Health Hazards of Migration in People Seeking Asylum in New York City, 2023

Christian Olivo-Freites, MD, Patricia Miguez-Arosemena, MD, Andrés Henao-Martínez, MD, PhD, Jose Antonio Suarez, MD, Carlos Franco-Paredes, MD, MPH, Deborah Edelman, MD, Cristina Olivo-Freites, MD, Jennifer Marquez, MPH, Carlos Plazola, MD, Kayla Leschly, BA, Jayme Leschly, BA, Nathan Gundacker, MD, and Amir M. Mohareb, MD

Objectives. To identify hazardous migration experiences among asylum seekers and associations with psychiatric illness.

Methods. We conducted a cross-sectional study of asylum seekers in a federally qualified health center in New York City from January 1 to November 30, 2023, to determine the frequency of and factors associated with hazardous migration events: physical or sexual assault, kidnapping, extortion, illnesses, and incarceration.

Results. Of 530 people (median age = 28 years, 55.5% female), most were from Venezuela (38.5%), Ecuador (20.0%), and other countries in South America (27.0%). They reported physical assault (24.9%), sexual assault (1.9%), kidnapping (4.7%), extortion (48.3%), and illness (19.4%) during migration. Crossing the Darien Gap was independently associated with experiencing physical or sexual violence (as a composite outcome, adjusted odds ratio [AOR] = 2.71; 95% confidence interval [CI] = 1.47, 5.10), illness (AOR = 3.71; 95% CI = 1.70, 8.58), and extortion (AOR = 1.94; 95% CI = 1.12, 3.34). Among adults, 10.7% (95% CI = 7.7%, 14.3%) were diagnosed with psychiatric illness during their initial evaluation, and this was more common in those who were incarcerated in immigration detention centers (OR = 2.02; 95% CI = 1.13, 3.66).

Conclusions. Asylum seekers journeying through the Darien Gap frequently encounter hazardous traumatic events. Detention by immigration authorities is associated with psychiatric illnesses. (*Am J Public Health*. Published online ahead of print July 10, 2025:e1–e9. https://doi.org/10.2105/AJPH.2025.308065)

AJPH Published online ahead of print July 10, 2025

The number of people seeking asylum in the United States has been rising, with over 2 million asylum applications currently awaiting processing.[1] People seeking asylum enter the United States independently after migrating from their countries of origin and subsequently apply for asylum. Asylum seekers may leave their countries of origin through fear of persecution based on race, religion, nationality, membership in a particular social group, or political opinion.[2] Many people seeking asylum in the United States traverse the Mexico–US border after taking irregular migration routes through South and Central America, which may take months or years.[1,3] US Customs and Border Protection reports increased encounters or apprehensions with migrating people seeking entry through the Mexico–US border, with 1.7 million encounters in 2021 and 2.4 million in 2023.[4] The total number of people granted asylum in 2023 was 54 350. Given the lengthy backlogs in immigration court, asylum seekers frequently wait years for a decision on their applications; more than 1.1 million people filed for asylum in the United States in 2023.[1]

HEALTH HAZARDS DURING MIGRATION

For people seeking asylum in the United States, the migration process is frequently hazardous and can compound preexisting physical and psychological conditions in

people who are forcibly displaced from their countries of origin.[3] Traveling through South America, Central America, and Mexico can expose people to hostile natural elements, vector-borne infections, and traumatic injury.[5–7] Migration also puts people at risk for suffering violence, extortion, and detention at the hands of political authorities, gangs, and traffickers who control various routes of the journey.[8,9] Migrating families report limited access to nutrition and health care during their journey, which can complicate acute and chronic illnesses.[10] Detention in carceral facilities, both outside of and within the United States, can introduce risks of infectious diseases and mental health disorders.[11–13] Such hazardous events encountered during migration can greatly affect the health and well-being of people resettling in the United States.

One site of unique hazards in this journey is in the Darien Gap, an area of dense rainforest between Colombia and Panama with no secure land connection.[5,7] People who migrate through the Darien Gap travel on foot or in boats.[9] Travel through the Darien Gap is hazardous because of the risk of violence, drowning, attack by wild animals, and injuries along the uncharted terrain.[5] Hazardous migration experiences such as physical and sexual assault, kidnappings, and financial extortion are believed to be pervasive among people who traverse the Darien Gap.[14]

STUDY OBJECTIVES

The hazards encountered by people completing this journey have not been formally studied in a population following resettlement in the United States, even though their clinical and public health implications may be substantial. Additionally, the association between hazardous migration experiences and psychiatric illness has been understudied in the current population of US asylum seekers. This study aimed to determine the frequency of hazardous migration experiences, such as physical and sexual assault, acute illness, and financial extortion, and their association with demographic characteristics, migration through the Darien Gap, and mental health illness in people seeking asylum in New York City in 2023.

