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The Impact of Postresettlement Stressors and Access to Health Care on Health Outcomes in Recently Resettled Refugees in the United States

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This mixed-methods study examines mechanisms connecting the deployment of economic, social, and health care resources to emotional distress and physical health outcomes. Examining such mechanisms is critical for informing strategies, policies, and other interventions for reducing health disparities and improving refugee health in the United States and other resettlement contexts. Data for this study were collected as part of a randomized control trial in a mid-sized city in the Southwestern United States. Two-hundred ninety recently resettled (<3 years) refugee adults from 143 households were enrolled in the study (36.2% Afghan, 32.8% Iraqi/Syrian, and 31.0% Great Lakes African; 52% women). Qualitative interview data were collected via semistructured interviews. A longitudinal structural equation path model of quantitative data from three time points over 12 months tested hypotheses that emerged from qualitative findings. In semistructured interviews, refugees in the United States (a) attributed the development of worse or new physical health problems to postresettlement stressors related to financial instability and limited social support that contributed to their emotional distress and (b) reported several barriers to accessing health care in the United States, including insufficient knowledge of health care resources, inadequate patient–provider communication, and navigating complex American health insurance systems, all of which exacerbated their physical health problems. Guided by these qualitative findings, longitudinal quantitative data revealed that: (a) postmigration stressors were associated with emotional distress and poor self-reported physical health, (b) emotional distress mediated the association between postmigration stressors and global health satisfaction, and (c) emotional distress was negatively associated with global health satisfaction. Findings document stressors refugees experience in the context of the unique environment created by the American health care system and how these stressors contribute to poor physical health through increased emotional distress.

Public Policy Relevance Statement

Refugees have a higher prevalence of physical health problems compared to native residents of their host countries. Multiple barriers exist for refugees in addressing both their preexisting and post-migration-related health problems. It is essential that policymakers explore the barriers refugees face in accessing health care in the unique environment created by the United States. Health care system, as well as understand how these stressors contribute to poor physical health through increased emotional distress.

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Refugees experience numerous stressors pre, during, and postmigration related to forcible displacement, violence, loss of community and social support, and starting over in a new country. Although early research on refugee physical and mental health primarily focused on the impact of premigration trauma, extensive research has subsequently demonstrated the significant effects of postmigration stressors on refugee mental health (Hynie, 2018; Kim, 2016). However, less is known about refugees' physical health over time and the complex relationships between postmigration stressors, mental health, and physical health. This study explored postresettlement stressors related to physical health as articulated in qualitative interviews with 290 refugees who had resettled in the United States in the past 3 years from Afghanistan, the Great Lakes Region of Africa, Iraq, and Syria. Based on descriptions of pathways that emerged from the qualitative data, we utilize stress proliferation theory (Pearlin et al., 2005) as a framework for understanding and testing mechanisms through which social and economic postresettlement stressors might contribute to high rates of mental and physical health problems. Despite growing evidence of the importance of attending to structural and social determinants of health, these approaches remain relatively rare in practice, particularly for recently resettled refugees, and research on the mechanisms through which these relationships may operate is limited. Our study findings contribute to bolstering the evidence of the need to attend to specific postmigration stressors through policy and practice changes at multiple levels.

Background and Literature Review

According to the United Nation's High Commissioner for Refugees (United Nations High Commissioner for Refugees [UNHCR], 2022) Global Trends study, 89.3 million people have been forcibly displaced worldwide as of 2021. Of these people, nearly 27.1 million are refugees—forced to flee their country because of a well-founded fear of persecution. These numbers represent a record high with 6.9 million more forcibly displaced people recorded in 2021 compared to 2020 (UNHCR, 2022).

Refugees have a higher prevalence of physical health problems compared to native residents of their host countries (Marshall et al., 2016). Although refugees' mental and physical health problems upon resettlement are related to war/violence exposure, crowded and unsanitary conditions in refugee camps, limited access to health care, and other injuries related to their flight experiences, postmigration stressors also play a role in the development of new health problems (Khan & Amatya, 2017; Schilling et al., 2017). Postmigration stressors include acculturation, language barriers, low socioeconomic status, poor living conditions, and limited social support (Lamkaddem et al., 2015; Morris et al., 2009). These stressors have been associated with low levels of perceived health (Berthold et al., 2014; Chen et al., 2017; Lamkaddem et al., 2015) and higher prevalence of noncommunicable diseases among migrants (Berthold et al., 2014; Bischoff et al., 2009). Refugees' elevated rates of mental and physical health problems have been found both immediately after resettlement (Khan & Amatya, 2017; Schilling et al., 2017) and also to persist for many years postresettlement. For example, Marshall et al. (2016) found elevated rates of chronic health problems among Cambodian refugees after 30 years in the United States. Thus, understanding the mechanisms contributing to these health disparities is critical.

Multiple barriers exist for refugees in addressing both their preexisting and post-migration-related health problems. For example, access to quality health care is often complicated by poor communication between refugees and providers (Fang et al., 2015; Hadgkiss & Renzaho, 2014; Mangrio & Sjögren Forss, 2017). A systematic review of refugee experiences with health care found that language access was a common barrier (Mangrio & Sjögren Forss, 2017). Lack of proper interpretation can lead to several additional difficulties, such as appointment cancelations (Bhatia & Wallace, 2007), trouble establishing appointments (Cheng et al., 2015), and misunderstandings of how to use medications (Lipson et al., 2003).

Additionally, refugees underutilize health care services, with financial barriers being a common reason (Spike et al., 2011; Wong et al., 2006). For some refugees, inadequate knowledge of how to access health care services led to decreased use of their host country's health care systems (Fang et al., 2015; Morris et al., 2009). The stigma associated with mental disorders in non-Western cultures also leads to limited use of mental health services among refugees, which is also related to a lack of culturally and linguistically appropriate mental health services (Morris et al., 2009). Taken together, these multiple barriers often place resettled refugee populations at a greater risk of disease morbidity and mortality (Mangrio & Sjögren Forss, 2017).

The myriad of postmigration stressors refugees experience suggests a process by which the serious adversity of forcible displacement results in increased risk for numerous additional adversities (e.g., violence exposure, disruption of social support, economic precarity, lack of access to health care, discrimination) that further contribute to poor health and health disparities. This concept of stress proliferation (Pearlin et al., 2005) is likely an important framework for understanding and addressing refugee health disparities. Stress proliferation theory posits that stressful experiences typically lead to additional stressors, which ultimately result in mental and physical health problems, particularly if social support and other resources are absent (Pearlin, 1999). For example, persecution and violence experienced by refugees in their home countries lead to forced displacement, resulting in disruption of social roles, and loss of social support, community, and basic resources (e.g., housing and food), all of which are important predictors of mental and physical health (Goodkind et al., 2021). One recent study found that postresettlement economic stressors mediated the relationship between premigration trauma and postresettlement mental health, providing preliminary support for stress proliferation processes among refugee populations (Goodkind et al., 2021). However, research is needed to understand the mechanisms through which postresettlement stressors lead to worse physical health outcomes for refugees (Chen et al., 2017; Lamkaddem et al., 2015).

Study Context

Since 2010, some of the largest numbers of refugees resettling in the United States have come from the Great Lakes region of Africa (Burundi, the Democratic Republic of Congo [DRC], the Republic of Congo, and Rwanda), the Middle East (Iraq and Syria), and Afghanistan. Refugees from these three regions have diverse cultural, racial, ethnic, and religious backgrounds, as well as varied premigration experiences. However, most are fleeing violence and persecution related to ongoing conflicts in each region, and most have experienced extensive postmigration stressors related to the broader U.S. context that has been relatively unwelcoming to

forcibly displaced people (due to religious and racial identities) and a challenging economic context (due to recession and limited and shrinking economic assistance available to refugees).

Afghanistan has experienced almost continuous violence and conflict for the past 100 years. Prior to 2021, it had been estimated that one out of every four Afghans was living as a refugee; this number is even higher now. Most Afghan refugees in the United States are Muslim but represent multiple ethnic groups. Educational and socioeconomic backgrounds vary, but many women have not had the opportunity to attend school prior to displacement.

Many of the Iraqi refugees currently in the United States were selected for resettlement because their relationship with U.S. operations in Iraq made them targets for killings, torture, and/or discrimination. Other Iraqi refugees are members of religious minority groups who were persecuted heavily after U.S. intervention in Iraq; thus, Iraqi refugees include people who are Muslim, Christian, and several other religions. Many Iraqi refugees have high levels of education and most come from urban settings. Since 2011, more than 60% of Syrians (over 13.5 million of the country's total population of 22 million) have been forcibly displaced from their country due to civil war. Most Syrian refugees are Muslim, but some are members of ethnic and religious minorities, such as Kurds, Druze, and Christians. Syrian refugees have diverse educational and socioeconomic backgrounds.

The Great Lakes region of Africa refers to several eastern/central African countries that surround a series of lakes including Lake Kivu, Lake Tanganyika, and Lake Victoria. A majority of the refugees from this region who have resettled in the United States are from Burundi, Rwanda, and eastern DRC. Between 1993 and 2008, the Great Lakes Region faced the deadliest conflict the world had seen since World War II. In this period, an estimated 300,000 Burundians were killed in civil war, and an estimated 800,000 Rwandans were killed in a genocide, which in turn sparked conflict in eastern DRC, killing an estimated 5.4 million people. Most refugees from this region are Christian, although some are Muslim. They come from multiple ethnic groups, and there is extensive diversity in terms of their educational and socioeconomic backgrounds.

This mixed-methods study provides a unique opportunity to test stress proliferation theory with refugee populations and to explore mechanisms that may link social and economic stressors to health disparities. Furthermore, research that explores the barriers refugees face in accessing health care in the unique environment created by the U.S. health care system is essential. This is particularly important given that many recent studies of refugees' access to health care have occurred in countries with socialized health care systems (Fang et al., 2015; Hadgkiss & Renzaho, 2014; Lamkaddem et al., 2015), which likely document different and fewer barriers to health care than in the United States. The aims of this study were to articulate refugees' understandings of postmigration stressors contributing to their emotional distress and physical health problems and to test longitudinal pathways among stressors and health outcomes that emerged from refugees' descriptions of their experiences. In particular, we tested the relationships among four stressors identified by refugees as impacting their health (difficulty accessing resources, difficulty accessing health care, limited social support, and economic stress) and two health outcomes (emotional distress and global health satisfaction) to inform strategies, policies, and other interventions for reducing health disparities and improving refugee health in the United States and other resettlement contexts.

