". Responses were coded numerically from 1 ("Very helpful") to 4 ("Not helpful").

Statistical Analysis

Using administrative data provided to the HMS team, survey non-response weights were applied to all analyses to account for the higher female response rate than males to more accurately represent each university's female-male ratio. The weighted percent of participants' age category, sex at birth, race, reasons for seeking help, perceived need for help, antipsychotic medication utilization in the past 12 months, therapy utilization in the past 12 months, perception of how helpful medication is, perception of how helpful therapy is, and survey year were examined by the total participant sample, formal, informal service use engagement, and no utilization in both formal and informal services.

While some individuals may have used both formal and informal supports, the primary focus of the analysis was to examine two sets of independent binary comparisons (1) students with a diagnosis of psychosis who report/do not report formal service use, and (2) students with a diagnosis of psychosis who report/do not report informal supports, rather than mutually exclusive service categories (e.g., informal only, formal only, both, or neither). Logistic regression models with coefficients exponentiated to adjusted odds ratios (aOR) were used to assess the probability of formal service use and informal engagement in students with a diagnosis of psychosis. Logistic regression models were also used to estimate aORs for antipsychotic and therapy/counseling engagement among help-seeking students who used formal mental health services. Predictors were chosen based on prior literature indicating a research gap on promotive factors improving medication and treatment adherence, low service utilization, and poor

perception of treatment effectiveness in this population (Curto et al., 2021). All models were adjusted for sex at birth (male and female), race (White, Asian, Hispanic/Latin(x), African American/ Black, or Other) and age categories (18-21, 22-25, 26-30, 31+). Analyses used a complete case approach, such that students with missing data on any variable included in the models were excluded from that analysis. All analyses were conducted using RStudio version 4.4.2.

Results

[Insert Table 1. Here]

Characteristics of the Sample (Table 1)

Our analytic sample included 2,819 students from 665 colleges and universities. Of all students with psychosis, 81.9% reported engaging with formal service use, 76.7% reported engaging with informal supports, and 6% reported engagement in neither. Within this sample, just under half were between 18 and 21 years of age (43.1%), slightly over half were male (52.2%), and nearly six-in-ten were white (57.8%). Complete demographic data by formal and informal service-use engagement are reported in Table 1.

Characteristics Related to Service Utilization

Within the last 12 months, 44.3% of students with a history of psychosis used antipsychotic medications and 82.4% engaged in therapy or counseling in the past 12 months. A total of 39.6% of students reported engaging in both antipsychotic medication and therapy or counseling in the past 12 months. Of students who reported informal support engagement, 11.9% of students did not have any formal service use in the past 12 months.

Among students engaged in formal services, 67.5% of students reported self-initiating or deciding to seek help on their own as an important reason for seeking medication and/or therapy/counseling. A majority (59%) of students with a diagnosis of psychosis strongly agreed that they needed help for emotional or mental health problems in the past 12 months. Most students (62.2%) believed that medication would be very helpful (34.0%) or helpful (28.2%), compared to somewhat helpful (19.4.%) or not helpful (18.4%) for their mental health. Similarly, a majority of students with a diagnosis of psychosis strongly agreed (50.7%) or agreed (26.6%) that therapy or counseling would be very helpful for them if they were having mental or emotional health problems, while a minority (15.1%) disagreed or (7.6%) strongly disagreed. A complete description of student characteristics related to service utilization is reported in Table 1.

*Multivariable Results f*or *Formal Service Use Utilization (Table 2)*

[Insert Table 2. Here]

Perceptions of need were strongly correlated with formal mental health service use among students with psychosis. Relative to students who strongly agreed that they needed help for their mental health, students who agreed that they needed help had 47% lower odds of engaging in formal service use (aOR=0.53, 95% CI 0.32–0.86) while students who somewhat agreed that they needed help had 63% lower odds of formal service use (aOR=0.37, 95% CI 0.22–0.63). Relative to students who strongly agreed that they needed help for their mental health, students who somewhat disagreed (aOR=0.14, 95% CI 0.07–0.29) or disagreed (aOR=0.14, 95% CI 0.07–0.28) had 86% lower odds of formal service use engagement. Compared to students who strongly agreed that they needed help for their mental health, students who strongly disagreed had 70% lower odds of formal service use engagement (aOR=0.30, 95%

CI 0.15–0.60).

