


Research Article

Mental Illness among Refugee Arrivals: Examining DSM-V Diagnoses Rates, Predictors, and Psychiatric Care Engagement in U.S. Resettlement Programs

Aimee Hilado^{1*} and Melissa Bond²

Abstract

Purpose: This article examines the prevalence of clinically significant mental disorders among 446 newly arrived refugees receiving clinical services through a U.S. Refugee Resettlement organization's mental health program. Of the analytic sample, a subsample of 197 refugees received onsite psychiatric services in the same resettlement program. The paper answers two questions: First, what predicts enrollment in psychiatric care among refugee arrivals identified in resettlement programs? Second, how do refugees receiving psychiatric care navigate other clinical and non-clinical resettlement services? **Methods:** Using logistic regression modeling, the study examined the prevalence of schizophrenia, major depressive disorder, post-traumatic stress disorder (PTSD), generalized anxiety disorder, adjustment disorder, and other covariates that predict psychiatric care enrollment and levels of refugee engagement in clinical and resettlement services broadly. **Results:** Presenting problems of PTSD ($b = 1.094$, $t(371) = 2.94$, $OR = 2.985$, $p = .003$) and schizophrenia ($b = 2.932$, $t(371) = -2.73$, $OR = 18.760$, $p = .006$) were each associated with an increased likelihood of enrollment in psychiatric services. Refugees from African nations ($b = -1.076$, $t(371) = -2.85$, $OR = 0.341$, $p = .005$) were about 66% less likely to be enrolled in psychiatric care than were refugees from the Middle East. Receiving the general adjustment presenting problem flag ($b = -2.569$, $t(371) = -7.09$, $OR = 0.077$, $p < .001$) was also associated with a decreased likelihood of psychiatric care enrollment. **Conclusion:** The findings provide directions for addressing mental illness within resettlement context and considerations for providing psychiatric care to culturally-diverse refugee arrivals.

Keywords: Mental disorders; Psychiatry; Refugees, Resettlement Organizations; Schizophrenia; Post-Traumatic Stress Disorder

Introduction

This article examines the identification of mental disorders among refugee arrivals and the provision of psychiatric care within a refugee resettlement program as opposed to more common specialized mental healthcare settings such as hospital psychiatric units or community health clinics. Using a data from a refugee resettlement program with an embedded mental health program providing onsite psychiatric care, these authors examine the prevalence of clinically-significant mental disorders – specifically, schizophrenia, major depressive disorder, post-traumatic stress disorder (PTSD), generalized anxiety disorder, and adjustment disorder – and other covariates that predict

Affiliation:

¹University of Chicago Crown Family School of Social Work, Policy, and Practice

²Department of Psychiatry and Behavioral Sciences, University of California, San Francisco

*Corresponding author:

Aimee Hilado, University of Chicago, Crown Family School of Social Work, Policy, and Practice.

Citation: Aimee Hilado, Melissa Bond. Mental Illness among Refugee Arrivals: Examining DSM-V Diagnoses Rates, Predictors, and Psychiatric Care Engagement in U.S. Resettlement Programs. *Journal of Psychiatry and Psychiatric Disorders*. 8 (2024): 51-58.

Received: December 28, 2023

Accepted: January 08, 2024

Published: February 13, 2024

enrollment in psychiatric care. The paper also examines levels of engagement in clinical and adjustment services offered within the resettlement program based on diagnosis. Consequently, the study highlights issues of access and barriers to mental healthcare for refugee arrivals and the current mental health-resettlement model's potential in reducing barriers. The study also discusses the potential of leveraging resettlement programs as a pathway to clinical treatment and promoting integration into host communities with a central focus on mental health stabilization.