Method

The data reported in this article were collected as part of a randomized controlled trial (RCT) of the *Refugee Well-Being Project* intervention (RWP), funded by the National Institute on Minority Health and Health Disparities (R01MD007712) and approved by the University of New Mexico Human Research Protections Office. The aim of the overall study was to examine the efficacy of community-based advocacy, mutual learning, and social support on recently resettled refugees' health and community integration (see Goodkind et al., 2020, for results of the RCT). The overall study employed a convergent parallel mixed-methods design (Creswell & Plano Clark, 2011), in which qualitative and quantitative data were collected simultaneously from refugee participants at four time points over 12 months. The semistructured open-ended interview guide and fixed-response survey questions were developed at the same time by the study team, with the goal of collecting complementary data over time from all participants. However, an exploratory sequential design process guided the current article, in which analyses of qualitative data led the team to conduct specific quantitative analyses to test potential pathways described by refugees. This design allowed the team to develop emergent understandings of refugees' physical and mental health and the experiences (e.g., postresettlement stressors) that refugees described as impacting their health, and then to deductively test these hypotheses that were derived from the inductive analysis of qualitative data.

Participants

The RWP study enrolled four cohorts between October 2013 and November 2016 in a mid-sized city in the Southwestern United States. A total of 290 refugee adults from 143 households were enrolled in the study. All adult refugees from the Great Lakes region of Africa (Burundi, the DRC, the Republic of Congo, and Rwanda), Afghanistan, Iraq, and Syria who had arrived in the United States within the past 3 years of their enrollment date were invited to join the study (total of 326 refugee adults); 89% agreed to participate.

In the parent RCT intervention study, participants were randomized at the household level into intervention and control groups. About equal numbers of participants from the three main regions were represented: 35.2% Afghan, 32.6% Iraqi and Syrian, and 31.7% Great Lakes African. Fifty-two percent of the participants were women. More than half were married (58.4%), with 32.9% single, 6.5% widowed, and 2.1% divorced. At the first interview time point, participants had been in the United States for an average of 30 weeks. Participants in the intervention group were involved in weekly Learning Circles and were paired with undergraduate student advocates to engage in mutual learning and work together to access and mobilize community resources and social support for 6 months. Participants in the control group were invited to attend a one-time stress management session. Participants in both intervention and control groups with clinically significant levels of Posttraumatic stress disorder symptoms were offered narrative exposure therapy, an individual-focused, evidence-based trauma treatment. Qualitative and quantitative data used for this article were collected from participants in the control and intervention groups from all four cohorts. For further description of these processes and information on the control and intervention groups, see Goodkind et al. (2020).

Data Collection

Mixed-method interviews were conducted at four time points with participants over a 12-month period. This included a preinterview, mid-interview (3 months after preinterview), post-interview (6 months after preinterview), and a follow-up interview (12 months after preinterview). Quantitative data were collected using computer-assisted personal interview software at each participant's home with a bilingual/bicultural interviewer in the participant's native language. Qualitative data were collected via semistructured interviews with all participants at the preinterview time point. At subsequent time points, we purposefully sampled and conducted qualitative interviews with at least 16 participants for each cohort ($n = 66$), maximizing variability across sex, national origin, and study condition. Qualitative interviews were conducted by English speakers at participants' homes with an audio recorder and a bilingual/bicultural interpreter. The interviews offered an opportunity for participants to share their experiences, and the semistructured open-ended nature allowed participants to direct the conversation. Questions covered several domains, including the benefits and challenges of resettlement, health and well-being, access to resources including health care, social support networks, as well as how participants perceived cultural adjustment in the United States. Of note, all participants who completed qualitative interviews also completed quantitative interviews.

Qualitative Study

Qualitative Data Analysis

A professional transcriptionist transcribed English portions of the recorded interviews. Transcripts were checked for accuracy, anonymized, and entered into the qualitative data management software package, NVivo 11 (International, QSR, 2012). First, transcripts were coded by question using NVivo's autocoding feature. A second round of coding was completed by the research team, which included undergraduate and graduate students and members of participant communities serving as project staff, led by the third author. Coding was largely descriptive but also included emotion and values coding. Coding was not interpretative to facilitate agreement by the large number of coders. Each transcript was coded by two coders working independently using a hierarchical coding tree developed at the beginning of the study that was created using both inductive and deductive methods. A constructivist grounded theory approach as described by Charmaz (2012) was applied to the data. Constructivist grounded theory is an approach that views research as a coconstruction of researchers and participants. Interpretation largely occurred in subsequent rounds of focused coding (Charmaz, 2012), and in memo writing, which all team members participate in, discussing results and interpretations in group meetings, followed by a memo review process conducted by a separate team member. For this article, qualitative data from all four time points were included in the analysis; the authors queried intersecting themes related to physical health, stress, and access to health care. From there, the third author examined patterns and anomalies across the data to better elucidate the relationship between physical health, stress, and access to health care and created analytical memos. The third author is a White man, raised in the United States, who had participated as an undergraduate advocate in RWP and joined the research team to fulfill a research requirement during medical school. His analytic memos were reviewed by the second author, who is the qualitative research team lead, and a White, female, U.S.-born anthropologist with expertise in migration studies and over 25 years of experience conducting qualitative research. Those memos form the basis of the qualitative results presented in this article.

Qualitative Results

Open-ended questions about health and well-being allowed participants to describe their physical and emotional health and which aspects of their current life and past experiences impacted them. Participants described a variety of ways they perceived their physical health was related to emotional distress that resulted from postresettlement stressors, in particular high levels of socioeconomic difficulties and low levels of social support, and difficulty accessing health care. Interview data revealed that refugee participants perceived strong relationships between postresettlement stressors and poor physical health outcomes. Physical health problems reported included: cardiovascular dysfunction (e.g., hypertension, hypotension, chest pain, tachycardia, arrhythmia, and myocardial infarction); headaches; musculoskeletal problems, including arthralgias and myalgias; "feeling tired"; dyspnea; sleep disturbances; and weight loss. Although some participants mentioned having health problems prior to resettlement, many participants attributed stress postresettlement as causative of new physical health problems. For example, one participant mentioned, "Since I am here, I have had a heart problem and my back problem is worse. It's all stress. I'm not feeling well from that at night." Stressors were also found to be additive, with participants describing multiple stressful situations as contributing to their overall feelings of distress. Participants with additive stressors also exhibited lower emotional well-being, expressing feeling "tired," "exhausted," or not knowing what to do about their situations. This led to perceived worse general health.

Additionally, many participants described finding it difficult to access services to address their physical health problems after resettling in the United States either from lack of knowledge of how to navigate complex health systems, not having health insurance, or from services being out-of-network with their insurance plans. Other participants were limited in their medical decision making because of a lack of insurance coverage, leading them to choose more affordable but less optimal solutions for their health. These barriers led to exacerbated physical health problems and feelings of distress. Findings are described in detail in the subsequent sections, and additional quotations can be found in Table 1.

Postresettlement Stressors, Emotional Distress, and Physical Health.

Financial Instability Leading to Poor Physical Health. Financial instability was a major cause of emotional distress among study participants, which negatively affected physical health outcomes. One 46-year-old Iraqi woman named Sara (all names are pseudonyms to protect the identity of participants) said that after her initial financial assistance from the government was discontinued, she found it difficult to pay her rent, which led to a significant amount of emotional distress. This subsequently led to negative impacts on her general health:

Table 1
Summary of Qualitative Results

Domain	Quote
	Postresettlement stressors, stress, and physical health
Financial instability leading to poor physical health: Limited access to benefits	"First, when we came here we were fine because [refugee resettlement programs] were paying for our rent for three months. After that, they cut paying the rent …. This makes me tired. I don't feel good." —Sara, Iraqi woman, Age 46
Financial instability leading to poor physical health: Unexpected expenses	"We have to take all our clothes, all the pillows, and everything to a place to wash them and it's going to cost $100. I thought it was $60 for the exterminator, but they said no, its $600. So how are we going to pay for rent? It's too hard to do this." —Sara, Iraqi woman, Age 46
Financial instability leading to poor physical health: Denial of disability benefits	"My health is getting worse. My son's health is worse. I was feeling okay and I was hoping to get the Social Security assistance for my husband, but we got the denial today and that makes me feel worse." —Telenaz, Iraqi woman, Age 48
Financial instability leading to poor physical health: Unemployment	"Hopefully, I can find a job so that could be one less stress I have. I have a lot of stress, and if you have stress you won't have good health. It does affect my physical … Right now, I am thinking so much, and my body is getting skinnier." —Nella, Burundian woman, Age 28
Low perceived social support leading to poor physical health	"I was thinking when I come to America I will feel comfortable … I will feel healthier, but when I came here more pressure was on me. As a mother, I'm the center of the pressure of all of the things that will happen to my kids. So they blame me. I can't handle all of them …. I'm so tired." —Telenaz, Iraqi woman, Age 48
	Health care access leading to difficulties addressing health problems
Access to health care services	"In Uganda, they gave me a article of food to eat during my pregnancy and take it to the agency that got us here to the United States. When I took it over there, they didn't find me a doctor … I didn't know what to do until the baby died inside me … From June to November, I was sick … in the hospital. I had to go to see a psychologist because I was going crazy …" —Brigid, Congolese woman, Age 36
Problems with health insurance: Treatment not covered	"The other thing that's very difficult is they cut off my Medicaid. I had an appointment and when I got there, they check my Medicaid and said they can't treat me. And so I went to Human Services and they said that I have to apply and wait. I'm still waiting. The fact is back home we used to get treated for free." —Claudia, Congolese woman, Age 39
	"I went to my family doctor and she prescribed me birth control pills to stop the bleeding. But the medication did not stop the bleeding, and I have had very bad joint and bone pain because of it. So, I went back to my doctor and told her about this issue. My doctor decided to prescribe another medication, but my Medicaid doesn't cover these specific pills. So yeah, I am suffering because of that. At night, I cannot sleep properly and am sweating a lot." —Lina, Iraqi woman, Age 38
	"There was something wrong with my teeth and I needed a root canal. But this root canal isn't covered by Medicaid. The doctor said I can pay from the pocket. But I said I don't have enough money. They said, "We can take the tooth out," and I agreed because I had no other choice. Now I'm missing one of my teeth. I suffer from this now." —Kasim, Iraqi man, Age 31
Problems with health insurance: Confusion about insurance coverage	"So we are not very comfortable with the insurance. Sometime when you go to the emergency room and ask them, 'Okay, will this be covered by the insurance?' They say, 'I think so, but it is not guaranteed.' So, there is no fixed rule about this." —Akram, Iraqi man, Age 42
	Inadequate communication with providers
No access to interpretation	"The first thing when I go to the hospital I cannot understand what the doctor says to me and it is very hard to find an interpreter to explain everything for me …." —Ibrahim, Iraqi man, Age 43
Misunderstanding due to regional or national language differences	"I went to the dentist … They provided me with a Palestinian interpreter, but it was very hard for me to understand her sometimes. I needed to ask her to repeat again, but sometimes I would feel embarrassed … I refused to submit the papers or take my child in on the day of the surgery. My social worker advised me to do the surgery because she said if I keep refusing, my insurance company could call the police on me, or sue me." —Marceline, Iraqi woman, Age 19

> First, when we came here we were fine because [refugee resettlement programs] were paying for our rent for three months. After that, they cut paying the rent. We already applied to the Social Security Department, but they are still reviewing our files and we don't know what's going to happen. This makes me tired. I don't feel good.