METHODS

We conducted a cross-sectional study of recently arrived people seeking asylum who were unstably housed in New York City and who sought primary care in a federally qualified health center between January 1, 2023, and November 30, 2023. People from the shelter sites operated by the New York City Humanitarian Emergency Response and Relief Center presented to care in this clinic through self-referral, referral through a case manager or social worker, or referral from emergency departments and hospitals in the city following discharge. We created a note template for clinicians to use for the first evaluation of asylum-seeking patients. Clinicians screened patients for hazardous migration experiences and referred patients to behavioral health services when appropriate. Our primary analysis aimed to determine the frequency and associations with hazardous migration experiences. Our secondary analysis aimed to determine the association between hazardous experiences and psychiatric diagnoses made during the medical screening visit. We used the STROBE guidelines for reporting of cross-sectional observational studies.[15]

Study Population

We identified eligible participants by searching medical records for patients who had a medical encounter that matched a diagnostic code for a refugee health examination (*International Classification of Diseases, Tenth Revision* [*ICD-10*] code Z02.89; Geneva, Switzerland: World Health Organization; 1992). Clinicians in our clinic used this *ICD* code as a matter of internal practice when seeing patients who identified as asylum seekers being sheltered through the city's emergency assistance shelter system and who had not been previously evaluated by other clinicians in the primary care practice. This was verified by medical record review. Asylum status was identified in clinic patients as it influenced the social services offered. Participants were those seeking asylum in the United States within 1 year of their initial medical visit. Status as asylum seekers was verified in the clinic through documentation from the US Citizenship and Immigration Services. We did not restrict participation based on age, and we included reporting from parents or guardians for participants aged younger than 18 years. We excluded people who had altered mental status or who required immediate hospitalization at the time of evaluation. No unaccompanied minors were evaluated in our clinic during the study period. We limited the analysis to participants who reported details of their migration history.

Data Collection: Demographic Variables

We collected demographic information from the clinical record, including age, biological sex, preferred language, and country of origin. We report countries (or regions) of origin, such as Mexico,

AJPH Published online ahead of print July 10, 2025

Central America, the Caribbean, Venezuela, Ecuador, Colombia, Peru, other South American countries, and other regions, including African and Asian countries.

Data Collection: Migration History

Using methods in trauma-informed care,[16,17] we collected a detailed history from patients regarding their migration. This history included the reasons for forced displacement, the route and mode of migration, and the estimated cost per individual for migration (in present-day US dollars). For people reporting travel through the Darien Gap, we asked about the duration of travel through the rainforest, the illnesses encountered during this part of their journey (regardless of the receipt of medical care), and whether they witnessed a death or human remains along their travel route. We also recorded whether people underwent secondary migration, which we defined as migration following a minimum of 1 year in an intermediate country prior to arriving in the United States. Given the time required to complete this detailed history-taking, most patients presenting for urgent care visits in our clinical site could not complete the assessment of their migration history. However, all people were screened for mental health conditions and were referred to behavioral health for more in-depth psychiatric screening and longitudinal care when appropriate. Primary care providers in this clinic have extensive experience in screening, diagnosing, and treating mental health disorders in people experiencing homelessness and in patients newly arrived in the United States.

Outcome Measures

For the primary analysis, outcome measures were the hazardous events encountered during their journey to the United States. We defined a hazardous migration event as physical assault, sexual assault or rape, kidnapping, financial extortion, and developing an illness during migration. Clinicians used a shared definition for these experiences based on a template intake questionnaire used during their evaluation (Appendix, available as a supplement to the online version of this article at http://www.ajph.org). We defined financial extortion as the appropriation of money under the threat of violence by a political or nonstate authority; this definition did not include voluntary payment to traffickers or smugglers for transportation services under financial extortion. We also recorded and separately report whether police or border authorities incarcerated participants during their travel before or after crossing into the United States. We could not distinguish between US Customs and Border Protection detention or US Immigration and Customs Enforcement (online Appendix). We excluded from the analysis any hazardous events that preceded their migration. For our secondary analysis, our outcome measure was any psychiatric diagnosis made by the clinician during the screening visit. To measure this outcome, we reviewed the clinical diagnosis codes of each screening visit. Clinicians screened for depression, most often with Patient Health Questionnaire-9, and made other psychiatric diagnoses based on their individual clinical evaluation.

Statistical Analysis

We report categorical variables as frequencies (percentages) and continuous variables as medians (interquartile ranges [IQRs]). We used z scores to compute the 95% confidence interval (CI) of the proportion of participants who experienced hazardous migration events. We used multivariable logistic regression to determine factors associated with hazardous migration experiences. In this analysis, we separately analyzed 3 different regression models. Model 1 analyzed a composite outcome of physical or sexual assault. Model 2 analyzed the need for medical care during the journey. Model 3 analyzed financial extortion under the threat of violence. We report an adjusted odds ratio (AOR) for metrics controlling for age group (child, adolescent, and adult), sex assigned at birth, country (or region) of origin, secondary migration, and travel across the Darien Gap. We incorporated region of origin into the multivariable models because we hypothesized an independent association between the region of origin and travel through the Darien Gap. Therefore, we categorized regions of origin in geographic relation to the Darien Gap: Mexico, Central America, and the Caribbean; Venezuela; Ecuador; other South America; and other (Africa, Asia). For the secondary analysis, we used χ^2 analysis and univariable logistic regression to determine the association between hazardous migration experiences and a psychiatric illness diagnosed at the medical screening visit. We restricted this secondary analysis to adults (≥ 18 years) given the challenges of diagnosing psychiatric illness in children within 1 medical visit. We chose $P < .05$ as our threshold of significance. We used R version 4.0.3 for all statistical analyses.