Background

The literature suggests refugee populations have increased vulnerability to mental health disorders due to a range of factors including: traumatic experiences prior to migration [1,2], length of displacement [3,4], immigration status [5,6,2], deportation risk [7], race-related social exclusion [8], lower perceived social support [9], gender [10,11,12], and age [13,7,14]. Relatedly, the prevalence of schizophrenia with refugees is documented [15, 16, 17]. Rates of comorbidities including major depressive disorder, post-traumatic stress disorder (PTSD), generalized anxiety disorder are also documented in the literature [18, 2, 4]. Such evidence underscores the dimensional, multi-factorial constructs of mental disorders in refugee populations, reflecting the diversity of risk factors that contribute and/or cause significant impairment and the subsequent range of psychopathology presented. Psychiatric and psychopharmacology utilization with refugees. Despite the documented need, psychiatric care utilization rates and preferred treatment approaches within refugee communities are varied. Psychiatric care utilization was lower in refugee and immigrant communities than native-born populations, however, higher utilization rates for those in their resettlement country more than 10 years [5]. Refugees diagnosed with a first-episode of schizophrenia symptoms were less likely to use antipsychotic medication one year after diagnosis than native-born counterparts. However, increased utilization rates were seen in that first-episode group, for those with higher levels of education and previous psychotropic medication use [19]. In other ethnic immigrant/refugee communities, there was a higher preference for seeking treatment from religious authorities and general practitioners rather than traditional mental healthcare experts [20,21]. Strikingly and with few exceptions, refugees were less likely than the majority population to have first contact with psychiatric providers or completing treatment beyond the first contact [10]. Cumulatively, the research suggests barriers to initiating psychiatric care, medication use, and ongoing engagement in treatment among refugee and immigrant communities; findings that have implications for longer-term effects of untreated mental illness on overall functionality and adjustment outcomes particularly for newly arrived communities. The literature also highlights a need for research on alternate approaches to the treatment of mental illness among these target populations and deeper exploration on

symptomatology that influences psychiatric care utilization. Alternate pathways to psychiatric care. Given this context, the current study examines an alternate mental healthcare model that delivers psychiatric care through a community-based resettlement program responsible for overseeing the overall adjustment process for newly arrived refugees in the U.S. It seeks to answer two research questions: First, what predicts enrollment in psychiatric care among refugee arrivals identified in resettlement programs? Second, how do refugees receiving psychiatric care navigate other clinical and non-clinical resettlement services designed to promote mental functioning and adjustment to a new community? Moreover, the study ponders whether embedding psychiatric care in the same program providing housing and employment support changes engagement patterns when a broader range of health and social supports are housed under one roof. The findings will have implications for the role of refugee resettlement programs in addressing clinically significant mental health needs among arrivals as well as program and workforce considerations when seeking to promote mental wellness and adjustment for newcomers simultaneously.

Methods

Research Setting

The study was completed in partnership with a refugee resettlement organization funded through the U.S. Department of State Office of Refugee Resettlement (ORR). The organization was established in 1982 and continues to provide a host of services to aid in the adjustment and integration of forcibly displaced global populations in Chicago, Illinois. ORR-affiliated resettlement programs include comprehensive case management, housing supports, English-language training programs, employment services, and youth programming to help school-age children enroll in school. In 2011, the study site established an in-house mental health program with onsite psychiatric care to address the increasing adjustment distress and mental health problems among refugee newcomers; a program offering relatively uncommon in resettlement programs (Blind for review, 2017). Hereafter, the Wellness Program provided free developmentally appropriate, trauma-informed, and culturally-responsive mental healthcare and clinical case management services as part of core resettlement services at no cost to arrivals. Mental healthcare services within resettlement context. The Wellness Program's mental healthcare model included screening all arrivals within 45-60 days upon arrival for mental health problems commonly associated with migration trauma including questions related to depression, anxiety, post-traumatic stress disorder, psychosis, substance use, and somatic symptoms (Blind for review, 2017). Arrivals who screened positive for needs were offered non-compulsory mental health supports. Refugee arrivals could also be referred by other program staff at which time they would be screened again for services.

Accompaniment and clinical interventions were offered based on the level of need presented in the screener or clinical interview (Blind for review, 2017). Mental healthcare options included medical case management, psychoeducation sessions, home visitation, individual therapy, group therapy for children and youth arrivals. These same services plus psychiatric care were available to adults. In-person and phone interpretation were provided at no cost as needed often by trained resettlement staff who served as cultural-brokers in addition to medical interpreters (Blind for review, 2017). Removing barriers: Onsite psychiatric services. The availability of onsite psychiatric care within a refugee resettlement program was of particular interest to the authors. Psychiatric care services are commonly housed in larger hospitals for shorter, more intensive periods of time [22] or community health clinics providing targeted services [23]. Given the challenges new arrivals have in navigating social service, health, and education systems [24], the provision of specialized mental healthcare (including psychiatric care) adjacent to general adjustment services seemed to be the necessary model for removing barriers and increasing access to mental healthcare given all services were provided under one roof. Moreover, the service delivery model addresses fears of engaging with unknown providers - a common fear of identification for newcomers [25, 26] - given the stronger provider affiliation.