Sara's financial problem was worsened when her family received furniture from a resettlement agency that was infested with bed bugs. She was forced to pay to wash everyone's clothes and hire an exterminator at a cost of $600, making it impossible to pay rent that month. Their physical health further worsened because of the postresettlement stressors they experienced and the subsequent emotional distress, which prevented them from sleeping. "We are so worried the bed bugs will come and bite us while we are asleep. So, we don't even get enough sleep." Sara's situation demonstrates how unfamiliarity with a new system, uncertainty, and recurring financial stressors can create a cascade of stressors that impact mental and physical health. Other participants described how denial of government assistance, including disability benefits, and difficulties finding employment affected physical health (see Table 1).

Low Perceived Social Support Leading to Emotional Distress and Poor Physical Health. Besides financial difficulties, some participants expressed not having the social support they needed. This was true for some women, who expressed that caring for their families led to feeling overwhelmed and physically exhausted. Telenaz, an Iraqi, described how lack of social support negatively impacted her health,

> I was thinking when I will come to America I will feel comfortable, I will rest a little bit, I will feel healthier, but when I came here more pressure was on me. As a mother, I'm the center of the pressure of all of the things that will happen to my kids … I'm so tired, exhausted and upset with everything.

Moreover, Telenaz developed back pain from lifting her disabled child. She was the only one who could take care of him while her kids and husband went to school or worked. She continued to lift him, exacerbating her condition despite physical therapy. Although she did not attribute her back pain to emotional distress, as in the other cases presented, Telenaz's situation shows how low levels of social support can directly impact physical health.

Limited Health Care Access Leading to Emotional Distress and Poor Physical Health. Many participants reported difficulties addressing their health needs. These difficulties stemmed from problems accessing health care services, problems receiving optimal health care due to insurance coverage, or inadequate communication with their providers. These barriers contributed to their feelings of emotional distress and, in some cases, worsened their physical health.

Low Efficacy of Health Care. Lava, a 37-year-old Iraqi woman, faced difficulties taking care of her son, who experienced significant gastrointestinal dysfunction for several years. Despite going to several physicians, no definitive diagnosis had been made. As a result, Lava felt that her doctors were unhelpful, and she was left to worry about him alone. This made her tired and distressed. Lava admitted to feeling helpless because of the lack of support from her son's providers. "What can I do if they are not prescribing anything or giving me any good solutions. What can I do?"

Access to Health Care Services. Access to health care services was a problem for some participants and was related to either not having a provider or not being able to get to the clinic or hospital. Brigid, a 36-year-old woman from Uganda, did not have a provider when she arrived in the United States and said she was not able to get prenatal care (see Table 1). She subsequently had a miscarriage and suffered from severe psychological distress afterward: "I had to go to see a psychologist because I was going crazy. I didn't know what was happening to me."

Another participant, Sara, was unable to make it to an appointment to address her physical health problems because she got lost on the way.

> I went by bus to the appointment, but when the bus dropped me off I couldn't find the clinic. I called my husband and told him I'm lost, I don't know where I am. He told me to come back home. So I missed my appointment.

Nana, a 28-year-old woman from Afghanistan, said her family had a troublesome night when they had difficulties getting a family member to the hospital. "There was a night when she got sick and we asked people where the hospital is or how to get to a clinic, but nobody was helpful." Nana was eventually able to find out the hospital location from her neighbor. However, when they arrived at the emergency department, they were told they did not have insurance and would have to pay out of pocket. After the long wait, Nana decided to take her family member home without treatment.

Problems With Health Insurance. Difficulties with insurance were the most common barrier mentioned by participants who sought to address their physical health needs. Participants mostly described difficulties receiving the care they needed related to the high cost of medications and services not covered by their plans. This typically resulted in negative health outcomes. Lina, a 38-year-old Iraqi woman, reported that because her Medicaid plan did not cover a particular birth control pill for menorrhagia, she had to suffer from the side effects of a contraceptive she did not tolerate (see Table 1).

Another participant, Kasim, a 31-year-old Iraqi male, mentioned that he felt he had few options when his insurance plan would not cover a root canal procedure. He said he did not have enough money to pay for it without coverage. As a result, he opted out of the procedure and chose the less optimal solution to alleviate his tooth pain (see Table 1). Other participants also mentioned concern for their physical health because of their insurance coverage. Participants described problems with out-of-network providers, providers who would not take Medicaid, and problems with temporary disenrollment (see Table 1).

Although problems with health insurance coverage are not unique to refugees, their lack of familiarity with the U.S. health care system may lead to feelings of distrust. A potential consequence of health care distrust is the documented underutilization of health care services by migrants, which also leads to increased morbidity and mortality. Additionally, our data show that health insurance plans may restrict health care decision making. This directly led to worse physical health for many refugee participants in the study.

The above examples demonstrate problematic situations in which health may worsen because of the first potential barrier refugees face—accessing care. This places their health at risk. As an example, Brigid's lack of access to primary prenatal care may have contributed

to the loss of her pregnancy and certainly led to severe psychological distress, including hospitalization for suicidality.

Inadequate Communication With Providers Contributing to Emotional Distress and Poor Physical Health. Some participants mentioned not having access or inconsistent access to interpretation services, which contributed to difficulties in accessing health care. Ibrahim, a 43-year-old man, from Iraq said he sometimes did not have access to an interpreter, especially in emergency situations (see Table 1).

Phone and face-to-face interpretation services were often available to participants when seeking health care; however, some still had difficulties communicating with their providers. In some instances, participants had trouble understanding their interpreters. Marceline, a 19-year-old woman from Iraq, mentioned that she was given a Palestinian interpreter at the dentist's office during an appointment for her child. She had trouble understanding what her interpreter was saying due to the differences between Palestinian and Iraqi Arabic. She admitted to feeling uncomfortable asking her interpreter to repeat several times over, which resulted in confusion about the treatment plan and emotional distress related to fears about government or insurance company intervention over not providing adequate treatment for her child (see Table 1).

Marceline's is an example of the development of distrust toward health care providers, which occurred due to interpretation difficulties. This highlights the importance of provider–patient communication for refugees seeking health care, which is necessary for making informed and autonomous decisions. Moreover, this example demonstrates the importance of interpretation that matches the language and/or dialect spoken by participants and that includes attention to subtle aspects of cultural values and understanding beyond language.

In summary, financial instability and uncertainty from limited governmental financial assistance, unforeseen expenses, and unemployment contributed to high levels of emotional distress among recently resettled refugees. Low perceived social support from health care providers and family members, family separation, and responsibilities for caring for family members without family or community support were prominent social stressors that respondents reported were leading to emotional distress and worse physical health. Health care-related stressors, including lack of a provider or knowledge of how to access health services, insurance-related limitations, and poor patient–provider communication, also led to frustration with the U.S. health care system, resulting in feelings of distress and exacerbation of physical health problems. While there were differences in the perspectives according to country of origin, namely Iraqis expressed complaints about health care access more than other groups, this could be explained by having experienced readily available, low-cost health care in Iraq, compared with Africans and Afghans who often did not have access to high-quality health care in their home countries. Overall, the similarity of experiences in each of the thematic areas across the groups was greater than differences that may be explained by multiple factors, some of which were not captured in our data. Thus, we chose to highlight the potential importance of these relationships/dynamics across the three populations. These findings suggest that postresettlement stressors, emotional distress, and physical health are perceived as tightly intertwined by recently resettled refugees, and they guided our development of quantitative hypotheses to test the ways in which these factors may operate in patterns of stress proliferation and a negative self-perpetuating feedback loop mechanism (see Figure 1, for hypothesized relationships developed from qualitative data to be tested quantitatively).

Quantitative Study

The present study included longitudinal quantitative data, which allowed for the testing of specific hypotheses that emerged from the qualitative data. Using a longitudinal modeling approach enabled a more robust exploration of the relationships among four stressors identified in the qualitative data as impacting refugees' physical health (difficulty accessing resources, difficulty accessing health care, low social support, and economic stress—described as postresettlement stressors for simplicity moving forward) and two health outcomes (emotional distress and global health satisfaction). Based on existing literature and our qualitative findings, we hypothesized that postresettlement stressors would influence refugees' emotional distress over time, resulting in poorer global health satisfaction (Hypothesis 1). However, it is also plausible that postresettlement stressors were contributing directly to poorer global health satisfaction over time, which resulted in increased emotional distress (Hypothesis 2). We also hypothesized that emotional distress would predict poorer global health satisfaction (Hypothesis 3); and that greater global health satisfaction would predict reductions in emotional distress (Hypothesis 4). Covariates were tested including RCT group status (0 = control and 1 = intervention) alongside main study variables to further isolate the unique influence of postresettlement stressors on both emotional distress and global health satisfaction over time.