RESULTS

Our clinic cared for 1486 sheltered people seeking asylum during the study

AJPH Published online ahead of print July 10, 2025

period (online Appendix). The final study population that completed a detailed migration history included 530 people with median (IQR) age of 28 (12–35) years and 294 (55.5%) identifying as female (Table 1). The countries and regions of origin included Venezuela (204; 38.5%), Ecuador (106; 20.0%), Colombia (90; 17.0%), Peru (36; 6.8%), other countries of South America (17; 3.2%), Mexico and Central America (29; 5.5%), the Caribbean (23; 4.3%), and other parts of the world, including Africa and Asia (25; 4.7%). Secondary migration was reported by 127 participants (24.0%), of whom 90 (70.9%) were from Venezuela. The most common intermediate countries for secondary migrants were Colombia and Ecuador. Commonly reported reasons for displacement were fear of violence (291; 54.9%) and political persecution (115; 21.7%). Most people exclusively used ground transportation during their journey, whereas 85 people (16.0%) used air travel (Figure 1). The reported costs of migration ranged up to $20 000 per person.

Hazardous Migration Experiences

We found that 62.6% (95% CI = 58.4%, 66.8%) of people reported at least 1 hazardous migration experience while traveling to the United States. Participants reported physical and sexual assault during migration (24.9% and 1.9%, respectively). Twenty-five people (4.7%) were kidnapped during their journey, most commonly in Mexico (19 of 25; 76%). Roughly half (255; 48.3%) experienced financial extortion under the threat of violence, many of whom reported extortion at multiple points during the journey. The most common sites of extortion were Mexico (174; 68.2%) and Guatemala (124; 48.6%). Approximately one quarter (143; 27.0%) reported multiple hazardous experiences during their journey. Most participants (301; 57.7%) reported experiencing detention or incarceration by immigration authorities in the United States, whereas 95 (17.9%) reported detention or incarceration in other countries during their journey.

TABLE 1— Characteristics of Unhoused Asylum Seekers Screened at a Federally Qualified Health Center: New York, NY, 2023

Characteristic	Value (n = 530), Median (IQR) or No. (%)
Age, y	28 (12–35)
Sex assigned at birth	
Female	294 (55.5)
Male	236 (44.5)
Country/region of origin	
Venezuela	204 (38.5)
Ecuador	106 (20.0)
Colombia	90 (17.0)
Peru	36 (6.8)
Mexico and Central America	29 (5.5)
Caribbean	23 (4.3)
Other (Africa, Asia)	25 (4.7)
Other (South America)	17 (3.2)
Secondary migration[a]	
Yes	127 (24.0)
No or unknown	403 (76.0)
Crossed Darien Gap	
Yes	312 (58.9)
No	213 (40.2)
Unknown	5 (1.0)
Detained or incarcerated during journey	
Yes	95 (17.9)
No	435 (82.1)
Detained or incarcerated after arrival in United States	
Yes	301 (57.7)
No	221 (42.3)
Hazardous migration experiences[b]	
Physical assault	132 (24.9)
Sexual assault	10 (1.9)
Kidnapping	25 (4.7)
Financial extortion	255 (48.3)
Illness requiring medical care	103 (19.4)
Multiple hazardous experiences	143 (27.0)
None or unknown	198 (37.4)

Note. IQR = interquartile range.
[a]Secondary migration was defined as migration to the United States following a minimum of 1 year in an intermediate country (i.e., not their country of origin).
[b]The experiences listed are not mutually exclusive and do not sum to 100%.