Participants

Participants were part of a larger dataset who received “refugee” status through an initial application with a United Nations High Commissioner for Refugees (UNHCR) Processing Center followed by extensive vetting through the U.S. Department of State and other federal agencies prior to U.S. admissions. Study participants entered the U.S. with an I-94 refugee visa, an immigration status that has a pathway to U.S. citizenship and includes a host of public benefits including employment authorization, medical insurance, and temporary refugee cash assistance. Arrivals with refugee status are assigned to an ORR-affiliated refugee resettlement program where they receive a host of adjustment services as noted. The study sample includes refugees who arrived between 2011 and 2021 and who were assigned to the study site.

This larger sample contains 3,354 adults (i.e., 18 years of age or older) and 473 refugees within this sample were enrolled into a Wellness Program to receive clinical therapeutic services (described below). Of the 473 refugees who received therapy services, a large majority (94.3%) came from Middle Eastern, Asian, or African countries. Although a small number of refugees from European or Latin American countries enrolled in therapy services, they were excluded from the present sample, as their numbers were too small to make accurate conclusions. The final analytic sample contains 446 refugees (M_{age} = 37.6, SD = 12.5) representing

19 different nationalities from the Middle East, Asia, and Africa. Complete demographics are included in Table 1.

Measures

Prior to U.S. Refugee Admissions, the U.S. Department of State transmits comprehensive biodata on each refugee arrival to their assigned refugee resettlement program. This study uses de-identified secondary data from the research site/resettlement agency’s primary database housing demographic and administrative data for all participants receiving a broad range of agency services including case management, employment services, English-language training, and housing services from 2011-2021. Additionally, de-identified data was also sourced from the Wellness Program (mental health program) at the research site. De-identified secondary data from the HIPAA-compliant data platform included treatment data for participants receiving mental healthcare services such as mental health screener results, presenting mental health problems, treatment modality (individual, group, psychiatric services, etc.), and length of treatment. A multifocal project using this current site’s two data sources, including the current study, was submitted for IRB review through the primary author’s institution. IRB approval was received prior to the secure transfer of data to the research team for analysis.

Table 1: Demographics of all Arrivals Included in Analysis

Age at Arrival	n = 446
M (SD)	37.6 (12.5)
Case Size	n = 446
M (SD)	3.1 (2.1)
Gender	n = 446
Male	206 (46.2%)
Female	240 (53.8%)
Employed	n = 446
Yes	182 (40.8%)
No	264 (59.2%)
Nationality by Region	n = 446
Africa	134 (30.0%)
Asia	95 (21.3%)
Middle East	217 (48.7%)
Screened	n = 446
Yes	379 (85.0%)
No	67 (15.0%)
Presenting Problem Flags	n = 425
General Adjustment	166 (39.1%)
Family Problems	30 (7.1%)
Depression	62 (14.6%)
Anxiety	41 (9.6%)
PTSD	208 (48.9%)
Psychosis	19 (4.5%)
Enrolled in Psychiatry Services	n = 446
Yes	197 (44.2%)
No	249 (55.8%)

Note: Presenting problem flags are not mutually exclusive.

Demographics included in this study are nationality, gender, age at arrival into the U.S., and case size (i.e., number of household members). Mental health program data included mental health screener results, presenting problems listed as a “flag” in the database, and the type and dosage of mental health services received. Type of service could include, but was not limited to, receiving psychoeducation, medical case management, individual, group therapy, or psychiatric services. Enrollment in psychiatry services was captured by the presence of an initial psychiatric evaluation clinical record, thereby triggering a psychiatric patient designation.

Data Analysis

Enrollment in psychiatry services was entered as the outcome in a logistic regression. Predictors were gender, employment status, case size, age at arrival, nationality, screener completion, and presenting problem. Gender, employment status, and screener completion were dummy coded, such that male gender, employed, and screened were coded as 1, respectively. Nationality was grouped by region (Middle East, Asia, and Africa) and entered into the model as 2 dummy codes, with the Middle East as the reference group. The five most frequently used presenting problem flags, as well as psychosis, were entered into the model as 6 dummy codes, with presence of the flag being coded as 1. As presenting problem flags were not mutually exclusive, no reference group was needed. The logistic regression was run as a nested model, with refugee nested within therapist, to control for possible random effects of the therapist. The model was run using PROC GLIMMIX in SAS 9.4 [27].