Quantitative Measures

All quantitative measures were translated into Arabic, Swahili, Kinyarwanda/Kirundi, Dari, and Pashto and then back-translated to English using a rigorous process. Reliability and validity were assessed. For further description of these processes, see Goodkind et al. (2020). See Table 2 for quantitative measure descriptive statistics.

Dependent Variables. *Emotional distress (Times 2 and 3)* was measured using the Hopkins Symptom Checklist (HSC-25). The HSC-25 is a self-report measure of anxiety and depression symptoms that has been used with populations throughout the world including refugees and was rated by Hollifield et al. (2002) in their review of mental health measures for refugees as one of only two instruments to meet all five of their established criteria. Response choices for each item are on a Likert-type scale ranging from 1 (*not at all*) to 4 (*extremely*). The HSC-25 produces three scores: total (mean of all 25 items), depression (mean of the 15 depression items), and anxiety (mean of the 10 anxiety items). Prior research has shown that the total score is highly correlated with severe emotional distress of unspecified diagnosis, and that the depression score is correlated with major depression as defined by the *Diagnostic and Statistical Manual of Mental Disorders* of the American Psychological Association, Version-IV. Due to cultural inappropriateness and based on feedback from bicultural team members, we removed one item from the depression scale ("loss of sexual interest or pleasure"). We used the mean score of all 24 items. A score above 1.75 suggests

clinically significant distress; 22.1% and 19.05% of participants had scores above this cutoff at T2 and T3, respectively.

Global health satisfaction (Times 2 and 3) was examined using a single item from the World Health Organization Quality of Life scale that asked participants about their satisfaction with their health during the prior 4 weeks to being surveyed (item: How satisfied are you with your health in the last 4 weeks?). Responses were collected on a 5-point Likert-type scale, with higher scores indicating greater satisfaction with their overall health (1 = *very dissatisfied* to 5 = *very satisfied*). Global self-reported health measures such as this have been found to be valid predictors of actual physical health (Cullati et al., 2018; Wu et al., 2013).

Independent Variables. *Difficulty accessing resources (Time 1)* was measured using 10 questions that evaluated participants' perceptions regarding the level of difficulty in accessing resources in their community (sample items: How difficult has it been to access government assistance? How difficult has it been to accessing childcare resources?). Responses were collected on a 4-point Likert-type scale from 1 (*not at all difficult*) to 4 (*very difficult)*. We used the mean score of all 10 items at Time point 1 (T1).

Difficulty accessing health care (Time 1) was assessed using four questions evaluating participant perceptions of difficulty accessing health care for themselves and their family. Responses were collected on a 4-point Likert-type scale with higher scores indicating greater difficulty accessing health care (1 = *not difficult at all* to 4 = *very difficult)*. The questions asked about the participant's: difficulty in accessing health care, perception of difficulty in accessing health care in the future, difficulty in accessing health care for household member(s) (including family and roommates), and perception of difficulty in accessing health care in the future for household member(s) (including family and roommates). Questions were combined to form a scale.

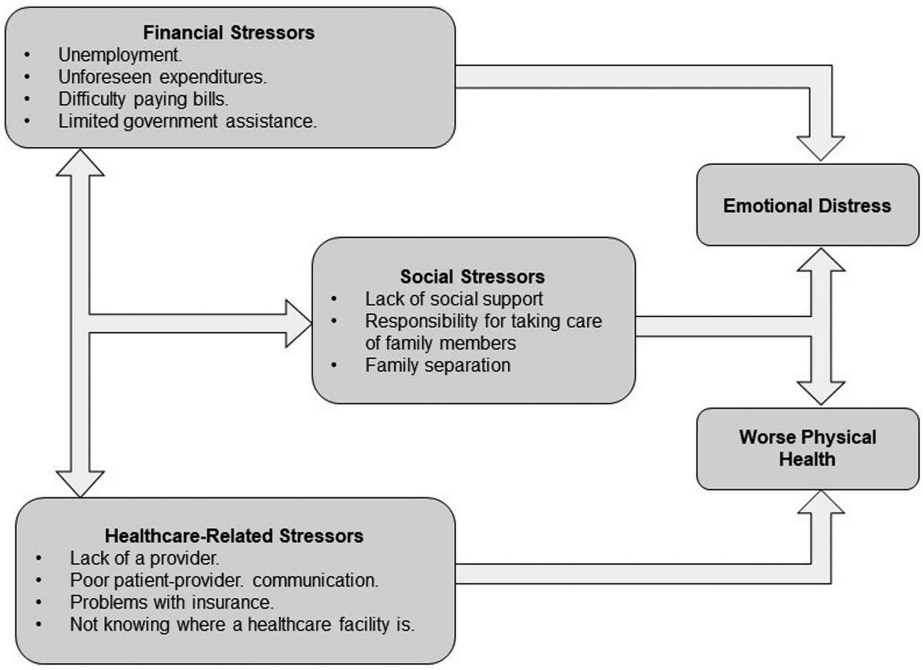
Social support (Time 1) was measured using the Multi-Sector Social Support Inventory Scale (MSSSI; Layne et al., 2009). The MSSSI includes 27 items assessing perceived support from family, one's ethnic community, and community members outside of one's ethnic community. Each item is scaled from 0 (*never*) to 4 (*almost always*) and higher scores indicate greater perceived social support. Participants' mean scores of family support, one's ethnic community support, and nonethnic community member support were combined to create an overall mean score of 1.92 (SD = 0.68; Cronbach's α = 0.96). Layne et al. (2009) have reported that the MSSSI has "acceptable to good" test–retest reliability and convergent validity. For examining "low social support," items were reverse coded.

Economic stress (Time 1) was measured using a measure from three questions assessing how participants felt about their financial situation, all on a scale of 0 (*very dissatisfied*) to 6 (*very satisfied*). In the analyses, these were reverse coded so that a higher score would indicate higher stress (0 = *very satisfied* and 6 = *very dissatisfied*). The questions asked about satisfaction with income, employment situation, and housing. Questions were combined to form a scale.

Covariates. At T1, we controlled for other known correlates to identified postresettlement stressors, emotional distress, and global

Figure 1

Postresettlement Stressors and Decreased Access to Health Care Resources May Lead to Increased Levels of Stress and Worse Physical Health



Note. Stress and worse physical health may perpetuate each other.

Table 2

Participant Demographics and Measurement of Descriptive Statistics

Categorical variable	No. (%)	Difficulty accessing resources T1, *M* (*SD*) 3.41 (0.06); α = 0.80	*F*/*t* test/Pearson correlation	Difficulty accessing health care T1, *M* (*SD*) 3.70 (1.14); α = 0.81	*F*/*t* test/Pearson correlation	Low social support T1, *M* (*SD*) 2.08 (0.78); α = 0.96	*F*/*t* test/Pearson correlation	Economic stress T1, *M* (*SD*) 3.32 (1.22); a = 0.70	*F*/*t* test/Pearson correlation
Gender									
Male	138 (48.5%)	3.39 (0.08)	$t(290) = 1.31$, $p = .10$	4.25 (0.81)	$t(290) = -0.57$, $p = .67$	1.91 (0.05)	$t(290) = -0.77$, $p = .76$	3.12 (0.07)	$t(290) = -0.23$, $p = .59$
Female (=1)	152 (51.5%)	3.26 (0.07)		3.21 (0.69)		2.19 (0.21)		3.14 (0.07)	
Nationality									
Iraqi/Syrian (reference)	95 (32.6%)	3.35 (0.76)	$F(2, 290) = 2.24$, $p = .09$	3.35 (0.76)	$F(2, 290) = 2.09$, $p = .19$	2.91 (0.52)	$F(2, 290) = 8.38$, $p < .01$	3.02 (0.91)	$F(2, 290) = 18.39$, $p < .001$
Afghan (=1)	103 (35.4%)	3.35 (0.73)		3.56 (0.73)		1.54 (0.62)		3.10 (0.86)	
Great Lakes African (=1)	92 (31.7%)	3.37 (0.65)		3.37 (0.65)		1.80 (0.71)		3.28 (0.88)	
Marital status									
Single (reference)	96 (32.9%)	3.54 (0.52)	$F(3, 279) = 1.65$, $p = .16$	3.59 (1.22)	$F(2, 279) = 3.61$, $p = .06$	1.81 (0.54)	$F(3, 278) = 1.03$, $p = .38$	2.96 (0.95)	$F(3, 279) = 1.35$, $p = .25$
Married (=1)	169 (58.4%)	3.39 (0.80)		3.34 (1.18)		2.19 (0.49)		3.23 (0.85)	
Widowed (=1)	19 (6.5%)	3.39 (0.71)		3.05 (1.05)		2.72 (0.78)		3.12 (0.87)	
Divorced (=1)	6 (2.1%)	2.84 (0.83)		2.16 (1.16)		1.33 (0.75)		3.16 (0.87)	
RCT intervention groups (parent study)									
Intervention group	119 (40.89%)	3.45 (0.05)	$t(289) = 0.59$, $p = .27$	3.11 (0.08)	$t(288) = 0.35$, $p = .72$	2.56 (0.28)	$t(290) = -2.73$, $p < .001$	3.10 (0.06)	$t(290) = -0.73$, $p = .46$
Control group	171 (59.11%)	3.40 (0.06)		3.06 (0.09)		1.74 (0.15)		3.18 (0.07)	
Continuous variable	*M* (*SD*)								
Age (18–71)	34.60 (11.53)	−0.13**		0.19**		0.14**		0.15**	
Number of people in household (1–11)	5.01 (2.18)	−0.05		0.12**		0.03		−0.02	
Time in the United States measured in weeks (0–166.57)	29.91 (27.96)	−.10*		−0.04		−0.20**		−0.05	
Monthly income ($0.00–$3,000.00)	706.79 (667.77)	−0.14**		−0.10*		−0.27*		−0.15*	

