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Cultural–Economic Stress and Mental Health Among Ukrainian Immigrants Residing in the U.S. Post-Russian Invasion

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The present study investigates the perceived impact of cultural and family-economic stressors on the mental health and well-being of Ukrainian migrants in the United States who arrived either pre- or post-Russian invasion. We used a range of tools for assessment, including the general anxiety disorder (GAD-7), CESD-B-10, Harvard Trauma Questionnaire (HTQ-22), posttraumatic stress disorder (PTSD-17), 10-item Revised Life Orientation Test, Alcohol Use Disorders Identification Test, seven-item Perceived Discrimination Scale, six-item Perceived Context of Reception Scale, Language Stress-7, family-economic stress–13 (FES-13), Survivor's guilt-9, and Satisfaction with Life-5 scales. Utilizing latent profile analysis with a sample of 703 Ukrainian migrants, we identified three distinct classes based on levels of cultural and family-economic stress: low, moderate, and high stress. We found that the high-stress class reported the highest levels of depressive ($M = 27.29$, $SD = 6.02$), anxiety ($M = 12.11$, $SD = 4.30$), and PTSD symptoms ($M = 42.19$, $SD = 11.01$), along with lower life satisfaction ($M = 10.76$, $SD = 4.99$) and higher rates of Survivor's guilt ($M = 23.07$, $SD = 7.57$), trauma ($M = 16.76$, $SD = 5.51$), and alcohol misuse ($M = 14.57$, $SD = 10.84$). Conversely, the low-stress class reported higher levels of optimism ($M = 22.14$, $SD = 5.01$). Importantly, individuals arriving after the invasion were disproportionately represented in the high-stress class, with a significant majority meeting criteria for probable anxiety, depression, and PTSD diagnoses. Furthermore, a substantial portion of high-stress participants met criteria for alcohol dependence, emphasizing the pivotal role of stressors in influencing the mental health of Ukrainian migrants, and suggesting the need for tailored interventions addressing cultural and family-economic stressors. This study enhances our understanding of cultural and family-economic stress theories within a European migrant context, emphasizing the significance of arrival cohort and stress levels in mental health interventions for migrant populations.

Public Policy Relevance Statement

Understanding the various impact of cultural and economic stress on Ukrainian migrants' mental health, among pre- and postinvasion migrants, is critical for making informed public policy decisions. Tailored support programs are required to address the issues faced by migrant populations, particularly those who arrived after the invasion and may experience higher distress. Recognizing these stressors allows governments to build more resilient societies.

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continued

Since declaring independence from Moscow in 1991 (Burenko, 2022; Marples, 2019), Ukraine has faced significant challenges, including the Orange Revolution of 2004 (Wilson, 2024) and the violent Maidan protests of 2013–2014, which led to a change in government and a pro-European foreign policy shift (O'Loughlin et al., 2017; Wilson, 2024). The annexation of Crimea by Russia in 2014 exacerbated tensions, sparking the Donbas conflict in eastern Ukraine and resulting in widespread displacement of Ukrainian citizens (O'Loughlin et al., 2017; Pokotylo & Nashivochnikov, 2021; Vidmar, 2015; Walker, 2023; Wilson, 2024). These conflicts, along with the 2022 Russian invasion, have led to Europe's largest migration crisis since World War II, with millions either internally displaced or seeking refuge in other European countries and in the United States (Duszczyk & Kaczmarczyk, 2022; Walker, 2023).

As of January 2024, approximately 3.7 million people had been displaced within Ukraine, and an additional 7 million had fled the country altogether (United Nations High Commissioner for Refugees, 2024). Moreover, an estimated 14.6 million people are reported to need humanitarian assistance in 2024 (United Nations High Commissioner for Refugees, 2024). More than 500,000 Ukrainians settled in the United States between February 2022 and March 2024 (de Freytas-Tamura, 2023; Montoya-Galvez, 2023). Specifically, as of March 2024, over 187,000 Ukrainians had sought refuge in the United States under the Uniting for Ukraine (U4U) program, and 350,000 entered through other channels.

The U4U initiative provides temporary shelter to Ukrainian citizens and their families, permitting them to reside in the United States for a period of up to 2 years through a system known as parole (Orozco, 2024). Ukrainian migrants arriving under these programs are often trilingual, speaking Ukrainian, Russian, and English. Recent years have seen a notable shift in language use, largely influenced by Russian aggression, where Ukrainians are preferring not to speak Russian. Although empirical work with Ukrainian war migrants in the United States is only beginning to be conducted, empirical research with war migrants in general has indicated high rates of mental health symptomatology as well as cultural stressors, family-economic hardships, poor well-being, and problem drinking (Gerritsen et al., 2006; Steel et al., 2009).

Cultural and Family Economic Stress Theorizing

Cultural stress theory, as proposed by Salas-Wright and Schwartz (2019), provides a framework for understanding and conceptualizing cultural stress among migrants. This theory defines cultural stress as a multidimensional construct encompassing various stressors rooted in racism, colorism, xenophobia, and the challenge of navigating multiple cultural streams. A key focus within cultural stress theory involves the recognition that cultural stress can result from different culturally based challenges that can exert detrimental effects on a wide range of mental health and health behavior outcomes among migrant individuals (Benner et al., 2018; Miller De Rutté & Rubenstein, 2021) such as depression, anxiety, self-esteem as well as substance use (Cano et al., 2015; Lorenzo-Blanco et al., 2019; Meca et al., 2019; A. Romero et al., 2020; Schwartz et al., 2015, 2022). Existing cultural stress literature (e.g., Cano et al., 2015; Schwartz et al., 2015) has concentrated primarily on three dimensions: perceived discrimination (e.g., individuals' perceptions of unfair or differential treatment based on cultural attributes and/or ethnic or racial group membership; de Freitas et al., 2018), negative context of reception (e.g., the extent to which individuals feel unwelcomed in their receiving context, encompassing a general perception of being unwelcomed or experiencing a lack of access to opportunities; Schwartz et al., 2014), and bicultural or acculturative stress (e.g., stressors associated with the pressure of adopting the majority culture while maintaining the heritage culture; A. J. Romero & Roberts, 2003; Torres et al., 2012). Additional cultural stressors have also been documented in the literature, such as language stress (Cervantes et al., 2012). Language stress occurs when individuals experience challenges communicating and being understood (e.g., language barriers, discrimination because of one's accent; Cervantes et al., 2012).