Results

Refugees in this sample received an average of 81.8 (SD = 74.2) case notes across an average of 36.0 (SD =

25.8) months within the resettlement program. Within the Wellness Program, refugees were seen for an average of 8.4 (SD = 15.4) psychotherapy appointments at the Wellness Program. The most received presenting problem flags for refugees in the Wellness Program were PTSD (48.9%), general adjustment (39.1%), depression (14.6%), anxiety (9.7%), family problems (7.1%), and psychosis (4.5%). Average case notes and psychotherapy sessions for each presenting problem were as follows: PTSD: 91.6 case notes and 11.1 sessions across 41.4 months; General Adjustment: 61.5 case notes and 4.0 sessions across 27.2 months; Depression: 85.0 case notes and 6.8 sessions across 29.0 months; Anxiety: 74.9 case notes and 10.2 sessions across 28.2 months; Family Problems: 77.7 case notes and 8.2 sessions across 32.4 months; Psychosis: 90.7 case notes and 3.7 sessions across 60.1 months. Of these 446 refugees, 197 (44.2%) were enrolled in in-house psychiatric services. Refugees enrolled in psychiatric services received an average of 93.0 (SD = 71.6) case notes within the resettlement program (i.e., general social support). Psychiatry clients also received an average of 9.9 (SD = 13.7) psychotherapy appointments and 9.7 (SD = 9.0) psychiatry appointments. Clients receiving psychiatry services had an average of 20.1 more resettlement case notes ($t(1,444) = 2.86, p = .004$) and 5.3 more psychotherapy appointments ($t(1,438.9) = 2.00, p = .045$) than did Wellness Program clients who were not receiving psychiatry services.. This smaller sample most often received flags for PTSD (70.1%), depression (13.9%), psychosis (9.1%), anxiety (8.0%), and general adjustment (8.0%). The logistic regression revealed significant effects of nationality and presenting problem on the likelihood of being enrolled in psychiatric services (see Table 2). Specifically, refugees from African ($b = -1.076, t(371) = -2.85, OR = 0.341, p = .005$) nations were about 66% less likely

Table 2: Logistic Regression Predicting Enrollment in Psychiatry Services

Coefficient	Estimate	t value	Odds Ratio
Gender	0.017 [-0.591, 0.558]	-0.06	0.984 [0.554, 1.746]
Case Size	0.067 [-0.079, 0.213]	0.9	1.069 [0.924, 1.238]
Age at Arrival	0.014 [-0.009, 0.037]	1.18	1.014 [0.991, 1.038]
Asian Nat.	-0.712 [-1.445, 0.021]	-1.91	0.491 [0.236, 1.021]
African Nat.	-1.087 [-1.795, -0.378]**	-3.02	0.337 [0.166, 0.685]
General Adjust.	-2.567 [-3.276, -1.857]**	-7.11	0.077 [0.038, 0.156]
Depression	0.0133 [-0.861, 0.888]	0.03	1.013 [0.423, 2.430]
Anxiety	0.998 [-0.020, 2.016]	1.93	2.713 [0.981, 7.507]
Family Problems	-1.045 [-2.316, 0.226]	-1.62	0.352 [0.099, 1.253]
PTSD	1.092 [0.362, 1.822]**	2.94	2.981 [1.437, 6.185]
Psychosis	2.938 [0.836, 5.041]**	2.75	18.887 [2.306, 154.677]
Screener Completed	-0.775 [-1.588, 0.038]	-1.88	0.461 [0.204, 1.038]

Note: Gender was coded as male = 1 and female = 0. Middle Eastern nationality was used as the reference group for nationality factors. Significant effects denoted by * ($p < .05$) and ** ($p < .01$).

to be enrolled in psychiatric services than were refugees from the Middle East. Receiving the general adjustment presenting problem flag ($b = -2.569$, $t(371) = -7.09$, $OR = 0.077$, $p < .001$) was also associated with a decreased likelihood of being enrolled, by about 93%. Presenting problems of PTSD ($b = 1.094$, $t(371) = 2.94$, $OR = 2.985$, $p = .003$) and psychosis ($b = 2.932$, $t(371) = -2.73$, $OR = 18.760$, $p = .006$) were each associated with an increased likelihood of enrollment. PTSD was associated with an almost three-fold increase in one's likelihood, while psychosis was associated with an 18-fold increase.