Categorical variable	No. (%)	Emotional distress T2, *M* (*SD*) 1.48 (0.57); α = 0.95	F/*t* test/Pearson correlation	Global health satisfaction T2, *M* (*SD*) 3.38 (1.21)	F/*t*-test/pearson correlation	Emotional distress T3, *M* (*SD*) 1.36 (0.46); α = 0.96	F/*t*-test/pearson correlation	Global health satisfaction T3, *M* (*SD*) 3.51 (1.11)	F/*t*-test/pearson correlation
Gender									
Male	138 (48.5%)	1.43 (0.04)	$t(290) = 3.51$, $p < .01$	3.51 (0.10)	$t(290) = -3.72$, $p < .001$	1.33 (0.04)	$t(290) = 3.81$, $p < .01$	3.68 (0.09)	$t(290) = -2.79$, $p < .001$
Female (=1)	152 (51.5%)	1.53 (0.05)		3.26 (0.10)		1.56 (0.05)		3.85 (0.09)	
Nationality									
Iraqi/Syrian (reference)	95 (32.6%)	1.76 (0.67)	$F(2, 290) = 11.66$, $p < .01$	3.01 (1.25)	$F(2, 290) = 4.93$, $p = .09$	1.67 (0.69)	$F(2, 290) = 11.65$, $p < .01$	3.24 (1.21)	$F(2, 290) = 3.04$, $p < .05$
Afghan (=1)	103 (35.4%)	1.35 (0.53)		3.56 (1.24)		1.36 (0.54)		3.58 (1.27)	
Great Lakes African (=1)	92 (31.7%)	1.32 (0.36)		3.57 (1.01)		1.33 (0.38)		3.61 (0.98)	
Marital status									
Single (reference)	96 (32.9%)	1.34 (0.41)	$F(3, 279) = 5.90$, $p < .01$	3.59 (1.22)	$F(3, 279) = 3.61$, $p < .05$	1.33 (0.43)	$F(3, 279) = 2.77$, $p < .05$	3.26 (0.87)	$F(3, 279) = 2.81$, $p < .05$
Married (=1)	169 (58.4%)	1.50 (0.59)		3.34 (1.18)		1.48 (0.61)		3.04 (0.92)	
Widowed (=1)	19 (6.5%)	1.80 (0.72)		3.05 (1.05)		1.72 (0.77)		2.55 (0.75)	
Divorced (=1)	6 (2.1%)	2.06 (1.00)		2.16 (1.17)		1.75 (0.33)		3.00 (0.70)	

(*table continues*)

Table 2 (*continued*)

Categorical variable	No. (%)	Emotional distress T2, *M* (*SD*) 1.48 (0.57); α = 0.95	F/*t* test/Pearson correlation	Global health satisfaction T2, *M* (*SD*) 3.38 (1.21)	F/*t*-test/pearson correlation	Emotional distress T3, *M* (*SD*) 1.36 (0.46); α = 0.96	F/*t*-test/pearson correlation	Global health satisfaction T3, *M* (*SD*) 3.51 (1.11)	F/*t*-test/pearson correlation
RCT intervention groups (parent study)									
Intervention group	119 (40.89%)	1.60 (0.05)	$t(290) = -2.86$, $p < .01$	3.44 (0.09)	$t(290) = 1.06$, $p = .28$	1.53 (0.04)	$t(290) = -2.01$, $p < .05$	3.06 (0.08)	$t(289) = 0.28$, $p = .77$
Control group	171 (59.11%)	1.40 (0.04)		3.29 (0.11)		1.39 (0.04)		3.09 (0.07)	
Continuous variable	*M* (*SD*)								
Age (18–71)	34.60 (11.53)	0.22***		−0.24***		0.22***		−0.33***	
Number of people in household (1–11)	5.01 (2.18)	−0.06		−0.06		−0.11*		−0.01	
Time in the United States measured in weeks (0–166.57)	29.91 (27.96)	0.07		0.02		0.11*		−0.04	
Monthly income ($0.00–$3,000.00)	706.79 (667.77)	−0.02		0.02		0.05		−0.01	

Note. T1 = Time point 1; T2 = Time point 2; T3 = Time point 3; RCT = randomized controlled trial.
* $p < .05$. *** $p < .001$ (two-tailed).

health satisfaction in the literature (Goodkind et al., 2020, 2021), including participant sex (1 = female, 0 = male), nationality, participant age (M = 34.60, SD = 11.53, range = 18–71 years), household size measured in the number of people living in the home (M = 5.01, SD = 2.18, range = 1.00–11.00), time in the United States measured in weeks (M = 29.91, SD = 27.96, range = 0.00–166.57), and monthly income (M = 706.79, SD = 667.77, range = $0.00–$3,000.00). Due to the present study being part of a larger parent RCT intervention, RCT group status (0 = control and 1 = intervention) was examined as a potential covariate (see Goodkind et al., 2020, for explanation of parent RCT intervention study). The examination of these covariates helped further isolate the unique influence of postresettlement stressors on both emotional distress and global health satisfaction over time. Covariates were retained based on influence in final analytic longitudinal model to ensure parsimony.

Quantitative Data Analysis

Three time points of data over 12 months were used to examine longitudinal associations between postresettlement stressors on emotional distress and global health satisfaction. Data at each time point (T1, T2, and T3)[1] were collected at 6-month intervals. Structural equation modeling (SEM) in STATA v.14.2 (StataCorp, 2020) was used to examine these data. All constructs were examined as manifest indicators. This was done to conserve power (Kyriazos, 2018). Autoregressive paths were estimated for the outcomes of emotional distress and global health satisfaction at T2 and T3. Controlling for autoregressive effects helped provide information about the stability of the outcome variables over time, as well as reduce bias in parameter estimates, and provide insight into the temporal sequence of relations between study variables (Selig et al., 2012).

To assess reciprocating effects, cross-lagged paths were also generated. Estimating these paths allowed for the assessment of cascading and indirect effects between postresettlement stressor predictors and outcomes at T3, which helps provide additional information on the longitudinal relationships examined in this study.

Full information maximum likelihood estimation was used. Models were considered an acceptable fit if satisfying at least two of the three following criteria: chi-square (χ^2) value ($p \geq .05$), though χ^2 alone can be sensitive to sample size (Maydeu-Olivares, 2017); goodness of fit index (GFI) and comparative fit index (CFI) are ≥.95 (adequate if ≥.90); Tucker–Lewis index (TLI) ≥.95 and can exceed 1.00 (inadequate if less than ≤.90); and the root-mean-square error of approximation (RMSEA) was ≤.06 (adequate if ≤.09; Maydeu-Olivares, 2017). Akaike information criterion (AIC) and Bayesian information criterion (BIC) were used to compare model fit between model (Huang, 2017; Lai, 2021). Mediation was tested using bias-corrected bootstrap confidence intervals (CIs). A significant indirect effect is present when CIs do not include zero. Skew and kurtosis were within normal distribution ranges (±2). No conspicuous outliers were identified.

[1] A fourth time point of data collection was completed in the parent study (see Goodkind et al., 2020). This fourth time point was shorter in duration (3 months) than the other measured time points (6-month intervals). To maintain 6-month intervals between time points for analyses in the present study, we made a methodological decision to not include this fourth time point that was predominantly collected to assess intervention effects from the RCT parent study.

Quantitative Results

Quantitative Descriptive Statistics and Correlations. Sociodemographic descriptions, as well as means, standard deviations, and between-group analyses, are presented in Table 2. Bivariate correlations are presented in Table 3. Independent samples *t* tests, analysis of variance tests, and χ^2 tests were conducted to assess differences between ordinal covariates and primary study variables. Between-group analyses revealed several mean-level differences ($p < .05$). See Table 2 for results.

Test of the Hypothesized Longitudinal Model With Cross-Lagged and Autoregressive Paths. The longitudinal model fit the data well: $\chi^2(16) = 18.80$, $p = .22$; RMSEA = 0.03, 95% CI (0.00, 0.05); GFI = 0.97; CFI = 0.99; TLI = 0.98; AIC = 6607.51; BIC = 6781.41. See Figure 2. This model accounted for a significant amount of the variance in emotional distress (T2 = 43%; T3 = 65%) and global health satisfaction (T2 = 54% and T3 = 75%). Several of the covariates were related to emotional distress and global health satisfaction. For example, female sex was related to both emotional distress ($\beta = 0.17$, $p < .001$, 95% CI [0.07, 0.27]) and global health satisfaction at T2 ($\beta = -0.13$, $p < .05$, 95% CI [−0.22, −0.01]). Furthermore, Iraqi identity was related to emotional distress at T2 ($\beta = 0.19$, $p < .01$, 95% CI [0.07, 0.27]). Additional covariates including Afghan identity and Great Lakes African identity, as well as marital status and RCT intervention group, were removed from model due to nonsignificance. See Table 4 for unstandardized and standardized regression coefficients.

Direct associations between T1 and T2 showed that difficulty accessing resources had a positive direct effect on emotional distress ($\beta = 0.26$, $p < .001$, 95% CI [0.16, 0.36]) and negative effect on global health satisfaction ($\beta = -0.29$, $p < .001$, 95% CI [−0.40, −0.18]). Difficulty accessing health care had a negative effect on global health satisfaction ($\beta = -0.10$, $p < .05$, 95% CI [−0.21, −0.01]). Low social support had a positive effect on emotional distress ($\beta = 0.13$, $p < .05$, 95% CI [0.001, 0.23]) and negative effect on global health satisfaction ($\beta = -0.15$, $p < .05$, 95% CI [−0.21, −0.002]). Economic stress had a negative effect on global health satisfaction ($\beta = -0.24$, $p < .05$, 95% CI [−0.45, −0.03]).

Cross-lagged and autoregressive paths showed that emotional distress at T2 had a negative effect on global health satisfaction at T3 ($\beta = -0.57$, $p < .001$, 95% CI [−1.17, −0.45]) and maintained association with emotional distress at T3, displaying stability ($\beta = 0.74$, $p < .001$, 95% CI [0.53, 0.88]). Global health satisfaction at T2 maintained an effect on global health satisfaction ($\beta = 0.76$, $p = .001$, 95% CI [0.07, 0.10]); however, it did not have an effect on emotional distress at T3 ($\beta = 0.10$, $p = .76$, 95% CI [−0.01, 0.03]).

Indirect Effects. Indirect effects were examined between postresettlement stressors (T1) and outcomes of emotional distress and global health satisfaction at T2 through T3 emotional distress and global health satisfaction. To examine one potential mediator, we constrained the pathway between the other potential mediator and outcome of interest. Bias-corrected bootstrap CIs were calculated.