Furthermore, migrants are confronted with stressors that are not solely rooted in cultural factors, such as family-economic stress (FES; Cervantes et al., 2012; Mendoza et al., 2017). Family economic and cultural stressors are strongly interconnected, especially when examined within the framework of the downward theory of economic mobility (Gans, 2009). This theory suggests that migrants who once held professional positions in their home country may find themselves working as technicians or in lower tier occupations upon relocating to the destination country (Gans, 2009). For some migrants and refugees, this downward mobility represents a temporary setback, whereas for others, it becomes a persistent condition that extends throughout their lives and influences the opportunities available to their children. Families facing economic adversity may also experience heightened cultural stress as they navigate challenges related to maintaining traditional customs, beliefs, and practices in the face of economic instability.

Many migrant families often contend with economic challenges stemming from constrained financial resources, unstable employment, and having to adjust to the economic demands of their new destination country. Regardless of the educational background they bring, migration typically results in a deterioration of families' economic circumstances, often accompanied by potential obstacles to accessing stable employment, as well as to accessing social and medical services (Cervantes et al., 2012). Deterioration in economic circumstances may then be associated with migrants' mental health outcomes (e.g., Lecerof et al., 2016) and may be linked with alcohol problems (e.g., M. J. Martin et al., 2019).

Furthermore, recognizing the importance of family-economic stress within the context of cultural stress theory is critical for understanding the numerous issues that migrants encounter and the factors that influence their well-being and adaption. Indeed, here we propose the term "economically informed cultural stress theory" to serve as a proposed conceptual framework that combines components of both cultural stress theory and family-economic stress theory.

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Combining concepts from cultural stress theory and the downward theory of economic mobility can lead to the development of frameworks that recognize the interplay of cultural and economic factors in influencing migrant experiences. Economic hardships often covary with cultural stressors, as evidenced by several studies highlighting the financial struggles encountered by migrants (Cervantes et al., 1991; González-Guarda et al., 2016). Consistent with this integrated theoretical approach, economic stressors such as financial instability and food insecurity often co-occur with cultural stressors such as discrimination, negative context of reception, or language stress to exert significant impacts on well-being and adaptation among migrant communities (Cervantes et al., 2012; Mendoza et al., 2017).

One focus of cultural stress theory, and potentially of its extension into economically informed cultural stress theory, involves differentiating indices of well-being, mental health, traumatic exposure, and other variables across levels or profiles of cultural stress (e.g., Montero-Zamora et al., 2023; Salas-Wright et al., 2024). The integration of family-economic stressors into cultural stress theorizing may be even more powerful and may carry additional implications for intervention and policy, given that food insecurity and financial constraints would be added onto culturally related stressors such as discrimination, negative context of reception, and language difficulties. With reference to crisis migrant population such as Ukrainians, a key question involves whether premigration crisis events (e.g., war exposure) differ significantly across levels or profiles of cultural stress. To the extent to which such differences emerge, interventions or policies to address premigration crisis experiences would need to be integrated with interventions or policies focused on alleviating or offsetting family-economic and cultural stressors.

Crisis Migration: Conceptualization and Consequences

Scholars (Berry, 2017; Steiner, 2023) have delineated various subgroups under the umbrella of international migrants, including voluntary/economic migrants (e.g., with the intention of creating an economically and socially improved life, economic opportunities, marriage, or family unification) and forced migration (e.g., refugees and asylum seekers) due to a well-founded fear of persecution based on race, religion, nationality, or membership in a particular social group or political opinion. However, recent migration literature has added a new category, referred to as crisis migration, which encompasses individuals who find themselves compelled to relocate either to other countries or different regions within their own country (Ertanir et al., 2023; Vos et al., 2021) due to abrupt and often uncontrollable challenges or events arising from events such as wars, natural disasters, political violence, and other emergencies (S. Martin et al., 2014; Salas-Wright et al., 2021). Even though this category can also include refugees and asylum seekers, it is a distinct category characterized by specific features and has been conceptualized as a multidimensional construct. Ertanir et al. (2023) subdivided crisis migration into three phases: *premigration, departure, and aftermath*. In the premigration dimension, individuals navigating crisis migration contend with four fundamental constructs (Salas-Wright et al., in press). First, there is the challenge of material hardship, characterized by lack of or limited economic resources and the struggle to meet basic needs. Second is the dimension of physical danger, encompassing fears for personal or familial safety. Third, crisis migration involves a profound psychological desperation, marked by a compelling and emotion-filled urge to seek refuge elsewhere. Finally, crisis migrants must often depart without warning, can bring with them only what they can carry, and likely cannot arrange housing or work in their destination countries. They may not even know their final destination when they depart. These constructs encapsulate the hardships and challenges faced by individuals even before embarking on the migration journey in the wake of a crisis.

Moving to the aftermath dimension, the focus shifts to the emotional and psychological repercussions of crisis migration: Survivor's guilt and worry. As introduced by Stotz et al. (2015), survivor's guilt entails feelings of remorse for leaving loved ones behind, accompanied by a persistent worry about the safety and hardships faced by those who remain in the crisis context. The decision to assess survivor's guilt in our study originated from a recognition of the strong emotional impact of crisis migration, particularly the complex interplay between survivor's guilt and psychological outcomes. Individuals who are forced to flee their native country due to violence or other disasters may feel tremendous sorrow for abandoning loved ones or for failing to alleviate the suffering of those who remain (Ivey & Sonn, 2020). This sense of guilt and shame can continue for years after the relocation, affecting many facets of psychological health. Furthermore, the timing of migratory events can influence the perception of guilt among crisis migrants. For example, those who left Ukraine after the 2022 invasion may feel guilty about their decision to leave in the midst of war. However, migrants who left between 2014 and 2021, a period of political instability in Ukraine and of conflict with Russia, may also feel more guilty about leaving amid a crisis. By investigating the role of survivor's guilt in crisis migration, we can better understand its complex relationship with mental health outcomes (Ward & Styles, 2012).