AJPH Published online ahead of print July 10, 2025

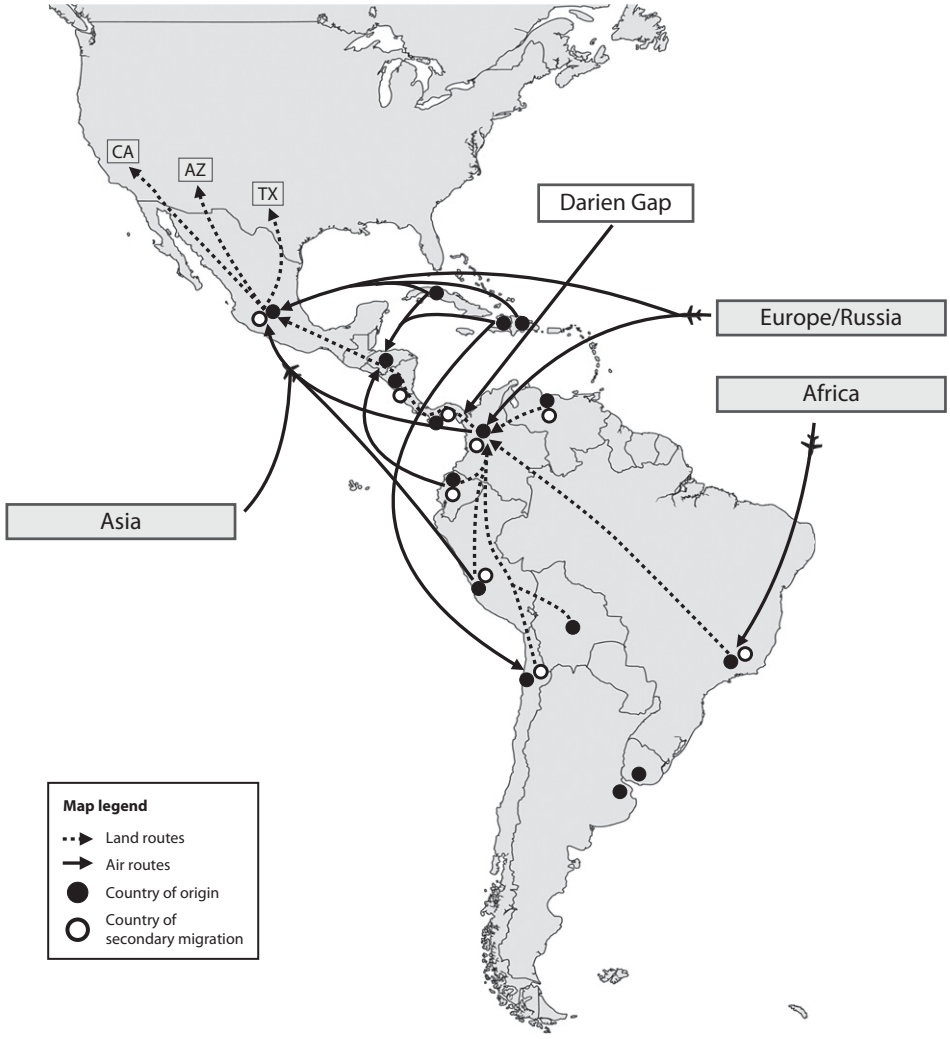


FIGURE 1— Map of Reported Routes of Migration of People Seeking Asylum and Experiencing Unstable Housing: New York, NY, 2023

Note. Land routes of migration are depicted in dashes; air travel is depicted in solid lines. Secondary migration is defined as residence in a second country outside one's country of origin for at least 1 year before resettlement in the United States. Some individuals (e.g., those from Argentina and Uruguay) did not provide details of their migration routes.

Exposure to the Darien Gap

The majority of participants (312; 58.9%) crossed the Darien Gap (Table 2), 213 (40.2%) did not cross the Darien Gap, and 5 (1.0%) did not have information recorded. The median (IQR) duration in the Darien Gap was 5 (4–7) days, although 1 participant was there for nearly 4 weeks. A total of 107 people (34.3%) experienced illnesses in the Darien Gap, of whom 62 (57.9%) reported gastrointestinal illness and 15 (14.0%) reported dermatological diseases, including cutaneous leishmaniasis and trench foot. Fewer people reported respiratory tract illness (10; 9.3%), genitourinary tract disease (4; 3.7%), multiple overlapping conditions, nonspecific febrile illnesses, and pregnancy-related complications. Many people who crossed the Darien Gap (161; 51.6%) reported witnessing deaths or finding human remains during their journey.

After adjusting for age group, sex, country or region of origin, and secondary migration, travel through the Darien Gap was independently associated with physical or sexual violence (AOR = 2.71; 95% CI = 1.47, 5.10; Table 3). People who traveled through the Darien Gap were also more likely to require medical care during their journey (AOR = 3.71; 95% CI = 1.70, 8.58) and to experience financial extortion with the threat of violence (AOR = 1.94; 95% CI = 1.12, 3.34). Secondary migration was associated with lower odds of physical or sexual violence (AOR = 0.54; 95%

AJPH Published online ahead of print July 10, 2025

TABLE 2— Migration Experiences in the Darien Gap, Panama, Among Asylum Seekers Evaluated in a Federally Qualified Health Center: New York, NY, 2023

Characteristic	Value (n = 312), Median (IQR) or No. (%)
Days in Darien Gap	5 (4–7)
Experienced illness in Darien Gap	
Yes	107 (34.3)
No	160 (51.3)
Unknown	45 (14.4)
Types of illnesses (n = 107)	
Gastrointestinal disease	62 (57.9)
Dermatological disease	15 (14.0)
Respiratory tract disease	10 (9.3)
Genitourinary tract disease	4 (3.7)
Other conditions[a]	9 (8.4)
Multiple conditions	7 (6.5)
Witnessed deaths or human remains in Darien Gap	
Yes	161 (51.6)
No	131 (42.0)
Unknown	20 (6.4)

Note. IQR = interquartile range.
[a]Other conditions included malaria, acute febrile illness not otherwise specified, and pregnancy-related complications.