Discussion

Refugees from African nations. African participants across 11 nations - Central African Republic, Democratic Republic of Congo, Ethiopia, Eritrea, Ivory Coast, Rwanda, Somalia, Togo, Uganda, two unlisted African nations ($n=134$) - were less likely to enroll in psychiatric services despite being flagged for a mental health problem/illness examined in this study. The findings align with past research on engagement in psychiatric services for this community broadly. Mainly, hesitancy in using psychotropic medication while preference for culture-bound methods of healing [20,28]. The finding also aligns with cultural understandings of mental/emotional distress [29] and whether needs require outside intervention like psychiatric services. Another salient consideration is the perspective this sample has towards Western medical professionals and mental healthcare generally; distrust, skepticism, and rejection of Western treatment approaches could also explain this finding [30]. These cultural and even historical factors contribute to the significant differences between utilization rates with other ethnic groups. Refugee participants from the Middle East were the reference group in the analysis who showed higher rates of participation in psychiatric care in comparison to other ethnic groups. Arguably, this finding could relate to shared understanding of psychiatric care, medication use, and greater familiarity with mental health/health terminology and providers among Middle Eastern participants compared to African participants. Greater exposure to Western medicine and treatment approaches may increase engagement, however, exposure alone may not combat historical distrust in non-native approaches to mental healthcare. This is an area warranting additional study.

Diagnosis: General Adjustment Disorder

Wellness Program participants with general adjustment issues were less likely to be enrolled in psychiatric care. General Adjustment Disorder reflects feelings of stress, sadness or hopelessness tied to a stressful event that isn't explained better by a different diagnosis [31]. This diagnosis is often associated with transitional events that can cause short term distress, thus the findings seem to support this idea and the expected disruption it causes to anyone entering,

in the middle of, and/or completing the migratory journey. Though a level of distress and discomfort can be associated with this diagnosis, it doesn't reflect the level of severity or impairment of other diagnoses and can often be addressed with other less intensive clinical services (therapy) and non-clinical supports (psychoeducation, support groups, adjustment services) rather than psychiatric services which often involves medication.

Diagnosis: Post-Traumatic Stress Disorder

Wellness Program participants presenting with PTSD symptoms were three times more likely to be enrolled in psychiatric care irrespective of age, gender, or nationality. These participants were engaged in care for on average 41.4 months and had on average 91.6 case notes across the full resettlement program and 11.1 psychotherapy sessions. This finding aligns with the breadth of literature documenting the prevalence of PTSD among trauma-affected refugee populations [32,33,4]. Moreover, the descriptive profiles of psychiatric service participants with this diagnosis indicate a higher level of need reflected in the longer duration of treatment, the higher number of case notes across the resettlement program, and additional psychotherapy sessions to supplement psychiatric care. This speaks to the longer-term effects of PTSD that resettlement programs must navigate among arrivals including prolonged emotional, psychological, physical distress [34,35] and adjustment difficulties [36].

Diagnosis: Psychotic Disorders (Schizophrenia)

Participants presenting with symptoms aligned with psychotic disorders, primarily schizophrenia, were 18 times more likely to be enrolled in psychiatric care. These participants were engaged in care for on average 60.1 months and had on average 90.7 case notes across the full resettlement program and 3.4 psychotherapy sessions. Parallel to the findings for psychiatric service participants with PTSD, this finding further illustrates the extensive needs of participants with a severe mental illness necessitating diverse clinical and non-clinical resettlement supports. Participants with this diagnosis must navigate the added stressors of stigmatizing beliefs when psychotic symptoms - e.g., delusions, hallucinations, etc. - are left untreated [37, 38, 40].

Literature is available examining the effects of ethnic group and immigration status on mental health help-seeking behaviors preceding a schizophrenia diagnosis [39], which is relevant to the current study. Specifically, immigration status can adversely influence treatment uptake thus informing our first research question on predictors of enrollment in psychiatric care. Moreover, the intersection between mental illness, immigration status, and perceived level of risk of both factors present multidimensional barriers to psychiatric care engagement. This intersection is highlighted in how newly arrived refugees diagnosed with schizophrenia navigate

both clinical and non-clinical resettlement supports that dually focus on mental health functioning and adjustment to a new community; the second focus on this study. To illustrate, the average of 90.7 case notes for participants flagged with schizophrenia as the presenting problem versus the average 61.5 case notes for those flagged with general adjustment problems. The higher contact points for those diagnosed with schizophrenia indicates the increased levels of support necessary for stabilizing health and adjustment. Future studies should examine psychiatric care utilization rates for those with schizophrenia across other immigration statuses - e.g., asylum-seekers, temporary protected status, undocumented, etc. - to further understand predictors of enrollment and engagement beyond participants with refugee status who have legal standing and a pathway to citizenship in the United States. The potential compounding health and functional effects of shaky legal status alongside a severe mental illness warrants examination.