Because crisis migration often produces a series of stressful and often traumatic experiences, these experiences can exert tremendous psychological impacts on crisis migrants. Traumatic events, war, and violence exposure can have detrimental effects on mental health among both adults and children (Li et al., 2016; Merry et al., 2017). Numerous studies indicate a prevalence of mental health problems among crisis migrants, although not all crisis migrants experience or report these symptoms. Studies find higher levels of symptoms of posttraumatic stress disorder (PTSD), major depressive, and generalized anxiety disorders (Bustamante et al., 2018; Fazel et al., 2012) among crisis migrants than in the general population (Hynie, 2018; Lustig et al., 2004). Indeed, existing research on Ukrainian crisis migrants reports prevalence of about 30% of moderate to severe psychological distress assessed with elevated posttraumatic stress, depressive, and/or anxiety symptoms (Baier et al., 2022; Buchcik et al., 2023). This heightened susceptibility to mental health challenges was evidenced among internally and internationally displaced Ukrainians. For example, Lushchak et al. (2024) reported that, compared to persons who were not displaced, Ukrainians displaced within and outside Ukraine following Russia's invasion reported dramatic increases in stress, anxiety, and PTSD symptoms. Similarly, other studies (e.g., Kurapov et al., 2023; Seleznova et al., 2023) have found that individuals who were directly exposed to military actions, physical violence, or severe human suffering exhibited high levels of anxiety, depression, stress, and trauma-related symptoms as well as harmful alcohol use (Roberts et al., 2011, 2014). This pattern suggests that being forcibly displaced from one's

home, being exposed to armed conflicts and wars, as having to relocate and adapt a new environment without notice often contribute to distress in the aftermath of war exposure, especially for those who experienced or witnessed it directly (Lushchak et al., 2024).

Crisis Migration and Cultural Stress Among Ukrainian Migrants in the United States

Although the 2022 Russian invasion clearly represents a human-made disaster that displaced many Ukrainians and created mental health problems for some of these individuals, the history of Ukraine since its independence from the Soviet Union is marked by repeated and chronic conflict with Russia, especially since the 2014 Crimea and Donbas battles. Are Ukrainians who arrived in the United States prior to the 2022 invasion also characterized by elevated mental health symptomatology, alcohol problems, family-economic struggles, cultural stressors, poor well-being, and conflict-related trauma? Although individuals who arrived in the U.S. earlier have had more time to recover from their conflict experiences and to adapt to life in the United States, some work has suggested the possibility of delayed-onset symptoms. For some, the 2022 invasion may have reaggravated earlier trauma that appeared to have decreased or resolved. Indeed, delayed-onset PTSD may be associated with exacerbation of existing symptoms, where a specific event (or series of events) often reaggravates the earlier traumatic experiences (Andrews et al., 2007; Bryant & Harvey, 2002). Indeed, Bonanno and Mancini (2012) suggested that exposure to armed conflict may predict elevated levels of both depressive and PTSD symptoms and perhaps elevated anxiety as well.

It may be more useful to group Ukrainians not only in terms of pre- versus postinvasion arrivals, but also in terms of the extent of stressors to which they have been exposed. Cultural and family-economic stress research (e.g., Levitt et al., 2005; Salas-Wright & Schwartz, 2019) suggest that these types of stressors may help to determine how migrants adapt following migration. Indeed, prior work using the same sample used in the present analyses (Alpysbekova et al., in press) suggests that pre- and postinvasion Ukrainians reported equivalent trauma exposure, but that postwar arrivals experienced greater levels of discrimination, negative context of reception, language stress, and family-economic stress. Further, although postinvasion arrivals reported more elevated symptoms of depression, anxiety, and PTSD, as well as more problem drinking, not all postinvasion arrivals were high on these indices—and not all preinvasion arrivals were low. These patterns therefore call for a person-centered examination (Magnusson, 2003) of the association of cultural and family-economic stressors with indices of mental health, well-being (e.g., life satisfaction and optimism), problem drinking, and survivor's guilt—where such an examination would include both pre- and postinvasion Ukrainian migrants in the United States.

Further, the present study is among the first to draw on cultural and family-economic stress theories among Ukrainian migrants to the United States. Cultural stress theory was developed for use with Latin American migrants in the United States (e.g., Lorenzo-Blanco et al., 2019; Schwartz et al., 2015), and family-economic stress theory was developed for use with White Midwestern farm families (Conger et al., 1992) and has been extended to Mexican American families (Hernández et al., 2014; Lawson et al., 2023). It is important to ascertain the extent to which (a) different clusters of Ukrainian migrants would emerge from person-centered analyses with cultural and family-economic stressors used as classifying variables and (b) indicators of mental health, alcohol misuse, trauma, survivor's guilt, and well-being would differ reliably across the clusters that emerged. Accordingly, negative context of reception, discrimination, language stress, and family-economic stress might be chosen as classifying variables in accordance with cultural stress theory (e.g., Cano et al., 2015; Schwartz et al., 2015). Indeed, cultural adaptation-related stressors have been found to impact mental health outcomes among migrant populations. Cultural stress theory, despite being applied predominantly with Latin American migrants (Salas-Wright et al., 2021; Zeledon et al., 2023), offers a useful framework for measuring the psychological impact of acculturation-related stressors on migrant communities.

Trauma is important to consider within crisis migrant populations (e.g., Bonanno & Mancini, 2012; Rasmussen et al., 2020)—indeed, trauma may predispose migrants toward experiencing cultural and family-economic stressors in their new destination countries, such that individuals who experience more premigration trauma may be more likely to anticipate, perceive, or experience discrimination or other cultural stressors (Campo-Arias et al., 2022). Crisis migrants are also likely to leave their countries of origin under duress and can therefore bring with them only what they can carry—and as a result, they may lack access to many basic supplies and may experience severe economic insufficiency (Salas-Wright et al., in press). Drawing from such logic, Ukrainians arriving after the onset of the 2022 invasion may be more likely to report severe trauma and to be categorized into profiles characterized by greater cultural and family-economic stress.