CI = 0.31, 0.91) and higher odds of financial extortion (AOR = 2.68; 95% CI = 1.64, 4.43) after adjustment for other factors.

Secondary Analysis: Psychiatric Diagnosis

Among the 365 adults (≥ 18 years) in the sample, 39 (10.7%; 95% CI = 7.7%, 14.3%) were diagnosed with a psychiatric illness at their initial medical evaluation. These diagnoses were most commonly depression, generalized anxiety, and posttraumatic stress disorder. Psychiatric illness was not more common in adults who had experienced physical or sexual violence ($P = 1.0$), acute illness ($P = .70$), or financial extortion ($P = 1.0$) during migration. Psychiatric illness was associated with incarceration after arrival into the United States by immigration authorities ($\chi^2 = 6.067$; $P = .014$) with an odds ratio of 2.02 (95% CI = 1.13, 3.66).

DISCUSSION

In this study of unhoused asylum seekers in New York City, we found that 62.6% experienced hazardous events during their migration, including physical and sexual assault, kidnappings, financial extortion, and illnesses or injuries requiring medical attention. Our clinic was uniquely positioned to interview and treat recently migrated people experiencing unstable housing in New York City, whose migrant population has surpassed 200 000 people since 2022.[18] The demographic composition of our study population reflects the population of asylum seekers who enter the United States through the Mexico–US border, with a relatively young age and a high percentage of people from South and Central America.[1] Given the high number of people embarking on this journey, our study suggests that hundreds of thousands of people traveling to the United States annually are affected by numerous underappreciated health hazards of migration.

Hazardous Migration and the Darien Gap

A critical finding of this study is the association of hazardous migration experiences with traversing the Darien Gap. Although there has been much press and news reporting on the migration through the Darien Gap, there are few epidemiological studies on the health hazards of this migration route. We found that travel through the Darien Gap was independently associated with experiencing physical or sexual violence, a need for acute medical care, and financial extortion. The Darien region has a widespread gang and cartel presence in addition to human traffickers, which increases the risk of violence for people who are migrating.[9] We found that 51.6% of people who crossed the Darien Gap reported witnessing a death or finding human remains along their journey in the jungle, which reflects the high lethality associated with this journey. A recent study of postmortem evaluations of human remains in the Darien Gap demonstrated a high prevalence of deaths caused by interpersonal violence and drowning, with over 12.3% of deaths among children and young adults.[5] It is not known how many people die or disappear through this route of migration each year, but based on the findings

AJPH Published online ahead of print July 10, 2025

TABLE 3— Factors Associated With Hazardous Migration Experiences Among Asylum Seekers Evaluated in a Federally Qualified Health Center: New York, NY, 2023

Characteristic	OR (95% CI)		
	Model 1, Outcome: Physical/Sexual Violence[a]	Model 2, Outcome: Need for Medical Care	Model 3, Outcome: Financial Extortion
Age group			
Adult (> 25 y) (Ref)	1	1	1
Child (< 13 y)	0.75 (0.46, 1.22)	0.91 (0.51, 1.60)	0.89 (0.56, 1.40)
Adolescent (13–25 y)	0.69 (0.37, 1.23)	1.10 (0.59, 2.00)	0.68 (0.40, 1.16)
Sex assigned at birth			
Female (Ref)	1	1	1
Male	1.40 (0.93, 2.11)	1.09 (0.66, 1.68)	1.12 (0.77, 1.65)
Country/region of origin			
Venezuela (Ref)	1	1	1
Mexico, Central America, or the Caribbean	2.65 (1.14, 6.13)	1.22 (0.43, 3.36)	0.73 (0.33, 1.61)
Ecuador	0.97 (0.55, 1.72)	1.06 (0.57, 1.94)	1.98 (0.58, 1.67)
Other (South America)	1.01 (0.49, 2.07)	0.38 (0.13, 0.97)	0.43 (0.22, 0.81)
Other (Africa, Asia)	1.19 (0.38, 3.31)	0.45 (0.07, 1.77)	0.17 (0.05, 0.50)
Secondary migration			
No/unknown (Ref)	1	1	1
Yes	0.54 (0.31, 0.91)	1.56 (0.91, 2.66)	2.68 (1.64, 4.43)
Crossed Darien Gap			
No/unknown (Ref)	1	1	1
Yes	2.71 (1.47, 5.10)	3.71 (1.70, 8.58)	1.94 (1.12, 3.34)

Note. CI = confidence interval; OR = odds ratio. Multivariable logistic regression was used.
[a]Physical/sexual violence included physical assault, sexual assault, and kidnapping. For definitions, see Appendix (available as a supplement to the online version of this article at http://www.ajph.org).

from this study, enhancing the quality of medical care and the safety of people migrating through the Darien Gap should be made an urgent public health priority.