Psychiatric care enrollments. Within the dataset, only 13% of all refugee arrivals resettled between 2011-2021 were enrolled in mental health services. Of that total, nearly half of Wellness Program participants (44.2%) were enrolled in psychiatric care. This finding confirms that many displaced populations do not need intensive mental healthcare services; universal strategies for mental health promotion, education, and social support may be sufficient to assist newcomers in adjusting to life in a new country [41]. Health promotion and prevention strategies can help narrow the total number of people who need specialized mental healthcare. As evidenced in the study, a smaller portion of arrivals needed mental health services including the clinical and non-clinical supports offered in the Wellness Program. The descriptive findings also suggest that there is also a percentage of arrivals who will need acute specialized mental healthcare and who will utilize psychiatric care when available. To that end, the placement of onsite mental healthcare with resettlement programs increases access and likelihood of engagement. Levels of engagement in resettlement services. The study examined the engagement profiles of refugees receiving psychiatric care as a secondary focus. Using the total number of resettlement case notes as a proxy of engagement, refugees enrolled in psychiatric services were more engaged than the general refugee population receiving services during the same time frame. The finding can suggest two explanations: 1) clients receiving psychiatric services had more needs thus using broader resettlement services at a higher rate than others or, 2) clients receiving psychiatric services were better equipped to navigate and effectively use resettlement programming to meet their needs because of the stabilizing effects of treatment. In both cases, the partnership between resettlement organizations and onsite mental healthcare services provided a seamless system of care that demonstrated the potential for promoting adjustment and mental health outcomes simultaneously. While this area is worth further study, both explanations support the notion that an alternate model for

psychiatric care delivery that leverages refugee resettlement programs is one way to decrease barriers.

Limitations

The study captured psychiatric needs among refugee arrivals specific to one resettlement program only. Wellness Program and related psychiatric service enrollments were limited to refugee arrivals assigned to the study site. Though the study site was the largest resettlement program in the area at the time of data collection, referrals from other local resettlement programs were received but could not be served. Other health and resettlement programs may have provided screening and referred refugees to mainstream health providers, presenting another sample that was not included in the current study. Together, the breadth of diversity in mental illness trends across multiple settings is not fully captured in this study; it is possible that refugee arrivals may have accessed psychiatric care elsewhere with symptoms distinct from what was captured in the current study. Additionally, the mental illness categories did not capture the varying degrees of symptomatology that may vary by participants. That is, there are varying presentations for both PTSD and Schizophrenia; the two diagnoses that were statistically significant predictors of enrollment in psychiatric care. Lastly, the diagnoses analyzed across the study reflect the designation provided by the attending psychiatrist and/or licensed clinical staff who conducted a clinical assessment. Though clinical judgments are common in the identification and treatment of mental illnesses, it is a consideration that presenting psychiatric problems were not confirmed using a specific validated instrument.

Conclusion

Threats to physical, mental and emotional wellbeing are commonplace to the narratives of refugees who move for safety and survival. Refugee arrivals require a host of services to adjust to life in a new country including access to a range of mental health supports including specialized mental healthcare like psychiatric services. Access is particularly critical for populations when there is a history of prolonged displacement in inadequate, even harmful environments, that do not address the range of basic healthcare needs; a common reality for refugee communities.

Lessons learned: This study examined the prevalence of mental illness among refugee arrivals identified in their assigned U.S. resettlement program rather than a medical center or other mental healthcare provider. The study illuminated the predictors of psychiatric care enrollments which can inform resettlement programming and the mental health workforce supporting refugee arrivals. Additionally, the study provided preliminary indicators of engagement patterns for refugees with presenting mental health problems; how they navigate clinical services as well as broader adjustment supports offered within the resettlement contexts.

Nested mental healthcare models: Critical to this study was the model for providing psychiatric care. The study site had a nested mental healthcare program that worked in tandem with the broader adjustment services provided by the refugee resettlement program. This increased access to clinical services given all programming was under one roof, minimizing the need to travel or engage with unfamiliar health networks and providers. With permission, relevant information could be fluidly shared across programs to meet the diverse needs of participants receiving psychiatric care within the agency. Moreover, addressing mental health needs and adjustment supports simultaneously provides a holistic pathway for helping refugee arrivals integrate into new communities in a manner that centers health and mental wellness that may have been compromised as part of the refugee experience.