Importance of Person-Centered Approaches

Many studies with crisis migrant samples employ variable-centered approaches that focus on examining associations between and among variables. Such approaches include multiple regression, structural equation modeling, and similar general linear models. Generally, variable-centered approaches assume that everyone in the sample belongs to the same general group and/or are generally unconcerned with potential heterogeneity in the sample of population. Person-centered approaches, on the other hand, focus on identifying sources of unobserved heterogeneity—where a set of classifying or clustering variables are used to extract classes, clusters, or profiles from the sample. These subgroups are assumed to differ systematically on the clustering variables, and if other variables differ across subgroups, then the subgroups themselves can be considered informative and meaningful (Magnusson, 2003).

Although Magnusson's pioneering work on person-centered analyses was primarily developmental, his logic may be equally applicable to migration studies. For examples, Cobb et al. (2019) argued that incorporating a person-centered viewpoint is especially important when studying migrant groups, where considerable heterogeneity may exist within a given sample of migrants. Combining this person-centered logic with cultural and family-economic stress theorizing may yield research questions such as the extent to which cultural and family-economic stress indicators can be used to differentiate subgroups of Ukrainian migrants, and whether these subgroups would differ in terms of mental health, well-being, alcohol misuse, premigration trauma, and survivor's guilt. Such information can help to guide policy in terms of

programs specifically designed to help Ukrainians reporting lower versus higher levels of cultural and family-economic stress (e.g., identifying types of risk and protective factors regarding symptomologies and resilience that would need to be targeted and implemented for each of these subgroups).

The Present Study

The present study was designed to examine, within a sample of pre- and postinvasion Ukrainian migrants, the extent to which distinct latent subgroups can be extracted using indicators of cultural and family-economic stress. We also sought to determine the extent to which indicators of trauma, mental health, well-being, alcohol misuse, and survivor's guilt would differ across these subgroups—as well as whether the subgroups would differ in terms of the representation of pre- versus postinvasion Ukrainian arrivals.

Research Question 1: How many distinct classes or subgroups emerge in latent analysis when exploring trauma levels and stressors among Ukrainian migrants?

Hypothesis for Question 1: We expected to extract three distinct classes differentiated by cultural and family-economic stress levels. Higher stress subgroups are anticipated to exhibit elevated mental health concerns, increased alcohol use, greater premigration trauma, intensified guilt regarding leaving Ukraine, and reduced levels of optimism and life satisfaction.

Research Question 2: Are there differences in the experiences of individuals who arrived in the United States before versus after the onset of the February 2022 war in Ukraine? Specifically, are classes marked by higher cultural stress more likely to consist of migrants who arrived after the war began, and is there a correlation between cultural and family-economic stress and language stress in those who arrived later?

Hypothesis for Question 2: Higher cultural stress classes are expected to consist mainly of postwar arrivals, with increased prevalence of language stress due to limited time for language acquisition and job opportunities. Traumatic experiences may contribute to a negative mindset, potentially amplifying perceptions of unfair treatment and discrimination in the United States.

Method

Procedure

The institutional review board at the authors home institution approved this study in early 2023. Recruitment of participants was conducted through various channels, including phone calls, emails, and social media platforms such as Telegram, Facebook, Instagram, WhatsApp, and LinkedIn. To determine eligibility, individuals interested in participating underwent screening questions in Qualtrics before proceeding to the main survey. Criteria for eligibility included being of Ukrainian ethnicity, born in Ukraine, aged 18 or older, and residing in the United States. Participants who met these criteria provided consent and completed the screener before accessing the main survey, which was available in English, Ukrainian, and Russian and was validated by trilingual (Ukrainian, Russian, and English) research team members. The measures were translated into Russian and Ukrainian (as most Ukrainians speak both languages) and then back translated by bilingual students. One native Russian speaker (the first author), and one native Ukrainian speaker, checked the final versions and edited them as necessary. The research team implemented outreach strategies, such as radio ads in Miami, Florida through first author's network of friends, to recruit from the wider Ukrainian adult population in the United States. The ads described the study purpose, indicated what participants would be asked to do, and told them how much they would be paid for taking part.

Snowball sampling was employed, starting with a small group of participants (seeds) referred by local organizations. These initial participants were then asked to refer other eligible individuals, leading to additional referrals until the final sample size was achieved. To prioritize participants' emotional well-being and safety, we provided a mental health crisis line number at the beginning of the primary survey, which took an average of 39 min to complete online.

Data were collected between June and August of 2023. Data filtration methods, including Qualtrics data controls and Kickbox email verification, were implemented to authenticate responses and to identify and filter out any duplicate, bot-generated, or fraudulent survey entries. We cross-referenced respondents' claimed locations with their Internet Protocol addresses to ensure accuracy. Completely Automated Public Turing test to tell Computers and Humans Apart was implemented to distinguish between human respondents and bots, protecting against bot-generated responses. Furthermore, we developed procedures to prevent multiple submissions, detect bots, monitor security scans, and used RelevantID to improve security, identify fraudulent activities, and ensure data reliability. Each participant was assigned a distinct Qualtrics Identification ranging from 1 to 1,000 to safeguard their confidential information. Upon completion of the surveys, participants received a $20 gift card as compensation for their time and participation.

Measures

Anxiety. We used the General Anxiety Disorder (GAD-7) scale (Spitzer et al., 2006) to assess anxiety symptoms. This scale consists of seven items designed to measure how often individuals experience symptoms of anxiety, such as feeling nervous, anxious, or on edge and not being able to stop or control worrying during the 2 weeks prior to assessment. A sample item measured on a scale of 0 (*not at all*) to 3 (*nearly every day*) is "worrying too much about different things." The GAD has been used with Ukrainian war migrants in prior work (Riad et al., 2022). Cronbach's α in the present sample was .91.

Depressive Symptoms. To assess depressive symptoms, we used the Boston short form of the Center for Epidemiologic Studies Depression Scale (CESD-B; Grzywacz et al., 2006; Kohout et al., 1993). This 10-item scale is designed to measure how often individuals experience symptoms of depression, such as sadness and lack of energy. An example item is "I felt like everything I did was an effort." The Center for Epidemiological Studies–Depression Scale has been used with Ukrainian samples in prior work (Burlaka et al., 2017). The scale was internally consistent, with a Cronbach's α of .89 in the present study.