At T1, difficulty accessing resources had an indirect effect on emotional distress at T3 (indirect effect: −0.12, $p < .001$, 95% CI [0.26, 0.64]) and global health satisfaction at T3, through emotional distress at T2 (indirect effect: −0.45, $p < .001$, 95% CI [0.26, 0.64]). At T1, difficulty accessing resources also had an indirect effect on

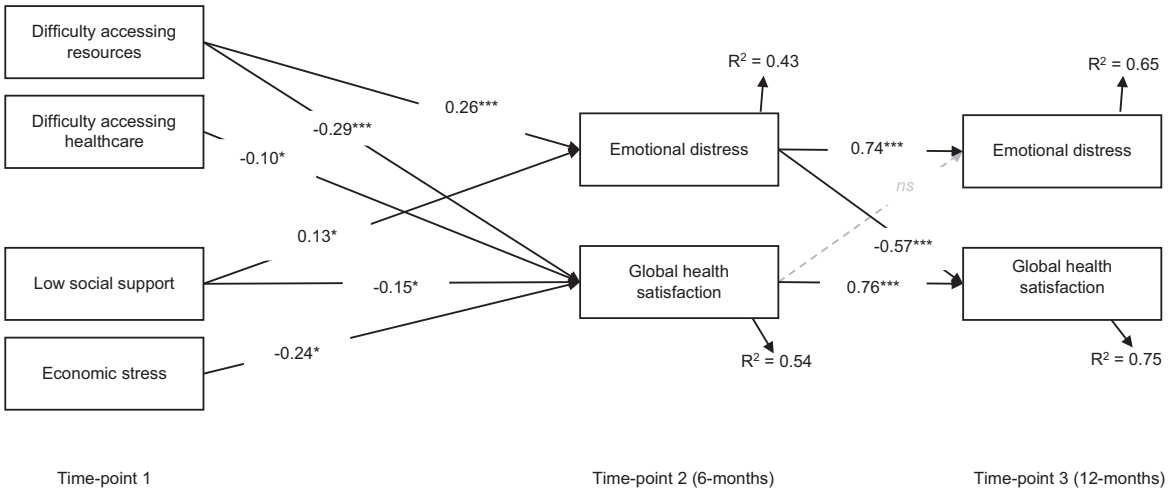
Table 3
Means, Standard Deviations, and Correlations Among Primary Study Variables and Covariates (N = 290)

Primary study variables and covariates	1. Age (in years) T1	2. Household size T1	3. Time in the U.S. (in weeks) T1	4. Monthly income T1	5. Difficulty accessing resources T1	6. Difficulty accessing health care T1	7. Low social support T1	8. Economic stress T1	9. Emotional distress T2	10. Global health satisfaction T2	11. Emotional distress T3	12. Global health satisfaction T3
1. Age (in years) T1	—											
2. Household size T1	0.01	—										
3. Time in the United States (in weeks) T1	0.23***	−0.1	—									
4. Monthly income T1	0.07	0.32**	0.31***	—								
5. Difficulty accessing resources T1	−0.13**	−0.05	−.10*	−0.14**	—							
6. Difficulty accessing health care T1	0.19**	0.12**	−0.04	−0.10*	0.41***	—						
7. Low social support T1	0.14**	0.03	−0.20**	−0.27*	−0.06	0.12*	—					
8. Economic stress T1	0.15**	−0.02	−0.05	−0.15*	0.37***	0.33***	0.13*	—				
9. Emotional distress T2	0.22***	−0.06	0.07	−0.02	0.15*	0.28**	0.19**	0.13**	—			
10. Global health satisfaction T2	−0.24***	−0.06	0.02	0.02	0.05	−0.25***	0.06	−0.24***	−0.52***	—		
11. Emotional distress T3	0.22***	−0.11*	0.11*	0.05	0.14*	0.18*	0.15**	0.13*	0.74***	−0.37***	—	
12. Global health satisfaction T3	−0.33***	−0.01	−0.04	−0.01	−0.04	−0.16***	−0.05	−0.24***	−0.52***	0.59***	−0.61***	—

Note. T1 = Time point 1; T2 = Time point 2; T3 = Time point 3.
* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed).

Figure 2

Longitudinal Path Model Between Postresettlement Stressors (T1) and Emotional Distress and Global Health Satisfaction (T2 and T3)



Note. Only significant standardized estimates are provided to enhance the clarity of the figure. Correlations among exogenous variables are not depicted. Time point 1 covariates were Iraqi identity and female identity (not depicted in figure; see Table 3). χ^2 = Chi-square; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root-mean-square error of approximation; CI = confidence interval; AIC = Akaike information criterion; BIC = Bayesian information criterion; GFI = goodness of fit index; T1 = Time point 1; T2 = Time point 2; T3 = Time point 3. Nonsignificant paths were removed for model parsimony. Standardized β-weights reported. Model fit: $\chi^2(16) = 18.80$, $p = .22$; RMSEA = 0.03, 95% CI [0.00, 0.05]; GFI = 0.97; CFI = 0.99; TLI = 0.98; AIC = 6607.51; BIC = 6781.41.
* $p < .05$. *** $p < .001$ (two-tailed). *ns* = $p > .05$.

global health satisfaction at T3, through global health satisfaction at T2 (indirect effect: −0.40, $p < .001$, 95% CI [−0.58, −0.24]). Low social support had a significant indirect effect support on emotional distress at T3 (indirect effect: 0.015, $p = .02$, 95% CI [0.002, 0.03]) and global health satisfaction at T3 through emotional distress at T2 (indirect effect: −0.05, $p = .02$, 95% CI [−0.14, −0.003]). Low social support also had an indirect on global health satisfaction at T3 through global health satisfaction at T2 (indirect effect: −0.13, $p = .02$, 95% CI [−0.17, −0.03]). Difficulty accessing health care had a significant indirect effect on global health satisfaction at T3 through global health satisfaction at T2 (indirect effect: −0.06, $p = .045$, 95% CI [−0.15, −0.001]) and economic stress on global health satisfaction at T3 (indirect effect: −0.16, $p = .03$, 95% CI [−0.31, −0.01]).

Discussion

Mixed-method analyses allowed us to elucidate several mechanisms that demonstrate how postresettlement stressors lead to worse physical health outcomes among recently resettled refugees in the United States. Through qualitative analyses, we found that participants described financial burdens and low social support contributing to their emotional distress, which some considered to be causative of physical health problems, including hypertension, dyspnea, headaches, and musculoskeletal pain.

Qualitative findings were corroborated by quantitative SEM results that revealed emotional distress as a significant mediator between postresettlement stressors and global health satisfaction. This additional empirical support contributes to the growing evidence that postresettlement stressors related to health care and finances, as well as limited social support, create increased emotional and physical health problems (Goodkind et al., 2020, 2021). While emotional distress as a mediator between postresettlement stressors and global health satisfaction provides a slightly better model-to-data fit, global health satisfaction was an equally important mediator of emotional distress. These findings point toward the reciprocating effects between emotional distress and physical health when predicted by postresettlement stressors (e.g., health care access difficulties, economic stress, difficulty accessing resources, and limited social support). Importantly, these findings not only extend our understanding of stress proliferation theory (Pearlin et al., 2005) but also build on the growing literature that highlights numerous additional adversities (e.g., disruption of social support, economic precarity, lack of access to health care) leading to various negative health-related outcomes among refugees (Chen et al., 2017; Lamkaddem et al., 2015).

Additionally, we found similar difficulties with regards to health care access in this U.S.-based refugee sample compared to studies done in other countries, such as insufficient knowledge related to accessing services and financial barriers (Cheng et al., 2015; Fang et al., 2015; Morris et al., 2009; Spike et al., 2011). Problems with patient–provider communication due to language barriers were also observed, which is another common finding in the literature. Although many participants mentioned using interpretation services provided to them at medical appointments, problems accessing interpretation services or problems with the interpretation services did arise. The resulting poor patient–provider communication contributed to poorer quality care and distrust of the U.S. health care system with possible subsequent underutilization of health care.

Table 4
Unstandardized and Standardized Coefficients, and Significance Levels for Longitudinal Model (N = 290)

Direct effects	Unstandardized β (*SE*)	Standardized β (*SE*)	Standardized [95% CI] *LL*	Standardized [95% CI] *UL*
Direct effects of postresettlement stressors (T1) on emotional distress (T2)				
Difficulty accessing resources (T1) → emotional distress (T2)	0.22 (0.04)	0.26 (0.05)***	0.16	0.38
Low social support (T1) → emotional distress (T2)	0.09 (0.01)	0.13 (0.06)*	0.02	0.24
Direct effects of postresettlement stressors (T1) on global health satisfaction (T2)				
Difficulty accessing resources (T1)→ global health satisfaction (T2)	0.57 (0.18)	−0.29 (0.07)***	−0.4	−0.12
Difficulty accessing health care (T1) → global health satisfaction (T2)	−0.09 (0.03)	−0.10 (0.06)*	−0.17	−0.07
Low social support (T1) → global health satisfaction (T2)	−0.07 (0.04)	−0.15 (0.05)*	−0.22	−0.007
Economic stress (T1) → global health satisfaction (T2)	−0.20 (0.11)	−0.24 (0.07)*	−0.21	−0.005
T3 direct effects				
Emotional distress (T2) → emotional distress (T3)	0.59 (0.03)	0.74 (0.03)***	0.68	0.79
Emotional distress (T2) → global health satisfaction (T3)	−0.42 (0.10)	−0.57 (0.05)***	−0.79	−0.49
Global health satisfaction (T2) → global health satisfaction (T3)	0.74 (0.04).	0.76 (0.04)***	0.54	0.86
Controls				
Iraqi nationality → emotional distress (T2)	−0.14 (0.03)	−0.19 (0.05)**	−0.29	−0.09
Female sex → emotional distress (T2)	0.15 (0.05)	0.13 (0.05)**	0.03	0.23

Note. Model fit: $\chi^2(16) = 18.80$, $p = .22$; RMSEA = 0.03, 95% CI [0.00, 0.05]; GFI = 0.97; CFI = 0.99; TLI = 0.98; AIC = 6607.51; BIC = 6781.41. *LL* = lower limit; *UL* = upper limit; *SE* = standard errors; χ^2 = chi-square; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root-mean-square error of approximation; CI = confidence interval; AIC = Akaike information criterion; BIC = Bayesian information criterion; GFI = goodness of fit index; T1 = Time point 1; T2 = Time point 2; T3 = Time point 3.
* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed).