The hazards reported in this study complicate the already difficult migration process for people displaced from their countries of origin, particularly in an era of increasing restrictions on refugee resettlement and asylum worldwide. The lifetime prevalence of physical and sexual violence among asylum seekers is likely higher than what is reported here, as this study is limited to events encountered during the course of migration and not in countries of origin or the United States since resettlement.[19,20] Our study population's predominant mode of transportation was overland, likely attributed to the changing visa requirements in the region.[21,22] Paradoxically, these visa requirements and other forms of migration restriction do not appear to decrease migration volume. Instead, they compel individuals seeking asylum to use irregular land pathways, possibly exposing them to more migration hazards.[7]

Clinical and Public Health Implications

The findings of this study have important clinical and policy implications. To our knowledge, this study is the first to provide detailed accounts of specific migration experiences for the current unstably housed asylum-seeking population in the United States, many of whom traveled through the Darien Gap. Clinicians should identify these events as they represent risk factors for physical and mental health conditions for asylum seekers following resettlement. However, these experiences may be underreported in general clinical settings, given their associated stigma and the sensitive and potentially retraumatizing nature of recounting past events. State and municipal public health authorities should invest resources, particularly through community-based

AJPH Published online ahead of print July 10, 2025

organizations, to help identify asylum seekers with traumatic experiences and link them to appropriate social and mental health supports.

Although the Centers for Disease Control and Prevention provides guidelines for the medical screening and care of patients who have arrived in the United States through the formal refugee resettlement program,[23] there are no evidence-based guidelines available for clinicians who care for the hundreds of thousands of migrants and asylum seekers who are not formally resettled as refugees. This represents a major public health gap, given the higher volume of displaced people who resettle in the United States seeking asylum compared with the refugee resettlement program. For example, in 2023 alone, more than 1.1 million individuals were included in asylum filings in the United States, compared with 60 050 admitted refugees that same year.[1] Clinicians who care for this population should use methods of trauma-informed care to screen for hazards during the migration process and provide medical care for this growing patient population. Clinical and public health experts should develop the evidence base to help inform guidelines for screening and care for forcibly displaced persons outside the refugee resettlement program.

Hazardous Migration and Psychiatric Illness

Past studies have demonstrated that major depression and posttraumatic stress disorder are present in 45% to 48% of the refugees and asylum seekers who have experienced violence, kidnappings, and torture.[24] Our study found that 10.7% of adult asylum seekers received a psychiatric diagnosis at their initial medical visit. Still, this study likely underestimates the true prevalence of mental illness in this population as our analysis relied on clinical diagnoses made in the initial screening visit, and diagnoses may occur after their initial visit. As in past studies, we found higher odds of experiencing psychiatric illness among those who were incarcerated in US immigration detention centers.[12] Past studies have also shown that hypertension, dyslipidemia, and physical disabilities are prevalent in asylum seekers who report physical and sexual violence prior to resettlement.[25] There are also risks of infectious diseases associated with detention and incarceration, particularly in overcrowded facilities.[26,27] Policymakers should aim to minimize the carceral detention of asylum seekers given the deleterious individual and societal effects of incarceration.

Study Limitations

Several limitations should be considered when interpreting these study results. First, as this was a single-center study, generalizability has limitations. The findings reported here are most reflective of asylum seekers experiencing unstable housing after traveling across the Mexico–US border to enter the United States. Second, as this was a cross-sectional study, we cannot use these findings to determine causation, and unmeasured variables may confound some findings in the regression analyses. For example, unmeasured variables may be associated with the exposure of crossing the Darien Gap and the outcomes of interest. Not all individuals evaluated in our clinic during the study were asked detailed migration histories because of time constraints and discomfort with trauma-informed questioning. Given that the referral process to our clinic included post–emergency department and hospitalization visits, our sample may overestimate the prevalence of some outcomes. However, because of stigma, retraumatization risks, and underreporting, sexual violence likely remains underestimated. For the reasons stated, we believe the prevalence of psychiatric illness is higher than what is reported here. We did not analyze the prevalence of psychiatric conditions in children, given the challenges of making accurate diagnoses in a single medical screening visit.

Conclusions

This study demonstrates that 62.6% of unhoused asylum seekers presenting for care at a federally qualified health center in New York City reported a hazardous event during their migration. We found that 24.9% reported an instance of physical violence and 1.9% reported sexual violence. Approximately half reported financial extortion, and one fifth required medical care during their journey. Travel through the Darien Gap was associated with these hazardous experiences, and detention by US immigration authorities was associated with psychiatric illness after arrival. Many of the traumatic experiences that asylum seekers experience during their migration may leave long-term sequelae that can influence their resettlement and health. Public health authorities should formulate policies that address the substantial risk of traumatic events among the growing asylum-seeking population. AJPH

ABOUT THE AUTHORS

At the time this work was conducted, Christian Olivo-Freites, Jennifer Marquez, Kayla Leschly, and Jayme Leschly were with Ryan Health, New York, NY. Patricia Miguez-Arosemena was with the Department of Internal Medicine, Mount Sinai Health System, New York, NY. Andrés Henao-Martínez was with the Division of Infectious Diseases, University of Colorado, Anschutz