Traumatic Exposure. The Harvard Trauma Questionnaire, developed by Arnetz et al. (2014), is a widely used tool with 22 items for assessing trauma exposure, especially among individuals who have experienced conflict or violence. Respondents indicate "yes" or "no" for each item. Sample items include "witnessed physical harm of others" and "witnessed execution of civilians." We used McDonald's Omega (ω) as an index of reliability for yes/no variables, and the value was .93 in the present sample.

Posttraumatic Stress Symptoms. In evaluating the presence and severity of posttraumatic stress disorder (PTSD) symptoms, we utilized the 17-item Davidson Trauma Scale (Davidson et al., 1997). The scale delves into an individual's history of trauma, assessing both the frequency and severity of symptoms over time. Respondents rate each item on a 5-point scale ranging from 0 (*never*) to 4 (*5 or more times*). Example items include "You have had some images, memories, or painful thoughts about the traumatic event" and "You have been unable to recall important parts of the traumatic event." We asked participants to focus on traumatic events occurring in Ukraine prior to migration. Cronbach's α was .96. To our knowledge, this is the first study to use the Davidson Trauma Scale with a Ukrainian population.

Satisfaction With Life. To evaluate life satisfaction, we employed the five-item Satisfaction with Life Scale (Diener et al., 1985). This scale is specifically designed to gauge individuals' contentment with their lives holistically and the conditions in which they find themselves. The response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). Items included "In most ways, my life is close to my ideal" and "The conditions of my life are excellent." Cronbach's α was .89 in the present study.

Optimism. To assess the participants' levels of optimism, we employed the 10-item Revised Life Orientation Test (LOT-R; Scheier et al., 1994). The LOT-R is designed to measure individuals' degree of optimism or pessimism regarding the future. Respondents use a 5-point rating scale (0 = *strongly disagree*; 4 = *strongly agree*). The scale includes items such as "In uncertain times, I usually expect the best" and "I'm always optimistic about my future." Cronbach's α in the present sample was .66.

Alcohol Misuse. To assess alcohol misuse, we used the 10-item Alcohol Use Disorders Identification Test (Saunders et al., 1993). Response options ranged from never to four times a week. Three items assess quantity and frequency of alcohol use (e.g., "How many drinks containing alcohol do you have on a typical day when you are drinking?"), three evaluate frequency of alcohol-dependent behaviors (e.g., "How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?"), and four gauge alcohol-related problems (e.g., "Have you or someone else been injured as a result of your drinking?"). Cronbach's α was .93.

Discrimination. We used the seven-item Perceived Discrimination Scale to assess perceived discrimination (Phinney et al., 1998). This scale assesses the degree to which individuals feel they have been treated unfairly or negatively based on their nationality or ethnicity. Items specifically inquire about being viewed with suspicion because of one's background. One of the sample questions was: "Do people you do not know treat you unfairly or negatively because you are Ukrainian?" Response options ranged from not at all to nearly every day. Cronbach's α was .82 in the present sample.

Perceived Context of Reception. We used the six-item Perceived Context of Reception Scale, (Schwartz et al., 2014) to evaluate individuals' perceptions of the opportunities they were provided in the United States and how welcome they perceive the context. This scale utilizes a 5-point Likert scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). Sample Items include "I don't have the same chances in life here as people from other countries." Cronbach's α was .88 in the present sample.

Language Stress. To gauge stress related to language proficiency and difficulties, we utilized the seven-item language stress subscale from the Hispanic Stress Inventory (Cervantes et al., 2012). Respondents were asked to indicate their agreement level on a 4-point Likert scale, with options ranging from 0 (*strongly disagree*) to 3 (*strongly agree*). Sample Items include "I don't speak English or don't speak it well." Cronbach's α was .84 in the present sample.

Family Economic Stress. To gauge economic stress, we employed the 13-item Family Economic Strain Scale (Hilton & Devall, 1997). Response options ranged from never to almost always. Sample items include "How hard is it now to live on your present income?" Cronbach's α was .91.

Survivor's Guilt. We developed a nine-item measure to assess people's emotions of survivor's guilt as a result of leaving family and friends behind in Ukraine. This scale was created as a self-assessment instrument to capture immediate feelings of shame, survivor's guilt, and societal rejection in one's nation of origin. Development of this measure was prompted by discussions with newly arrived Ukrainians in the United States, in which several people expressed feelings of remorse as well as a desire to provide support to Ukraine from afar. Sample answers on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) included statements including "I feel bad about leaving my country during this challenging time of war" and "Are you worried that other Ukrainians might be angry with you because you left the country?" In the current sample, Cronbach's α was .87.

Clinical Cutoff Values for Depression, Anxiety, and PTSD. The optimal cutoff value for identifying symptoms of depression using the CESD-B-10 has been determined to be ≥10, aligning with the maximum Youden index (Youden index = 0.847) as reported by Fu et al. (2022). Individuals scoring greater than or equal to 10 on this scale are more likely to be diagnosed with depression. For assessing anxiety levels with the GAD-7, specific cutoff points have been established: scores of 5, 10, and 15 denote mild, moderate, and severe anxiety, respectively, based on the criteria outlined by Sapra et al. (2020). In the evaluation of posttraumatic stress disorder (PTSD) using PTSD-17, a cutoff score exceeding 40 has been identified. This threshold, as indicated by van der Mei et al. (2020), is associated with a higher-than-average likelihood (greater than 11%) of developing chronic PTSD. Regarding alcohol misuse, a comprehensive approach was employed. A total cutoff score of 8 or above on the alcohol use scale indicates evidence of hazardous or

harmful alcohol use. In addition, a score of 15 or above suggests probable alcohol dependence, warranting appropriate follow-up with brief counseling and continued monitoring, in accordance with the criteria established by Killgore et al. (2021).

Data Analysis Plan

We conducted a latent profile analysis using Mplus 8. Cultural and economic stress variables were used as indicators for the latent profile analysis. Auxiliary (outcome) variables included age group (18–30, 31–40, 41–50, 51–60, and 61 or older), gender (women vs. men), arrival cohort (before or after the Russian invasion) depression (both symptoms and probable diagnoses), anxiety (both symptoms and probable diagnoses), PTSD (both symptoms and probable diagnoses), life satisfaction, optimism, alcohol misuse, survivor's guilt, and trauma. The Bolck–Croon–Hagenaars auxiliary command in Mplus was used to compare continuous variables across classes, and the discrete categorical auxiliary command in Mplus was used to compare categorical variables across classes.

