



Patient-Level Factors Associated With Referral Rates to Mental Health Services in a Network of Student-Run Free Clinics: A Pooled Cross-Sectional Study

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Abstract

Background: Student-run free clinics (SRFC) may offer needed mental health care to low income and uninsured populations who may have greater risk of mental illness. To date, there is limited literature assessing what patient-level factors are predictors of referrals to mental health services.

Method: Medical record data came from a SRFC network on patients with depression, anxiety, and/or bipolar disorder (n=1,180). The dependent variable was whether patients received a mental health service referral, defined as an accepted internal referral to the study site's mental health resources or external referral to a community mental health center. We conducted a binary logistic regression model to assess the relationship between various patient-level factors (age, primary language, insurance status, sex, race, ethnicity, and education status) and an accepted mental health referral.

Results: Approximately 65.5% of patients received and accepted a mental health referral. Older patients had higher referral odds while males and high school diploma/vocational/associate degree holders had lower odds. There were no statistically significant differences in the odds of receiving a mental health referral by ethnicity, race, insurance status, or primary language.

Conclusion: Elderly individuals were more likely to be accept referrals for mental health services, whereas male patients or those with a lower educational attainment were less likely to receive and accept such referrals. Future research should examine the role of patient attitudinal factors (e.g., perceived efficacy of mental health services, treatment preferences) and clinician-level factors on referral to mental health services.

Introduction

The mental health crisis continues to be one of the prevailing public health concerns globally.¹ In response, global agencies, such as the World Health Organization, have called for continued development of mental health care systems worldwide.² Within the United States (U.S.), national data from the U.S. Centers for Disease Control and Prevention suggest that approximately 4.5% and 11.3% of the U.S. population in 2020 experienced regular feelings of depression and anxiety, respectively.³ In addition, literature has indicated the coronavirus disease 2019 (COVID-19)

pandemic has been associated with increases in depression and anxiety.⁴ Furthermore, bipolar disorder, characterized by recurring episodes of depression,⁵ has been exacerbated due to the COVID-19 pandemic. Shanahan et al. (2020) demonstrates how lifestyle and financial disruption linked to the pandemic was strongly associated with increased emotional distress, a core trigger of depressive episodes in bipolar disorder.^{6,7} Therefore, in light of the increased prevalence of mental health disorders, there have been marked efforts to expand the availability and use of mental health services (e.g., Web-based

therapies).^{8,9} Unfortunately, these mental health services are still less accessible to many underserved communities, defined by the United States Federal Emergency Management Agency as “groups that have limited or no access to resources or that are otherwise disenfranchised”, in the U.S.¹⁰⁻¹² Social determinants of health (e.g., income status, education status, race/ethnicity, gender, insurance status) can make a community underserved by creating barriers and disparities in access to quality care, which can lead to long-standing health inequalities and poorer health outcomes.¹³

Identifying avenues to mental health care in underserved populations is critical for improving general health outcomes. Untreated mental health disorders can negatively impact multiple components of a patient’s overall health. For example, Scott et al. (2007) found there was an increased risk of physical comorbidities, such as obesity, chronic pain, and heart disease in patients with both anxiety and depression.¹⁴ Screening for mental health conditions is mostly done in traditional settings like primary care offices. Primary care providers are critical for patient screening and for appropriate referral or management, though mental health needs tend to go unrecognized in these settings.^{15,16}

For many underserved patients, safety net organizations, such as student-run free clinics (SRFCs), have become a main source of primary care. These clinics aim to provide free primary care, preventative, and specialist referral services to those in underserved communities where medical and other healthcare trainees can acquire clinical skills.¹⁷ As of 2010, about 30% of SRFCs also provide mental health services.^{18,19} However, there is little literature identifying trends in these mental health services within a free clinic setting. Knoll et al. (2021) found that patients cited transportation and medical symptoms as common barriers to using mental health services.²⁰ To our knowledge, there is no literature analyzing how patient demographics may be associated with referrals to mental health services. This study assesses the association between patient-level factors and receiving and accepting a referral to mental health services in a SRFC setting. These findings may benefit SRFC administrators and clinicians who are designing

interventions to improve health care access among patients from underserved communities.