Student perceptions of how helpful medication would be for them was significantly associated with formal service use. Compared to students who believed medication would be very helpful for their mental health, students who believed medication would not be helpful had 83% lower odds of engaging in formal services (aOR=0.17, 95% CI: 0.09–0.31).

Similarly, student perceptions of how helpful therapy would be for them was associated with engagement in formal service use. Relative to students who believed that therapy would be very helpful for their mental health, students who identified therapy as not helpful for their mental health had 69% lower odds of engaging in formal service (aOR=0.31, 95% CI 0.15–0.62).

Multivariable Results for Types of Supports Associated with Past-Year Antipsychotic Medication and Therapy/Counseling Utilization Among Students Engaged in Formal Service Use (Table 3)

[Insert Table 3 Here]

Among help-seeking students engaged in formal services, encouragement from someone other than a friend or family member (such as a health professional) to seek help for mental health was also associated with antipsychotic use in the past 12 months. Relative to those who did not receive encouragement from someone other than a friend or family member, students who received encouragement to seek help (from someone other than a friend or family member, such as a health professional) had 1.49 times higher odds of taking antipsychotic medication in the past 12 months (95% CI 1.01–2.20). Encouragement from a friend to seek help for mental health was associated with therapy/counseling in the past 12 months. Relative to those who did

not receive encouragement from friends to seek help, students who did had 4.89 times higher odds of therapy/counseling engagement in the past 12 months (95% CI 1.03– 23.1).

Multivariable Results for Informal Service Use Utilization (Table 2)

Perceived need for help was associated with informal service use. Relative to students who strongly agreed that they needed help for emotional or mental health problems or challenges, students who somewhat agreed had 41% lower odds of engaging in informal supports (aOR= 0.59, 95% CI 0.35–0.99). Similarly, relative to students who strongly agreed to needing help for their mental health, students who somewhat disagreed had 57% lower odds of engaging in informal support (aOR=0.43, 95% CI 0.22–0.87). Student perceptions of how helpful medication or therapy would be for their mental health was not associated with engagement in informal service use.

Discussion

This study examined the reasons why students with a diagnosis of psychosis seek help, their perceived need for help, and their perception of how effective medication and or therapy would be for their mental health, as predictors of formal service and informal support engagement using national HMS data from 2015-2024. This is the largest known study of formal and informal service utilization in students with a diagnosis of psychosis. The help-seeking behaviors of individuals with psychosis remains largely underexplored in the existing literature, particularly with larger samples.

This study of 2,819 students diagnosed with psychosis found that four-in-ten students report taking an antipsychotic medication in the past 12 months and eight-in-ten report utilizing

counseling/therapy in the past 12 months, reflecting high rates of mental health service utilization. A total of four-in-ten students engaged in both antipsychotic medication and counseling/therapy in the past 12 months. This means—six-in-ten students are not meeting the recommended combination of both pharmacological and psychosocial treatment standard of care guidelines (American Psychiatric Association, 2020). Negative perceptions of how helpful medication and or therapy/counseling would be for mental health was associated with significantly lower odds of engagement in formal service use. Knowledge of symptoms, as well as the efficacy of medication and therapy or counseling to promote treatment seeking, could be targeted through psychoeducation, but needs to be further explored (Herrera et al., 2023).

Studies have been able to capture antipsychotic prescribing trends in claims data (Li et al., 2023; Huang et al., 2018), but often fail to capture or take into account medication non-adherence rates which can be as high as 60% in this population (Offord et al., 2013), making the student self-reported medication and therapy or counseling in the past 12 months a unique comparator to prior research. Despite the high rates of medication non-adherence (Offord et al., 2013) and the strong engagement of therapy or counseling in the past 12 months, there remains an underutilized potential to leverage therapeutic interventions within this population. Roughly four-in-five students with psychosis agreed that they needed help for emotional or mental health problems in the past 12 months. This further underscores a potentially unmet need in this population and highlights an opportunity to employ therapeutic interventions that are highly receptive in this population. More than three-in-four students with psychosis strongly agreed or agreed that therapy or counseling would be very helpful for them if they were having mental or emotional health problems. Universities and clinicians alike can continue to capitalize on this population's acceptability and strong engagement towards therapeutic interventions, which have

been shown to reduce relapse, improve quality of life, and psychotic symptoms (Lutgens et al., 2017; Solmi et al., 2023; Yildiz, 2020).