Sample

The present sample was comprised of 703 Ukrainian migrants, with women representing 53.6% of participants (see Table 1 for detailed demographic information). Participants reported being from various regions in Ukraine, including Kyivska, Volyns'ka, and others. Most participants reported living in Texas, California, Illinois, Florida, or New York. Most indicated wanting to remain within the United States. In terms of arrival cohort, 67.9% of participants arrived in 2021 or earlier, 30.9% arrived in 2022 or 2023, and 1.3% did not indicate their year of arrival. Roughly 80% of our participants were between the ages of 18 and 40. Only 4.3% of participants reported being over 60 years old. Approximately two thirds of participants indicated obtaining either a bachelor's or associate degree as their highest educational achievement. The remaining population achieved either a graduate or high school degree, with the former being the more common. About half of participants reported being married (54.2%), 12.8% were divorced, and 18.6% were single. The majority of participants were parents, with over half of parents having one child. Roughly 75% of the participants reported being employed. Most participants reported being proficient in Russian, English, and Ukrainian. Among postinvasion arrivals, 81% arrived in the United States in 2022; and among preinvasion arrivals, 84% arrived between 2014 and 2021, and 96% arrived between 2010 and 2021.

Table 1
Demographic Characteristics

Demographic (703 participant)	%/*M*
Gender	
Women	53.6%
Men	46.7%
Age distribution	
18–30 years	40.1%
31–40 years	41.1%
41–50 years	11.2%
51–60 years	3.3%
Over 60 years	2%
Geographic distribution (participants from 27 regions)	
Top 3 Regions:	
Kyivska oblast (north-central Ukraine)	11%
Volyns'ka oblast (northwestern Ukraine)	7%
Vinnyts'ka oblast (central Ukraine)	6.9%
Marital status	
Married	54.2%
Divorced	12.8%
Single	18.6%
In a relationship	12.1%
Widowed	2.3%
Parental status	
Have children	64%
Have one child	62% (of parents)
Live with children	95% (of parents)
Education level	
Graduate degree	14%
Associate's/undergraduate	55.9%
Some college education	17.2%
High school	12.3%
Employment status	
Employed	76.4%
Unemployed	15.2%
Students	5.3%
Never employed	2.4%
Language proficiency (mean score, range 1–5)	
Speaking Ukrainian	$M = 3.80$
Speaking English	$M = 3.14$
Speaking Russian	$M = 3.09$
Geographic location in the United States (top states)	
Texas	14.7%
California	14.1%
Illinois	10.6%
New York	10.4%
Florida	8.7%
Intention to stay in the United States	
Strong desire to stay	87.9%
Do not wish to stay	8.6%
Unsure about the future	3.7%

Results

Determining the Number of Classes

To select the optimal class solution, we relied on recommendations from Nylund et al., 2007. Specifically, we began with a two-class model and verified that such a model would fit the data significantly better compared to a single-class model. We reached this determination using the information criteria (Akaike information criterion, Bayesian information criterion, and sample-size adjusted Bayesian information criterion), where smaller values indicate improved model fit (see Table 2); the entropy value (E), which ranges from 0 to 1 and indicates the reliability of the class solution; the posterior classification accuracy values, which also range from 0 to 1 and reflect the extent to which the class solution can be internally replicated (values above .90 are optimal); the Lo–Mendell–Rubin and Vuong–Lo–Mendell–Rubin likelihood ratio tests, which evaluate the null hypothesis of equivalent fit between models with k versus k–1 classes; and the presence versus absence of solutions with extremely small classes (i.e., at least one class representing less than 5% of the sample). Nylund et al. suggest continuing to evaluate progressively complex models until a model is statistically rejected, at which time the previous model would be retained as the optimally fitting solution.

Based on these criteria, we retained a three-class model (see Table 3). Although the four-class model provided superior fit, the

Table 2
Model Indices for Class Solutions

No. of class	AIC	BIC	ABIC	VLMR-LRT (*k*–1)	Entropy	Posterior probability	Class proportion ranges
2	16481.40	16540.62	16499.35	742.55***	.78	.92–.94	.41–.59
3	16211.83	16293.824	16236.670	279.58***	.82	.89–.96	.19–.41
4	5236.63	5341.39	5268.27	469.15	1	1.0–1.0	.04–.44

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; ABIC = sample-size adjusted BIC; VLMR-LRT (*k*–1) = Vuong–Lo–Mendell–Rubin Likelihood Ratio Test for (*k*–1) classes.
*** $p < .001$.

smallest class within this solution represented only 4% of the sample. In contrast, the smallest class within the three-class solution represented 19% of the sample. The three-class solution provided acceptable entropy (.82), and posterior classification accuracy estimates were all above .89.

Within the Mplus software, separate models must be estimated for (a) continuous auxiliary variables (using the Bolck–Croon–Hagenaars command) and (b) for categorical auxiliary variables (using the discreet categorical command). Bolck–Croon–Hagenaars and discreet categorical cannot be included within the same syntax. However, the class solution is exactly the same—so multiple testing is not a concern.

As displayed in Table 3, Class 1 represented moderate levels of cultural and economic stress, Class 2 represented low levels of cultural and economic stress, and Class 3 represented high levels of cultural and economic stress. The patterns of auxiliary variables supported these class labels. Specifically, among the continuous auxiliary variables, the high-stress class reported the highest scores for depressive, anxiety, and PTSD symptoms; the lowest scores for life satisfaction; the highest scores for survivor's guilt, trauma, and alcohol misuse. Optimism was significantly higher in the low-stress class, but the moderate stress and high stress did not differ significantly from one another on optimism.