Future research should continue to explore the value in embedding mental healthcare within refugee resettlement and immigrant-serving programs as a mechanism for increasing mental healthcare access to diverse communities who may have greater difficulty in navigating mainstream health services. Future research should also highlight the intersection between immigration status, race/ethnicity, mental illness, and access to care in the U.S. context given the literature on barriers to care. As refugee and other displaced communities continue to resettle in the U.S., we need a resettlement workforce and healthcare system that is prepared to address the diverse adjustment, health and acute mental health needs that may be encountered.

Statements and Declarations

The authors did not receive support from any organization for the submitted work. The authors have no competing interests to declare that are relevant to the content of this article. All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

References

- Golay P, Baumann P S, Jatou L, et al. Migration in patients with early psychosis: a 3-year prospective follow-up study. *Psychiatry Res* 275 (2019): 108-114.
- Hameed S, Sadiq A, Din A U. The increased vulnerability of refugee population to mental health disorders. *Kansas J Med* 11 (2018): 20.
- Eiset A H, Aoun MP, Stougaard M, et al. The association between long-distance migration and PTSD prevalence in Syrian refugees. *BMC Psychiatry* 22 (2022): 363.
- Morina N, Akhtar A, Barth J, et al. Psychiatric disorders in refugees and internally displaced persons after forced displacement: a systematic review. *Frontiers Psychiatry* 9 (2018): 433.
- Björkenstam E, Helgesson M, Norredam M, et al. Differences in psychiatric care utilization between refugees, non-refugee migrants and Swedish-born youth. *Psychol Med* 52 (2022): 1365–1375.
- Henkelmann JR, de Best S, Deckers C, et al. Anxiety, depression and post-traumatic stress disorder in refugees resettling in high-income countries: systematic review and meta-analysis. *BJPsych open* 6 (2022): e68.
- Concepcion Zayas M T, Fortuna L R, Cullins L M. Depression in Latino and Immigrant Refugee Youth: Clinical Opportunities and Considerations. *Child Adolesc Psychiatr Clin N Am* 28 (2019): 483–495.
- Selten J, Van der Ven E, Termorshuizen F. Migration and psychosis: A meta-analysis of incidence studies. *Psychol Med* 50 (2020): 303-313.
- Ahmad F, Othman N, Hynie M, et al. Depression-level symptoms among Syrian refugees: findings from a Canadian longitudinal study. *J Ment Health* 30 (2021): 246-254.
- De Montgomery CJ, Petersen JH, Jervelund S S. Psychiatric healthcare utilisation among refugee adolescents and their peers in Denmark. *Soc Psychiatry Psychiatric Epidemiol* 55 (2020): 1457-1468.
- Hilado A. Organizational practice: Applying the Cultural Mergence Model for working with trauma-exposed populations. In A. Hilado & M. Lundy (Eds). *Models for Practice with Immigrants and Refugees: Collaboration, Cultural Awareness and Integrative Theory*. Thousand Oaks, CA: Sage Publications (2017).
- Poole DN, Hedt-Gauthier B, Liao S, et al. Major depressive disorder prevalence and risk factors among Syrian asylum seekers in Greece. *BMC Public Health* 908 (2018).
- Blackmore R, Boyle J A, Fazel M, et al. The prevalence of mental illness in refugees and asylum seekers: A systematic review and meta-analysis. *PLoS Med* 17 (2020): e1003337.
- Park S, Lee M, Jeon J Y. Factors affecting depressive symptoms among North Korean adolescent refugees residing in South Korea. *Int J Environ Res Public Health* 14 (2017): 912.
- Henssler J, Brandt L, Müller M, et al. Migration and schizophrenia: meta-analysis and explanatory framework. *Eur Arch Psychiatry Clin Neurosci* 270 (2020): 325-335.
- Dapunt J, Kluge U, Heinz A. Risk of psychosis in refugees: a literature review. *Transl Psychiatry* 7 (2017): e1149.
- Manhica H, Hollander A, Almquist Y, et al. Origin and schizophrenia in young refugees and inter-country