Mental health outcomes and service engagement are poorly understood when treatment is self-initiated, encouraged, vs mandated in individuals with psychosis. Overall, we found that those who are encouraged by friends or health professionals versus pressured or mandated as primary reasons for seeking help have higher odds of antipsychotic and or therapy/counseling use. This is an important implication given the institutionalization of mental illness that can result in mandated treatment (Plahouras et al., 2020). Support systems, such as friends, play a crucial role in identifying early psychosis symptoms and help navigate mental health services, which may be an important factor in treatment initiation (Causier et al., 2024; Harandi et al., 2017; Topor et al., 2006). Future research, particularly longitudinal studies, should explore the long-term outcomes of therapy and antipsychotic engagement in individuals who are encouraged, pressured, or mandated to treatment.

We found that lack of perceived need for help was associated with significantly lower odds of formal service use in this sample. While acknowledgment or insight of mental illness may affect treatment-seeking and adherence (Lincoln et al., 2007), frameworks such as subjective illness theory and self-determination theory can help illuminate the help-seeking behaviors among individuals with psychosis. Subjective illness theory emphasizes how individuals diagnosed with psychosis view their illness, including its attributed cause, and outlook of prognosis differently based on environmental or personally held beliefs to cope or make meaning of their illness, which can affect how individuals engage with services (Holzinger et al., 2002). Other models, such as self-determination theory, stress the importance of an

individual's motivation, which influences treatment-seeking behaviors (Jochems et al., 2017). While frameworks may provide some insight into treatment-seeking, future scholarship should continue to refine frameworks that elucidate treatment-seeking behaviors, which is crucial due to the severely delayed initiation of care in individuals with psychosis (Addington et al., 2015; Penttilä et al., 2014).

The present study also examined the informal supports of students as an important resource affecting outcomes that is often not quantified or measured in studies. We found that the perceived need for help was also associated with informal engagement. Relative to students that strongly agreed that they needed help for emotional or mental health challenges, students who somewhat agreed or disagreed had significantly lower odds of engaging in informal supports. Support from friends, family, significant others, religious counselors, support groups, or campus may play a key role in supporting students' overall well-being as well as treatment initiation. Informal supports, such as religious or spiritual healers, are often the first initial source of help in the initiation of symptoms, and are well accepted within this population (Huguelet et al., 2011; Smolak et al., 2013). In college and university settings, informal services and supports often come in the form of peer (i.e., student-to-student) or support groups. Peer support services promote positive vocational outcomes in first-episode psychosis programs, including higher odds of finding employment or enrolling in education (Alvarez-Jimenez et al., 2021).

Even though this is the largest study of formal service and informal support engagement in students with psychosis, this study has limitations. While this study draws on national data from 2015 to 2024, this is a cross-sectional study and students were not followed over time. We therefore cannot establish causality. With these survey data, it is not possible to determine the

severity of their condition or whether students experienced multiple episodes of psychosis, a common attribute of the condition that may affect formal service and informal support engagement (Brown et al., 2020; Caseriro et al., 2012; Robinson et al., 1999). Furthermore, we do not know the quality or intensity of the services students received. While students were randomly invited to complete the survey, students who completed the survey could have inherent characteristic differences between students who completed the survey and those who did not. For instance, because psychosis diagnoses were self-reported, there is an inability to know whether students with psychosis were more or less likely to respond to the survey. Secondly, while this study controlled for student characteristics including race, sex at birth, and age – residual confounding is a concern. For example, important characteristics such as the date of the last psychotic episode were not measured and are therefore missing from the model.

Conclusions

This is the largest known study of formal and informal support engagement in students with a diagnosis of psychosis. Therapy and/or counseling in this population is highly utilized and identified as being helpful for students' mental health if they were having mental health challenges. As a result, therapeutic services on college campuses play an important role as an identified resource to college students with psychosis. Most students also identified that they needed help for emotional or mental health problems in the past 12 months. Psychoeducation could target perceptions of how effective or helpful medication or therapy/counseling is for mental health, which could facilitate help-seeking behaviors for formal and informal support engagement, but needs to be further explored. Lastly, encouragement from friends and or health professionals to seek treatment for mental health may promote help-seeking behaviors. Future

research, particularly longitudinal studies, should try to distinguish the long-term mental health and service engagement outcomes when individuals are encouraged, pressured, or mandated to treatment.

Data

Data is publicly available online at https://healthymindsnetwork.org/research/data-for-researchers/

Conflict of Interest

None to report

Ethical Standard

All data and work contributing to this study comply with relevant national and international ethical standards and are approved by an ethics review board

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