Methods

We reported this pooled cross-sectional study using the Strengthening the Reporting of Observational Studies guidelines.²¹ The University of Florida’s Institutional Review Board reviewed and approved the protocol (IRB202100274).

Setting and Sample

Our data came from a free clinic network at an academic medical center that is located in North Central Florida. This clinic network consists of four student-run clinics that provide free walk-in and appointment-based primary care services to approximately 2,000 patients annually on select evenings every week.

Our sample consists of all patients diagnosed with depression (International Classification of Disease [ICD-10] codes: F32.9, F33.0, F34.0, F34.1, F43.21, O99.345), anxiety (ICD-10 codes: F40.10, F41.8, F41.9, F43.22), and/or bipolar disorder (ICD-10 codes: F31.81, F31.9) from January 2013 to February 2020. These disorders were selected as they had the highest frequency of diagnosis for mental health disorders at clinic sites. Data reflects the visit where the patient received their first mental health diagnosis at the clinic site along with other existing sociodemographic and medical information. All diagnoses were entered into the clinic’s electronic health record, Practice Fusion, and signed off by an attending preceptor. At the discretion of the diagnosing provider, patients who were diagnosed with any of the aforementioned conditions were eligible to receive a referral to internal mental health services offered by the study sites or by external organizations in the local area. Receiving a “referral” in this study design meant that the patient was offered a referral by the provider and accepted the referral. If the patient refused an offered referral by the provider or was not offered one firstly, this was documented as “no referral”. An example of the study site’s mental health resource that patients can be referred to and participate in is a free therapy night. This service includes free psychotherapy, psychoeducation, and family/marriage counseling run by graduate student therapists under the

Table 1. Sample characteristics (n=1,180)

Variable	Total sample	Received and accepted a mental health referral (n=773)	Did not receive or declined a mental health referral (n=407)	p-value
Age, mean (SD)	40.13 (14.20)	38.89 (14.55)	41.05 (13.94)	
Primary language, n (%) [*]				<0.001
English [†]	1054 (89.3)	697 (66.1)	357 (33.8)	
Non-English	126 (10.7)	76 (60.3)	50 (39.7)	
Insurance status				0.152
Uninsured [‡]	1032 (87.5)	670 (64.9)	362 (35.1)	
Insured [‡]	148 (12.5)	103 (69.6)	45 (30.4)	
Sex				0.062
Female [‡]	744 (63.1)	500 (67.2)	244 (32.8)	
Male	436 (36.9)	273 (62.6)	163 (37.4)	
Race				0.814
White [‡]	885 (75.0)	575 (65.0)	310 (35.0)	
African American/Black	221 (18.7)	148 (67.0)	73 (33.0)	
Other [§]	74 (6.3)	50 (67.6)	24 (32.4)	
Ethnicity				0.018
Non-Hispanic [‡]	1016 (86.1)	678 (66.7)	338 (33.2)	
Hispanic	164 (13.9)	95 (57.9)	69 (42.1)	
Education status				0.012
No high school diploma	146 (12.4)	103 (70.5)	43 (29.5)	
High school graduate/GED	309 (26.2)	175 (56.6)	134 (43.4)	
Some college	338 (28.6)	254 (75.1)	84 (24.9)	
Associate degree or vocational degree	170 (14.4)	93 (54.7)	77 (45.3)	
Bachelor's degree or graduate degree [‡]	217 (18.4)	164 (75.6)	53 (24.4)	

^{*}Percentages may not sum to 100% due to rounding. [†]Reference variable for category. [‡]The insured category consisted of participants who reported having Medicare, Medicaid, Tricare, VA benefits, or private insurance. [§]Due to low cell sizes, patients who were Native American, Asian, Pacific Islander, and Other were grouped into one category named "Other" for the analysis of race.

SD: standard deviation; GED: General Educational Diploma; VA: Veterans Affairs.

supervision of accredited psychologists. Notably, the study site offered no telehealth services during the study period, so all visits were in-person. The sociodemographic data represents self-reported answers from patients' intake questionnaires.