- adoptees from Latin America and East Africa in Sweden: A comparative study. *BJPsych Open* 2 (2016): 6-9.
18. Peconga EK, Høgh Thøgersen M. Post-traumatic stress disorder, depression, and anxiety in adult Syrian refugees: What do we know?. *Scandinavian J Public Health* 48 (2020): 677-687.
 19. Spaton Goppers J, Mittendorfer-Rutz E, Cullen A, et al. Antipsychotic treatment patterns in refugees and their Swedish-born peers with first-episode non-affective psychosis: Findings from the REMAIN study. *BJPsych Open* 9 (2023): E57.
 20. Markova V, Sandal G M, Pallesen S. Immigration, acculturation, and preferred help-seeking sources for depression: comparison of five ethnic groups. *BMC Health Services Res* 20 (2020): 1-11.
 21. Grupp F, Moro MR, Nater UM, et al. 'Only God can promise healing.': help-seeking intentions and lay beliefs about cures for post-traumatic stress disorder among Sub-Saharan African asylum seekers in Germany. *Eur J Psychotraumatol* 10 (2019): 1684225.
 22. Glick ID, Sharfstein SS, Schwartz HI. Inpatient psychiatric care in the 21st century: the need for reform (2011).
 23. Bauer AM, Azzone V, Goldman HH, et al. Implementation of collaborative depression management at community-based primary care clinics: an evaluation. *Psychiatric Services* 62 (2011): 1047-1053.
 24. Hilado A, Allweiss S. Physical and mental health stabilization: The importance of wellbeing in the adjustment of new immigrants. In A. Hilado & M. Lundy (Eds). *Models for Practice with Immigrants and Refugees: Collaboration, Cultural Awareness and Integrative Theory*. Thousand Oaks, CA: Sage Publications (2017).
 25. Hilado A, Recnicek E, Allweiss S. Primer on the refugee experience (Chapter 2). In J. Eatton & J. Hwang (Eds). *Refugee Mental Health*. Thousand Oaks, CA: Am Psychol Association (2021).
 26. Allweiss S, Hilado A. The context of migration: Pre-migration, migration and post-migration resettlement experiences. In A. Hilado & M. Lundy (Eds). *Models for Practice with Immigrants and Refugees: Collaboration, Cultural Awareness and Integrative Theory*. Thousand Oaks, CA: Sage Publications (2017).
 27. SAS Institute. SAS documentation [Version 9.4]. Cary, NC: SAS (2015).
 28. Betancourt T S, Khan K T. The mental health of children affected by armed conflict: Protective processes and pathways to resilience. *Int Rev Psychiatry* 20 (2008): 317-328.
 29. Rousseau C, Frounfelker RL. Mental health needs and services for migrants: an overview for primary care providers. *J Travel Med* 26 (2019): tay150.
 30. Saksena J, McMorrow S.. At the intersection of gender and discrimination: Experiences of Congolese refugee women with social and cultural integration in the United States. In *Women's Studies International Forum* 88 (2021) : 102517.
 31. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders* (2013).
 32. Carpinello B. The Mental Health Costs of Armed Conflicts—A Review of Systematic Reviews Conducted on Refugees, Asylum-Seekers and People Living in War Zones. *Int J Environ Res Public Health* 20 (2023): 2840.
 33. Grasser L R. Addressing mental health concerns in refugees and displaced populations: is enough being done?. *Risk Manag Healthc Policy* 15 (2022): 909-922.
 34. Baird M B, Cates R, Bott M J, et al. Assessing the mental health of refugees using the refugee health Screener-15. *Western J Nursing Res* 42 (2020): 910-917.
 35. Stingl M, Knipper M, Hetzger B, et al. Assessing the special need for protection of vulnerable refugees: testing the applicability of a screening method (RHS-15) to detect traumatic disorders in a refugee sample in Germany. *Ethnicity Health* 24 (2019): 897-908.
 36. Kim I. Beyond trauma: Post-resettlement factors and mental health outcomes among Latino and Asian refugees in the United States. *J Immigrant Minority Health* 18 (2006): 740-748.
 37. Schomerus G, Stolzenburg S, Freitag S, et al. Stigma as a barrier to recognizing personal mental illness and seeking help: a prospective study among untreated persons with mental illness. *Eur Arch Psychiatr Clin Neurosci* 269 (2019): 469-479.
 38. Stolzenburg S, Freitag S, Evans-Lacko S, et al. Individuals with currently untreated mental illness: causal beliefs and readiness to seek help. *Epidemiol Psychiatric Sci* 28 (2018): 446-457.
 39. Anderson K K, McKenzie K J, Kurdyak P. Examining the impact of migrant status on ethnic differences in mental health service use preceding a first diagnosis of schizophrenia. *Soci Psychiatry Psychiatric Epidemiol* 52 (2017): 949-961.
 40. Eisenberg D, Speer N, Hunt JB. Attitudes and beliefs about treatment among college students with untreated mental health problems. *Psychiatric Services* 63 (2012): 711-713.
 41. Vernberg E M, Steinberg AM, Jacobs A K, et al. Innovations in disaster mental health: Psychological first aid. *Professional Psychology: Res Practice* 39 (2018): 381-388.