Results for categorical auxiliary variables were striking, especially for arrival cohort and clinical diagnosis indices (see Table 4). Whereas individuals arriving after the invasion represented 21% and 20% of the low and moderate classes, respectively, individuals arriving after the invasion represented 45% of the high-stress class. Individuals meeting criteria for probable anxiety, depression, and PTSD diagnoses represented between 80% and 93% of the high-stress class but only between 4% and 32% of the low-stress class. (Within the moderate-stress class, 87% of participants met criteria for a depression diagnosis, but corresponding rates for anxiety and PTSD diagnoses were only 29% and 9%, respectively.) In terms of alcohol misuse, 47% of high-stress participants met criteria for alcohol dependence, compared to 9% of those in the low-stress class and 31% of those in the moderate-stress class. No significant class differences emerged for gender, and age group differences were difficult to interpret. High stress participants were more likely (8%) to be over age 60 than were low (3%) or moderate (<1%) stress participants, but no other consistent patterns of differences emerged.

Discussion

The present study was designed to investigate disparities among Ukrainians in the United States who migrated before versus after the February 2022 invasion, focusing on mental health (anxiety, depressive symptoms, PTSD), well-being (life satisfaction and optimism), alcohol misuse, cultural and economic stress, survivor's guilt, and premigration trauma. This study is one of the first attempts to apply cultural and family-economic stress theories to Ukrainian migrants in the United States. It highlights questions regarding the relevance of cultural stressors, such as discrimination and negative context of reception, as well as family-economic stress to a European migrant population such as Ukrainians. Our findings strongly underscore the profound impact of cultural and family-economic stressors associated with the migration experience on the mental health of Ukrainians in the United States. These results are consistent with the postulate within cultural stress theory that individuals from diverse cultural backgrounds may encounter stress when adapting to unfamiliar sociocultural contexts (Berry, 2006), and that these stressors contribute to adverse outcomes for many migrants. Specifically, negative context of reception, discrimination, language stress, and family-economic stress emerge as pivotal contributors to the elevated mental health challenges observed within this population,

Table 3
Continuous Auxiliary Variables by Latent Class

Variable	Moderate (*N* = 279) *M* (*SD*)	Low (*N* = 135) *M* (*SD*)	High (*N* = 289) *M* (*SD*)	Overall test χ^2	Pairwise test *p*
Depressive symptoms	22.7 (4.51)	18.06 (5.25)	27.29 (6.02)	274.1	<.001
Anxiety	8.72 (3.83)	5.72 (3.85)	12.11 (4.30)	253.7	<.001
Posttraumatic stress	29.06 (11.2)	16.11 (14.23)	42.19 (11.01)	433.9	<.001
Life satisfaction	17.31 (5.50)	21.37 (7.46)	10.76 (4.99)	358.6	<.001
Optimism	19.23 (4.50)	22.14 (5.01)	18.88 (4.65)	43.01	<.001
Alcohol misuse	12.02 (8.00)	7.32 (6.76)	14.57 (10.84)	77.40	<.001
Survivor's guilt	17.58 (6.17)	20.8 (7.58)	23.07 (7.57)	80.8	<.001
Harvard Trauma Questionnaire	14.34 (6.17)	6.68 (7.70)	16.76 (5.51)	193.2	<.001

Table 4
Categorical Auxiliary Variables by Latent Class

Variable	Moderate (N = 279)	Low (N = 135)	High (N = 289)	χ^2	p
Anxiety (%)	29%	16%	93%	156.03	<.001
Depressive symptoms (%)	87%	32%	91%	103.55	<.001
Posttraumatic stress (%)	9%	.4%	81%	119.88	<.001
Alcohol misuse (%)				101.24	<.001
No misuse	27%	55%	36%		
Harmful use (cut off 8)	43%	36%	17%		
Alcohol dependence (cut off 15)	31%	.9%	47%		
Age distribution (%)				23.59	.003
18–30 years	42%	37%	40%		
31–40 years	36%	52%	40%		
41–50 years	14%	.9%	9%		
51–60 years	.5%	.2%	2%		
Over 60 years	.3%	.07%	8%		
Gender (%)				1.01	.604
Male	45%	51%	46%		
Female	55%	50%	54%		
Arrival cohort (%)				33.32	<.001
Before Russian invasion	80%	79%	54%		
After Russian invasion	20%	21%	46%		

supporting the applicability of both cultural stress theory and family-economic theory to a European migrant group.

Crisis migration, driven by the urgency of escaping conflict or disaster, adds an additional layer of complexity to the resettlement process. Vos et al. (2021) highlighted that the abrupt and often involuntary nature of crisis migration—which appears to apply most strongly to postinvasion arrivals—can increase the difficulty of grappling with the challenges of adapting to new cultural norms, navigating unfamiliar social landscapes, and reconstructing shattered lives. The displacement itself becomes a source of ongoing stress, contributing to the perpetuation of mental health challenges long into the resettlement phase. Indeed, the present results suggest that cultural and family-economic stressors may be more prevalent among Ukrainians who experienced greater degrees of premigration trauma.

Class Profiles and Comparisons

Consistent with our conceptualization of economically informed cultural stress theory, our findings yielded three latent subgroups in terms of cultural and family-economic stressors. In accordance with cultural and family-economic stress theories, these stressors varied together, inasmuch as one profile was characterized by lower levels of all four stressors, a second by moderate levels of all four stressors, and a third by higher levels of all four stressors. Postinvasion arrivals comprised a significantly larger proportion of individuals in the high-stress class compared to the low- and moderate-stress classes. The concentration of postinvasion arrivals in the highest stress class aligns with the literature on trauma and crisis migration (Fazel et al., 2005; Silove et al., 1997), which suggest that war-related trauma and crisis migration experiences leave an enduring impact, influencing mental health outcomes even after resettlement. War-related trauma is a complex phenomenon characterized by exposure to life-threatening events, violence, and significant disruption to one's social and cultural environment. Silove et al. (1997) emphasized that the psychological consequences of such traumatic events extend far beyond the immediate impact, shaping the mental health trajectories of individuals throughout their lifetime. The Russian invasion of Ukraine, marked by violence, displacement, and widespread disruption, has undoubtedly left an indelible mark on those who experienced it, influencing their mental health outcomes even as they seek refuge and rebuild their lives in a new country. Although not all regions of Ukraine were equally exposed to the war, Karatzias et al. (2023) found that people in every part of Ukraine experienced significant stressors throughout the war, even in ostensibly "safe" locations.