AJPH Published online ahead of print July 10, 2025

Medical Campus, Aurora. Jose Antonio Suarez was with Senacyt, Panama City, Panama. Carlos Franco-Paredes was with Hospital Infantil de Mexico, Federico Gomez, Mexico City, Mexico. Deborah Edelman was with the Department of Internal Medicine, Mount Sinai Health System and Icahn School of Medicine at Mount Sinai, New York, NY. Cristina Olivo-Freites was with the Division of Hematology and Oncology, University of Texas Health Science Center, Houston. Carlos Plazola was with the Division of Infectious Diseases, University of Miami Miller School of Medicine, Miami, FL. Nathan Gundacker was with the Medical College of Wisconsin and Zablocki VA Medical Center, Milwaukee. Amir M. Mohareb was with the Massachusetts General Hospital Center for Global Health and Division of Infectious Diseases and Harvard Medical School, Boston, MA.

CORRESPONDENCE

Correspondence should be sent to Amir M. Mohareb, MD, Center for Global Health, Massachusetts General Hospital, 125 Nashua St, #7222, Boston, MA 02114 (e-mail: amohareb@mgh.harvard.edu). Reprints can be ordered at https://www.ajph.org by clicking the "Reprints" link.

PUBLICATION INFORMATION

Full Citation: Olivo-Freites C, Miguez-Arosemena P, Henao-Martínez A, et al. Health hazards of migration in people seeking asylum in New York city, 2023. *Am J Public Health*. Published online ahead of print July 10, 2025:e1–e9.

Acceptance Date: February 5, 2025.

DOI: https://doi.org/10.2105/AJPH.2025.308065

ORCID iDs:
Christian Olivo-Freites https://orcid.org/0000-0002-0779-921X

Carlos Franco-Paredes https://orcid.org/0000-0001-8757-643X

Deborah Edelman https://orcid.org/0000-0002-7198-2879

Amir M. Mohareb https://orcid.org/0000-0002-3761-6154

CONTRIBUTORS

Christian Olivo-Freites and A. M. Mohareb conceptualized the study. Christian Olivo-Freites, J. Marquez, J. A. Suarez, N. Gundacker, C. Franco-Paredes, and A. Henao-Martínez designed the questionnaire. Christian Olivo-Freites, C. Plazola, J. Marquez, J. Leschly, and K. Leschly undertook data collection. Christian Olivo-Freites and A. M. Mohareb conducted statistical analysis. Christian Olivo-Freites, A. M. Mohareb, C. Franco-Paredes, and D. Edelman interpreted the results. Christian Olivo-Freites and A. M. Mohareb primarily drafted the manuscript. All authors reviewed the manuscript and critically revised its contents for intellectual content.

CONFLICTS OF INTEREST

None of the authors report any financial disclosures or conflicts of interest related to this article.

HUMAN PARTICIPANT PROTECTION

This study was approved by the Ryan Health board of directors and the MassGeneral Brigham institutional review board.