Analytical Variables

The predictive variables included patient-level factors of age, primary language, insurance status, sex, race, ethnicity, and education status. The outcome variable was whether a patient was offered, and accepted, a referral to a mental health service. We defined a mental health service referral as an internal referral to the study site's mental

health resources or an external referral to a community mental health center.

Analytic Approach

Sample characteristics were descriptively reported. We conducted a binary logistic regression model to control for patient-level factors. To determine variable selection for inclusion in the adjusted model, we conducted unpaired t-tests and chi-square tests on each variable. Those who had a p-value of less than 0.10 were included in the adjusted model. For the final model, a p-value of less than 0.05 was interpreted as significant. Observations with missing data for the variables of interest were excluded from analysis. All

Table 2. Adjusted parameter estimates from the binomial logistic regression analysis for the association between patient-level factors and mental health referral received and accepted (n=1,180)

Variable	Odds ratio	95% confidence interval	p-value
Age	1.013	1.003, 1.002	0.007
Primary language			
English*	-	-	-
Non-English	0.697	0.422, 1.149	0.157
Sex			
Female*	-	-	-
Male	0.674	0.512, 0.887	0.005
Ethnicity			
Non-Hispanic*	-	-	-
Hispanic	0.829	0.541, 1.271	0.391
Education status			
No high school diploma	0.670	0.406, 1.106	0.118
High school graduate/GED	0.417	0.283, 0.614	<0.001
Some college	0.926	0.620, 1.383	0.707
Associate degree or vocational degree	0.229	0.146, 0.360	<0.001
Bachelor's degree or graduate degree*	-	-	-

*Reference variable for category.

GED: General Educational Diploma.

analyses were conducted through SPSS software (version 29, IBM, Armonk, NY).

Results

Our sample consisted of 1,180 patients. Approximately 65.5% of patients received and accepted a mental health referral. Most patients were non-Hispanic (86.1%), female (63.1%), with a mean patient age of 40.13 (standard deviation = 14.20). Most patients also reported themselves as primary English speakers (89.3%) and uninsured (87.5%) (Table 1).

Patients of older age had greater odds of receiving and accepting a mental health referral (odds ratio [OR]=1.013; 95% confidence interval [CI]: 1.003, 1.022; p=0.007), such that for each year of age the odds of receiving a mental health referral increased by a factor 1.013 (Table 2). Male patients were at lower odds of receiving and accepting a mental health referral (OR=0.674; 95% CI: 0.512, 0.887; p=0.005) compared to female patients. Those who held a high school diploma/general educational diploma (GED) (OR=0.417; 95% CI: 0.283, 0.614; p<0.001) or an associate or vocational degree (OR=0.229; 95% CI: 0.146, 0.360; p<0.001) had lower odds of receiving

and accepting a mental health referral compared to those with a bachelor's or graduate degree. We found no statistically significant differences in the odds of receiving and accepting a mental health referral by ethnicity, race, insurance status, or primary language.

Discussion

This study identified and quantified correlates of mental health referral rates at a SRFC. Overall, we found patients of older age had greater odds of receiving and accepting a mental health referral, while adults who were male or held a high school diploma/GED, associate degree, or a vocational degree were at lower odds. We did not observe disparities in mental health referrals across primary language, race, ethnicity, and insurance status. We discuss implications for clinical practice below.

This study found that older age was associated with receiving and accepting a mental health referral, which supports dated studies investigating how adult patients' age influences mental health referral rates using U.S. data.²² Data from other U.S. and European studies suggest conflicting results, being attributed to different practice

patterns by health systems or different norms by country in help-seeking behaviors for mental health conditions among older adults.²³⁻²⁶ We also note that some literature on causes and symptomatology of mental health concerns has previously suggested differences between younger and older adults.^{27,28} There is a need for qualitative research to better understand older adults' experiences with mental health services at the study site to determine what may be influencing these higher accepted referral rates.