Furthermore, we found that the structure of U.S. health insurance contributed to a significant amount of confusion and frustration, a finding previously seen among Bosnian immigrants to the United States (Searight, 2003). Participants had trouble understanding which services were covered as well as which providers were in-network. This is a complication not found by studies conducted in countries with socialized care (Fang et al., 2015; Hadgkiss & Renzaho, 2014; Spike et al., 2011). Confusion and frustration with American health care systems and insurance may lead to distrust and decreased health care utilization (Morris et al., 2009; Uba, 1992).

Decreased health care utilization often leads to worse health of migrants (Bozorgmehr & Razum, 2015; Lichtl et al., 2017). However, it is also important to consider the impact of decreased health care utilization on the host country's health care system. For example, in Germany, restricting access to health care resources for asylum seekers and refugees increased health care expenditures and greater financial load on the health care system. The higher costs may be due to delayed treatment and exacerbation of health conditions (Bozorgmehr & Razum, 2015). In a separate study, asylum-seeking children had higher odds of hospitalization and seeking emergency medical services for outpatient conditions compared to the general population, suggesting barriers to affordable primary care services (Lichtl et al., 2017). Similar findings have been observed with Syrian refugees in Turkey (Gulacti et al., 2017). Results support the need for addressing health care access barriers refugees may face in the United States to prevent unnecessary health care-related costs accrued on the system and the individual.

Importantly, our findings contribute to the growing evidence supporting Pearlin et al.'s (2005) theory of stress proliferation, demonstrating how forcible displacement leads to increased exposure to numerous stressors (e.g., economic precarity, difficulty accessing health care resources, limited social support), which contribute to emotional distress and poor physical health. Our study also provides empirical support for fundamental cause theory (Link & Phelan, 1995), which identifies the "flexible" resources of knowledge, money, power, prestige, and beneficial social connections as the central mechanisms through which lack of access to economic and social resources leads to worse health outcomes. Refugees resettled in the United States, as our research has shown, have limited access to flexible resources, irrespective of their previous socioeconomic status in their home country. Phelan et al. (2010) call for research in different contexts that illuminates the ways that access to differential resources and services leads to poorer physical health outcomes. They note the difficulty in separating a priori socioeconomic status from deployment of resources to understand the mechanisms linking socioeconomic status to health disparities. However, our mixed-methods analyses of newly resettled refugees' experiences help disentangle these complexities by illustrating the critical roles of flexible resources and stress proliferation in contributing to negative health outcomes and health disparities.

Implications for Policy and Practice

Several interventions could be useful in improving the health of refugees resettled in the United States. First, and foremost, our results suggest that attention to postmigration economic and social stressors experienced by refugees is essential to reduce their psychological distress and physical health problems that arise from ongoing high levels of distress. Although this requires numerous policy-level interventions, it is also clear that health care systems and providers should adopt more holistic approaches to health. This means not only focusing on physical needs but also incorporating mental and social health into their care plans to support successful social integration (Fang et al., 2015; Khan & Amatya, 2017).

Evidence exists to support the importance of social support and mental health on refugee health outcomes. Feeling welcomed in their host country, having a sense of belonging, having friends from different ethnic/religious groups, and weekly attendance at religious

services have been associated with better physical and mental health (Chen et al., 2017). Furthermore, programs aimed at connecting community members with recently resettled refugees are an effective, cost-efficient way to improve the social support, quality of life, and mental health of refugees (Goodkind, 2005; Goodkind et al., 2014, 2020). Therefore, community-based interventions that provide refugees with support and address their postmigration stressors may benefit refugee physical health. However, despite growing evidence supporting the importance of holistic approaches to health that incorporate mental and social health, these approaches remain relatively rare in practice. In addition, research that demonstrates these relationships among resettled refugees and the mechanisms through which these relationships operate is limited. Furthermore, in terms of funding allocations for recently resettled refugees, the U.S. government supports the provision of physical health care for the first several months after resettlement but does not provide broad support for community-based interventions that build on refugees' strengths and increase social support. Thus, our study findings contribute to bolstering the evidence of the need for these policy and practice priorities.

In terms of access to health care, our findings suggest that several types of interventions are warranted. Systemic-level changes (e.g., universal health care) would address barriers to health care faced not only by refugees but also by many other Americans. Improved and accessible interpretation services, as well as accurate language and dialect matching, are essential. However, our results also highlight another key component of interpretation services: interpretation that includes not only linguistic but also cultural interpretation. Prior studies have also advocated for health care education to prevent misuse or avoidance of health care services (Fang et al., 2015; Mangrio & Sjögren Forss, 2017). For refugees living in the United States, an emphasis on the importance of utilizing primary care services could help decrease the tendency of refugees to avoid care until their health problems become exacerbated, requiring costly tertiary care interventions (Bozorgmehr & Razum, 2015).

Limitations and Future Research Directions

Our study has some limitations. First, we included only refugees who resettled in the United States within the past 3 years. The recent nature of their arrival makes it difficult to parse out whether physical health problems occurred due to postresettlement stress or if some were problems that had persisted or were merely discovered after resettlement. For example, it is possible that clinically silent pathologies, such as hypertension, existed prior to resettlement yet were only discovered after receiving resettlement health care screening upon admission into the United States. This could contribute to a perception of worse physical health. However, even if some problems were not new, postresettlement stressors still likely played a role in emotional distress and contributed to the overall picture of refugee health.

Furthermore, our findings are not generalizable to other host countries, which possess their own unique social and political environments that impact the well-being of migrants. Our study is also not generalizable to every refugee group, as it only reflects the perspectives of refugees from the Great Lakes Region of Africa, Afghanistan, and select countries of the Middle East. Despite these limitations, our findings make important contributions to elucidating some explanations of persistent and increasing physical health problems and disparities experienced by refugees in the United States. Future research should elicit perspectives of other forcibly displaced populations and test the stress proliferation model we identified.

More research is also needed to quantify the use of primary preventative services by migrants, such as cancer screenings, Centers for Disease Control and Prevention-recommended vaccinations, and dental care, which are often not well documented in immigrants, refugees, and asylum seekers (Hadgkiss & Renzaho, 2014; Morris et al., 2009). Qualitative research has suggested that these services are underutilized by refugees due to less recognition of the importance (Morris et al., 2009). Additional research could provide useful information on how to best allocate prevention resources. More research is also needed on the resource and financial impact migrants have on the U.S. health care system. Contradictory results from one study have shown that asylum seekers may actually consume fewer health care resources than the resident population (Bischoff et al., 2009). Furthermore, previous studies examining health care use have mostly looked at the impact migrants have on socialized health care systems with universal health care (Bozorgmehr & Razum, 2015; Gulacti et al., 2017; Lichtl et al., 2017). Data on health care use among U.S. refugees could help direct health care and social policy.

It is also important to note that our measure of economic stress involves participants' subjective assessments of their income, employment, and housing conditions. Thus, this variable may in part reflect participants' ability to cope with their economic conditions. Therefore, the mediating relationships we detected may indicate not only that previous trauma results in poorer economic outcomes but also that previous trauma may make one less able to cope with economic stress. Similarly, our analyses did not include objective measures of physical health outcomes, as this was beyond the scope of the primary focus of the intervention study on improving mental health outcomes. However, because a large number of participants described physical health problems (and how they were related to postresettlement stressors) in their qualitative interviews, we were compelled to undertake the analyses conducted in this article. Although numerous studies have validated self-report single-item measures of health as being highly correlated with objective measures of physical health (Cullati et al., 2018; Wu et al., 2013), future research using medical records or other objective measures of physical health should be conducted to further corroborate our findings.

Finally, our study did not include quantitative measures of postresettlement discrimination experiences. Although refugees' resettlement experiences and well-being are likely impacted by visual indicators of their race, ethnicity, and religion that may result in differential and discriminatory treatment, study participants did not describe postresettlement discrimination when they discussed contributors to mental and physical health problems. Nevertheless, it would be beneficial to include measures of discrimination experienced by resettled refugees in future research. Despite these limitations, the triangulation of our findings using mixed-methods data, as well as our ability to explore mechanisms through which postresettlement stressors contribute to physical and overall health and wellness outcomes, provide insight into understanding and addressing health-related disparities among refugees.

Conclusions

Refugees experience significant challenges after resettlement. Postresettlement stressors (e.g., financial instability, limited social

support, and difficulty accessing resources) contribute to distress, which leads to worse physical health. Refugees are also at a disadvantage in addressing these physical health problems. Complications stem from systemic issues with the U.S. health care system that limit access and language and cultural accessibility, as well as refugees' insufficient knowledge of how to access health care resources; and communication difficulties with providers, which may lead to distrust of the health care system altogether. The result is increased distress and the risk of exacerbation of physical health problems. Besides treating refugee physical health problems as these occur, it is critical to focus on systemic changes that improve health care access for refugees and provide timely social, material, and emotional support after resettlement. These early intervention strategies may provide effective and cost-efficient ways to address the negative health disparities experienced by refugee populations.

Keywords: health care, postmigration stressors, refugee health, health insurance, barriers to health care access

References

Berthold, S. M., Kong, S., Mollica, R. F., Kuoch, T., Scully, M., & Franke, T. (2014). Comorbid mental and physical health and health access in Cambodian refugees in the US. *Journal of Community Health*, *39*(6), 1045–1052. https://doi.org/10.1007/s10900-014-9861-7

Bhatia, R., & Wallace, P. (2007). Experiences of refugees and asylum seekers in general practice: A qualitative study. *BMC Family Practice*, *8*(1), Article 48. https://doi.org/10.1186/1471-2296-8-48

Bischoff, A., Denhaerynck, K., Schneider, M., Battegay, E., & Sendi, P. (2009). Do asylum seekers consume more health care resources? Some evidence from Switzerland. *The Open Pharmacoeconomics & Health Economics Journal*, *1*(1), 3–8. https://doi.org/10.2174/1876824500901010003

Bozorgmehr, K., & Razum, O. (2015). Effect of restricting access to health care on health expenditures among asylum-seekers and refugees: A quasi-experimental study in Germany, 1994–2013. *PLOS ONE*, *10*(7), Article e0131483. https://doi.org/10.1371/journal.pone.0131483

Charmaz, K. (2012). The power and potential of grounded theory. *Medical Sociology Online*, *6*(3), 2–15.