REFERENCES

1. US Dept of Homeland Security, Office of Homeland Security Statistics. Annual flow report: refugees and asylees: 2023. November 2024. Available at: https://ohss.dhs.gov/topics/immigration/refugees-and-asylees/refugees-and-asylees-annual-flow-report. Accessed June 20, 2025.
2. UN High Commissioner for Refugees. Global trends. Available at: https://www.unhcr.org/media/40152. Accessed June 20, 2025.
3. Ward N, Batalova J. Refugees and asylees in the United States. June 15, 2023. Available at: https://www.migrationpolicy.org/article/refugees-and-asylees-united-states. Accessed June 20, 2025.
4. US Customs and Border Patrol. Nationwide encounters. Available at: https://www.cbp.gov/newsroom/stats/nationwide-encounters. Accessed April 20, 2023.
5. Lucio JVP, Congram D, Franco-Paredes C, et al. Mortality during migration through the Darién Gap in Panama in 2018–22. *Lancet*. 2023;402(10410):1321–1322. https://doi.org/10.1016/S0140-6736(23)01635-5
6. Reynolds CW, Cheung AW, Draugelis S, et al. Epidemiology of asylum seekers and refugees at the Mexico–US border: a cross-sectional analysis from the migrant settlement camp in Matamoros, Mexico. *BMC Public Health*. 2024;24(1):489. https://doi.org/10.1186/s12889-024-17947-7
7. Higuita NA, Suarez JA, Millender E, et al. US bound journey of migrant peoples InTransit across Dante's Inferno and Purgatory in the Americas. *Travel Med Infect Dis*. 2022;47:102317. https://doi.org/10.1016/j.tmaid.2022.102317
8. Abaya M, Lesley B, Williams C, Chaves-Gnecco D, Flores G. Forcible displacement, migration, and violence against children and families in Latin America. *Pediatr Clin North Am*. 2021;68(2):371–387. https://doi.org/10.1016/j.pcl.2020.12.003
9. Naranjo L, Williams Y, Levy J, et al. The endless vulnerability of migrant children in-transit across the Darién Gap. *Am J Trop Med Hyg*. 2023;109(3):515–519. https://doi.org/10.4269/ajtmh.22-0765
10. Ahmed D, Benavente P, Diaz E. Food insecurity among international migrants during the COVID-19 pandemic: a scoping review. *Int J Environ Res Public Health*. 2023;20(7):5273. https://doi.org/10.3390/ijerph20075273
11. Tellez D, Tejkl L, McLaughlin D, Vallet M, Abrahim O, Spiegel PB. The United States detention system for migrants: patterns of negligence and inconsistency. *J Migr Health*. 2022;6:100141. https://doi.org/10.1016/j.jmh.2022.100141
12. von Werthern M, Robjant K, Chui Z, et al. The impact of immigration detention on mental health: a systematic review. *BMC Psychiatry*. 2018;18(1):382. https://doi.org/10.1186/s12888-018-1945-y
13. Robjant K, Hassan R, Katona C. Mental health implications of detaining asylum seekers: systematic review. *Br J Psychiatry*. 2009;194(4):306–312. https://doi.org/10.1192/bjp.bp.108.053223
14. Taylor L. Health crisis for migrants crossing the Darién Gap is intensifying, MSF warns. *BMJ*. 2022;377:o1323. https://doi.org/10.1136/bmj.o1323
15. von Elm E, Altman DG, Egger M, et al. The strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. *Ann Intern Med*. 2007;147(8):573–577. https://doi.org/10.1136/bmj.39335.541782.AD
16. Forkey H, Szilagyi M, Kelly ET, et al. Trauma-informed care. *Pediatrics*. 2021;148(2):e2021052580. https://doi.org/10.1542/peds.2021-052580
17. Im H, Swan LET. Capacity building for refugee mental health in resettlement: implementation and evaluation of cross-cultural trauma-informed care training. *J Immigr Minor Health*. 2020;22(5):923–934. https://doi.org/10.1007/s10903-020-00992-w
18. City of New York Website. Mayor Adams announces New York City has cared for more than 100,000 asylum seekers since last Spring. August 16, 2023. Available at: https://www.nyc.gov/office-of-the-mayor/news/600-23/mayor-adams-new-york-city-has-cared-more-100-000-asylum-seekers-since-last-spring. Accessed June 20, 2025.
19. Aguirre NG, Milewski AR, Shin J, Ottenheimer D. Gender-based violence experienced by women seeking asylum in the United State: a lifetime of multiple traumas inflicted by multiple perpetrators. *J Forensic Leg Med*. 2020;72:101959. https://doi.org/10.1016/j.jflm.2020.101959
20. Khouani J, Landrin M, Boulakia RC, et al. Incidence of sexual violence among recently arrived asylum-seeking women in France: a retrospective cohort study. *Lancet Reg Health Eur*. 2023;34:100731. https://doi.org/10.1016/j.lanepe.2023.100731
21. Jokisch B. Ecuador juggles rising emigration and challenges accommodating Venezuelan arrivals. October 18, 2023. Available at: https://www.migrationpolicy.org/article/ecuador-migration-trends-emigration-venezuelans. Accessed June 20, 2025.
22. Human Rights Watch. Mexico/Central America: new visa restrictions harm Venezuelans. July 5, 2022. Available at: https://www.hrw.org/news/2022/07/05/mexico/central-america-new-visa-restrictions-harm-venezuelans. Accessed June 20, 2025.
23. Centers for Disease Control and Prevention. Refugee health guidance. Available at: https://www.cdc.gov/immigrant-refugee-health/hcp/domestic-guidance/index.html. Accessed June 20, 2025.
24. Tamblyn JM, Calderon AJ, Combs S, O'Brien MM. Patients from abroad becoming patients in everyday practice: torture survivors in primary care. *J Immigr Minor Health*. 2011;13(4):798–801. https://doi.org/10.1007/s10903-010-9429-2
25. Al-Rousan T, AlHeresh R, Saadi A, et al. Epidemiology of cardiovascular disease and its risk factors among refugees and asylum seekers: systematic review and meta-analysis. *Int J Cardiol Cardiovasc Risk Prev*. 2022;12:200126. https://doi.org/10.1016/j.ijcrp.2022.200126
26. Lo NC, Nyathi S, Chapman LAC, et al. Influenza, varicella, and mumps outbreaks in US migrant detention centers. *JAMA*. 202112;325(2):180–182. https://doi.org/10.1001/jama.2020.20539
27. Leibowitz AI, Siedner MJ, Tsai AC, Mohareb AM. Association between prison crowding and COVID-19 incidence rates in Massachusetts prisons, April 2020–January 2021. *JAMA Intern Med*. 2021;181(10):1315–1321. https://doi.org/10.1001/jamainternmed.2021.4392

AJPH Published online ahead of print July 10, 2025