We found that male patients had lower odds of receiving and accepting a mental health referral. As was the case for age, the literature is sparse with U.S. data and conflicting results have been reported from other countries' data.^{24,25,29,30} Although these differences may be partly explained by differences in health systems or care settings, literature from the U.S. and other European nations have all suggested lower help-seeking behaviors among men compared to women.³¹⁻³³ Lower help-seeking behaviors have been previously shown to negatively influence use of mental health services.^{34,35} Notable reasons for differences in help-seeking behaviors observed among men compared to women include lower mental health literacy,^{34,36} more perceived negative stigma associated with pursuing mental health services,^{35,37} and potential differences in perceived root causes of depression.^{38,39} Conveying mental health symptomatology could be viewed as a constructive step in seeking help. On the other hand, the mentioned reasons that contribute to lower help-seeking behavior may influence acceptance of a referral by the diagnosing provider. Moreover, there could exist an unknown gender bias by providers at our study site that might impact referral patterns for male patients. Additionally, within the SRFC context, studies have suggested about half of the patients were unemployed.^{40,41} However, few free clinics offer social work services despite the amount of unmet social needs expressed among patients.^{42,43} Given that employment concerns may contribute to mental health issues among men more so than women,³⁸ one strategy that SRFC leaders could take is integrating social work services into their care delivery, similar to other SRFCs, or partner with local organizations to connect interested patients with relevant resources (e.g., employment

centers, job training).^{44,45} Further research is needed on effective care delivery models that seamlessly integrate social work services in under-resourced care settings, such as SRFCs.

Lastly, our study shows that patients who had lower educational levels were at lower odds of receiving and accepting a mental health referral. To our knowledge, one other study highlighted that individuals with higher education levels were more likely to be referred to mental health services, independent of income.⁴⁶ The literature suggests that those with decreased educational level may harbor more mental health stigma.⁴⁷ Increased stigma can inhibit these patients from making providers aware of these symptoms. Moreover, trends show a positive association between educational attainment and better mental health outcomes, mostly in reference to depression.^{48,49} Potential mechanisms to explain this may be that higher education can: provide better access to resources to improve mental health, lead to higher paying jobs with autonomy that is associated with more happiness, and contribute to a great internal locus of control, all of which can make it easier to respond to life's stressors.⁵⁰⁻⁵² Our study contributes to the literature by going beyond the association of diagnosis and educational status, revealing that referral rates to mental health services are lower in those same at-risk individuals.

Our findings come with many limitations. First, our data came from one free clinic network, which may not generalize to other care settings. Second, the clinical discussion around the referral remains unknown. Whether the patient refused a referral or the provider neglected to provide one is not reflected through the retrospective design of this study. Groups that had lower odds of receiving and accepting a referral may have actually been offered referrals more often, but were more inclined to deny them, thus being documented as "no referral" despite actually being offered one. Moreover, it is unknown whether a patient was already receiving treatment, whether pharmacological and/or behavioral, from another medical facility at the time of diagnosis. Therefore, it is possible that less referrals were given, impacting the trends observed. Future studies at the clinic site should employ interviews with providers and patients to better understand referral

motivation or refusal. Moreover, the follow-through rate for these referrals is unavailable retrospectively and should be investigated at the study site to determine if these resources are accessed by patients. Thirdly, English proficiency was self-reported by patients. Patients can interpret this question in a variety of ways, e.g. patients may put English even if they feel like they may have low proficiency while a patient who may speak English with fluent proficiency may put another language as their primary language. We grouped all patients reporting a primary language other than English together for the analysis due to low sample size. This may have prevented our ability to detect differences across specific types of languages, such as Spanish and Mandarin. Future research should use more diverse samples to assess these language differences. Fourthly, there may be unmeasured factors (e.g., use of interpreter services, symptom severity) that may affect the likelihood of receiving and accepting a mental health referral. Future research should assess whether the use of an interpreter or involvement of multilingual volunteers/providers are associated with higher referral rates for mental health services. Notwithstanding these limitations, to our knowledge, this is the first study to assess what patient-level factors are associated with referral rates to mental health services in a SRFC setting.

Conclusion

The study found older adults had higher odds of receiving and accepting a referral while male patients or those with a lower education status had lower odds of receiving and accepting a referral. There was no association between patients' reported primary language, race, ethnicity, or insurance status and receiving and accepting a referral for mental health services in a SRFC setting. Additional research is needed to better understand possible motivations and biases of providers for offering and of patients accepting these referrals to mental health services.

Disclosures

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