Chen, W., Ling, L., & Renzaho, A. M. N. (2017). Building a new life in Australia: An analysis of the first wave of the longitudinal study of humanitarian migrants in Australia to assess the association between social integration and self-rated health. *BMJ Open*, *7*(3), Article e014313. https://doi.org/10.1136/bmjopen-2016-014313

Cheng, I. H., Vasi, S., Wahidi, S., & Russell, G. (2015). Rites of passage: Improving refugee access to general practice services. *Australian Family Physician*, *44*(7), 503–507.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and constructing mixed method research*. Sage Publications.

Cullati, S., Mukhopadhyay, S., Sieber, S., Chakraborty, A., & Burton-Jeangros, C. (2018). Is the single self-rated health item reliable in India? A construct validity study. *BMJ Global Health*, *3*(6), Article e000856. https://doi.org/10.1136/bmjgh-2018-000856

Fang, M. L., Sixsmith, J., Lawthom, R., Mountian, I., & Shahrin, A. (2015). Experiencing 'pathologized presence and normalized absence'; understanding health related experiences and access to health care among Iraqi and Somali asylum seekers, refugees and persons without legal status. *BMC Public Health*, *15*(1), Article 923. https://doi.org/10.1186/s12889-015-2279-z

Goodkind, J., Ferrera, J., Lardier, D., Hess, J. M., & Greene, R. N. (2021). A mixed-method study of the effects of post-migration economic stressors on the mental health of recently resettled refugees. *Society and Mental Health*, *11*(3), 217–235. https://doi.org/10.1177/2156869320973446

Goodkind, J. R. (2005). Effectiveness of a community-based advocacy and learning program for hmong refugees. *American Journal of Community Psychology*, *36*(3–4), 387–408. https://doi.org/10.1007/s10464-005-8633-z

Goodkind, J. R., Bybee, D., Hess, J. M., Amer, S., Ndayisenga, M., Greene, R. N., Choe, R., Isakson, B., Baca, B., & Pannah, M. (2020). Randomized controlled trial of a multilevel intervention to address social determinants of refugee mental health. *American Journal of Community Psychology*, *65*(3–4), 272–289. https://doi.org/10.1002/ajcp.12418

Goodkind, J. R., Hess, J. M., Isakson, B., LaNoue, M., Githinji, A., Roche, N., Vadnais, K., & Parker, D. P. (2014). Reducing refugee mental health disparities: A community-based intervention to address postmigration stressors with African adults. *Psychological Services*, *11*(3), 333–346. https://doi.org/10.1037/a0035081

Gulacti, U., Lok, U., & Polat, H. (2017). Emergency department visits of Syrian refugees and the cost of their healthcare. *Pathogens and Global Health*, *111*(5), 219–224. https://doi.org/10.1080/20477724.2017.1349061

Hadgkiss, E. J., & Renzaho, A. M. N. (2014). The physical health status, service utilisation and barriers to accessing care for asylum seekers residing in the community: A systematic review of the literature. *Australian Health Review*, *38*(2), 142–159. https://doi.org/10.1071/AH13113

Hollifield, M., Warner, T. D., Lian, N., Krakow, B., Jenkins, J. H., Kesler, J., Stevenson, J., & Westermeyer, J. (2002). Measuring trauma and health status in refugees: A critical review. *The Journal of the American Medical Association*, *288*(5), 611–621. https://doi.org/10.1001/jama.288.5.611

Huang, P. H. (2017). Asymptotics of AIC, BIC, and RMSEA for model selection in structural equation modeling. *Psychometrika*, *82*(2), 407–426. https://doi.org/10.1007/s11336-017-9572-y

Hynie, M. (2018). Refugee integration: Research and policy. *Peace and Conflict: Journal of Peace Psychology*, *24*(3), 265–276. https://doi.org/10.1037/pac0000326

International, QSR. (2012). *QSR International*. NVivo.

Khan, F., & Amatya, B. (2017). Refugee health and rehabilitation: Challenges and response. *Journal of Rehabilitation Medicine*, *49*(5), 378–384. https://doi.org/10.2340/16501977-2223

Kim, Y. J. (2016). Posttraumatic stress disorder as a mediator between trauma exposure and comorbid mental health conditions in North Korean refugee youth resettled in South Korea. *Journal of interpersonal violence*, *31*(3), 425–443.

Kyriazos, T. A. (2018). Applied psychometrics: Sample size and sample power considerations in factor analysis (EFA, CFA) and SEM in general. *Psychology*, *9*(8), 2207–2230. https://doi.org/10.4236/psych.2018.98126

Lai, K. (2021). Using information criteria under missing data: Full information maximum likelihood versus two-stage estimation. *Structural Equation Modeling: A Multidisciplinary Journal*, *28*(2), 278–291. https://doi.org/10.1080/10705511.2020.1780925

Lamkaddem, M., Essink-Bot, M. L., Devillé, W., Gerritsen, A., & Stronks, K. (2015). Health changes of refugees from Afghanistan, Iran and Somalia: The role of residence status and experienced living difficulties in the resettlement process. *European Journal of Public Health*, *25*(6), 917–922. https://doi.org/10.1093/eurpub/ckv061

Layne, C. M., Warren, J. S., Hilton, S., Lin, D., Pasalic, A., Fulton, J., Pasalic, H., Katalinski, R., & Pynoos, R. S. (2009). Measuring adolescent perceived support amidst war and disaster. In B. K. Barber (Ed.), *Adolescents and war: How youth deal with political violence* (pp. 135–176). Oxford University Press.

Lichtl, C., Lutz, T., Szecsenyi, J., & Bozorgmehr, K. (2017). Differences in the prevalence of hospitalizations and utilization of emergency outpatient services for ambulatory care sensitive conditions between asylum-seeking children and children of the general population: A cross-sectional medical

records study (2015). *BMC Health Services Research*, *17*(1), Article 731. https://doi.org/10.1186/s12913-017-2672-7

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior*, 80–94. https://doi.org/10.2307/2626958

Lipson, J. G., Weinstein, H. M., Gladstone, E. A., & Sarnoff, R. H. (2003). Bosnian and Soviet refugees' experiences with health care. *Western Journal of Nursing Research*, *25*(7), 854–871. https://doi.org/10.1177/0193945903256714

Mangrio, E., & Sjögren Forss, K. (2017). Refugees' experiences of healthcare in the host country: A scoping review. *BMC Health Services Research*, *17*(1), Article 814. https://doi.org/10.1186/s12913-017-2731-0

Marshall, G. N., Schell, T. L., Wong, E. C., Berthold, S. M., Hambarsoomian, K., Elliott, M. N., Bardenheier, B. H., & Gregg, E. W. (2016). Diabetes and cardiovascular disease risk in cambodian refugees. *Journal of Immigrant and Minority Health*, *18*(1), 110–117. https://doi.org/10.1007/s10903-014-0142-4

Maydeu-Olivares, A. (2017). Maximum likelihood estimation of structural equation models for continuous data: Standard errors and goodness of fit. *Structural Equation Modeling*, *24*(3), 383–394. https://doi.org/10.1080/10705511.2016.1269606

Morris, M. D., Popper, S. T., Rodwell, T. C., Brodine, S. K., & Brouwer, K. C. (2009). Healthcare barriers of refugees post-resettlement. *Journal of Community Health*, *34*(6), 529–538. https://doi.org/10.1007/s10900-009-9175-3

Pearlin, L. I. (1999). The stress process revisited: Reflections on concepts and their interrelationships. In C. S. Aneshensel, & J. C. Phelan (Eds.), *Handbook of the sociology of mental health* (pp. 395–415). Springer. https://doi.org/10.1007/0-387-36223-1_19

Pearlin, L. I., Schieman, S., Fazio, E. M., & Meersman, S. C. (2005). Stress, health, and the life course: Some conceptual perspectives. *Journal of Health and Social Behavior*, *46*(2), 205–219.

Phelan, J. C., Link, B. G., & Tehranifar, P. (2010). Social conditions as fundamental causes of health inequalities: Theory, evidence, and policy implications. *Journal of Health and Social Behavior*, *51*(Suppl. 1), S28–S40. https://doi.org/10.1177/0022146510383498

Schilling, T., Rauscher, S., Menzel, C., Reichenauer, S., Müller-Schilling, M., Schmid, S., & Selgrad, M. (2017). Migrants and refugees in Europe: Challenges, experiences and contributions. *Visceral Medicine*, *33*(4), 295–300. https://doi.org/10.1159/000478763

Searight, H. R. (2003). Bosnian immigrants' perceptions of the United States health care system: A qualitative interview study. *Journal of Immigrant Health*, *5*(2), 87–93. https://doi.org/10.1023/A:1022907909721

Selig, J. P., Preacher, K. J., & Little, T. D. (2012). Modeling time-dependent association in longitudinal data: A lag as moderator approach. *Multivariate Behavioral Research*, *47*(5), 697–716. https://doi.org/10.1080/00273171.2012.715557

Spike, E. A., Smith, M. M., & Harris, M. F. (2011). Access to primary health care services by community-based asylum seekers. *The Medical Journal of Australia*, *195*(4), 188–191. https://doi.org/10.5694/j.1326-5377.2011.tb03277.x

StataCorp. (2020). *Stata statistical software: Release 16.0*. http://www.stata.com/support/faqs/resources/citing-software-documentation-faqs/

Uba, L. (1992). Cultural barriers to health care for southeast Asian refugees. *Public Health Reports*, *107*(5), 544–548. http://www.jstor.org/stable/4597209

United Nations High Commissioner for Refugees [UNHCR]. (2022). *Global trends forced displacement in 2022*. https://www.unhcr.org/globaltrends

Wong, E. C., Marshall, G. N., Schell, T. L., Elliott, M. N., Hambarsoomians, K., Chun, C. A., & Berthold, S. M. (2006). Barriers to mental health care utilization for US Cambodian refugees. *Journal of Consulting and Clinical Psychology*, *74*(6), 1116.

Wu, S., Wang, R., Zhao, Y., Ma, X., Wu, M., Yan, X., & He, J. (2013). The relationship between self-rated health and objective health status: A population-based study. *BMC Public Health*, *13*(1), Article 320. https://doi.org/10.1186/1471-2458-13-320