Furthermore, individuals meeting criteria for anxiety, depression, and PTSD diagnoses were primarily represented within the high-stress class, underscoring the profound mental health challenges associated with cultural and family-economic stressors among Ukrainian migrants. Hook and Bogdanov (2021) highlighted the mental health situation in Ukraine, a lower middle-income country, where around 33% of the population would be expected to experience mental disorders during their lifetime, even prior to the Russian invasion. Their findings also indicate considerable prevalence of probable posttraumatic stress disorder (32%), depression (22%), and anxiety (17%) diagnoses among Ukrainian internally displaced persons. We can compare these numbers within our sample of displaced Ukrainians in the high-stress group, where 81% met screening criteria for posttraumatic stress disorder, 91% for depression, and 93% for anxiety. Not surprisingly, individuals arriving after the beginning of the Russian invasion represented 46% of the high-stress class despite comprising only 31% of the sample overall. In contrast, postinvasion arrivals represented only 21% and 20% of the low- and medium-stress classes, respectively.

The class profiles and comparisons highlight the importance of examining how traumatic experiences and war can impact mental health. Hook and Bogdanov (2021) found that many Ukrainians perceive considerable stigma around mental illness and effective mental health treatments, and that this stigma contributes to a reluctance to seek help. We do not know how many individuals in each of the classes were seeking mental health services, but the findings reported by Hook and Bogdanov suggest that seeking such

services may be frowned upon within Ukrainian cultural contexts. Not only are mental health interventions and programs likely needed for this group in the United States, but it is also essential to facilitate willingness to access these services.

Similarly, rates of alcohol dependence were markedly higher among individuals in the high-stress class compared to those in the low- and moderate-stress classes. Correspondingly, Hook and Bogdanov (2021) suggested that alcohol-related mortality rates are alarmingly high in Ukraine, with 40% of deaths among males and 22% of deaths among females between the ages of 20 and 64 attributable to the effects of alcohol. Within the high-stress class, we found that 17% have engaged in harmful alcohol use, and 47% met screening criteria for alcohol dependence. If left untreated, these rates of alcohol problems are likely to lead to increased mortality rates.

Mental Health Implications, Resilience, and Coping

The present findings underscore the complex interplay among stressors, mental health outcomes, and alcohol misuse among Ukrainian migrants, highlighting the need for comprehensive support and intervention strategies to address the multifaceted challenges faced by this population. A key finding was that, although individuals arriving after the 2022 Russian invasion were disproportionately likely to be classified into the high-stress class, many preinvasion arrivals were also in this class. Ukrainians who arrived prior to the invasion may also report elevated levels of cultural and family-economic stress, along with heightened symptoms of depression, anxiety, posttraumatic stress, alcohol misuse, and survivor's guilt—and decreased levels of optimism and life satisfaction. As reviewed in the introductory section, a number of armed conflicts between Ukraine and Russia occurred prior to the 2022 invasion. Indeed, 84% of preinvasion arrivals came to the United States after the Crimea and Donbas conflicts. These individuals, even though their traumatic experiences occurred much earlier than those within the postinvasion group, may nonetheless report elevated symptoms and need support.

Despite the trauma experienced by many Ukrainians, the low-stress profile was the largest, suggesting the prevalence of resilience and adaptive coping responses. Levels of optimism and life satisfaction within this profile are encouraging and suggest that many Ukrainian migrants in the United States are happy with their lives and with their prospects for the future. Indeed, as Cobb et al. (2019) and others have noted, moving to a new country, and restarting one's life often represent a new beginning and a chance to reinvent oneself. Despite the inherent challenges involved in migration—and especially in crisis migration—most migrants likely view their relocation as an opportunity and a challenge that will ultimately strengthen their and their families' lives. Moreover, although we did not assess community supports in the present study, many migrants settle into communities where they can access other people from their homelands, and where a sense of familiarity can help them to adapt to their new setting (Portes & Rumbaut, 2014).

It has been noted in the literature that adaptation and resiliency are especially important for successful human functioning (Masten, 2001). Importantly, many of the Ukrainians in our sample reported relatively low levels of financial challenges and of discrimination, negative context of reception, and language difficulties. Babatunde-Sowole et al. (2020) emphasized the importance of financial security vis-à-vis migrants' resilience amidst trauma. They found that financial stability enabled individuals to allocate their energy toward fulfilling relationships and meaningful activities rather than toward addressing financial shortages. Their results also emphasized the importance of social connections and support (both formal and informal) in helping crisis migrants to transition into and settle in the destination country. As a result, cultivating protective factors such as community support, connectedness, and emotional and physical health may be essential for facilitating community resilience among Ukrainians in the United States and elsewhere. It is essential to emphasize that resilience is not exclusively individualistic, but rather can be nurtured "through supportive relationships and interactions" (Walsh, 2016). Therefore, it is crucial that future studies with Ukrainian migrants investigate possible factors that either promote or hinder resilience to help tailor intervention programs for individuals who might experience premigration trauma in combination with postmigration cultural and family-economic stress.

The present results also support Cobb et al.'s (2019) argument that the majority of migrants, including crisis migrants, are resilient and are "doing well" in their new communities and contexts. Although much of the research on immigration, and especially on crisis migration, focuses on vulnerabilities, distress, and other negative outcomes, it is essential to note that most of the Ukrainians in our sample, including those who arrived after the Russian invasion, are adapting quite well to life in the United States. As Masten (2001) noted more than two decades ago, resilience is often the rule rather than the exception across many different populations.

Stress Level and Age Vulnerability

It is also important to note that many individuals in our sample did not report high levels of stress and were relatively high in life satisfaction and optimism. Indeed, although 41% of participants were classified into the high-stress class, 59% were not—including 39% who were in the low-stress class. Further, 28 postinvasion arrivals were classified into the low-stress class, and 56 into the moderate-stress class—indicating that not all individuals arriving after the invasion reported high levels of discrimination, negative context of reception, language difficulties, and financial problems. It would be instructive to learn more about these individuals and the coping and resilience strategies they used to manage the trauma and rapid changes that they experienced.

Although the gender distribution did not differ significantly across classes, age group variations were observed—yet with some complexity. Participants in the high-stress class were more likely to be older than 60, but no other clear patterns of differences emerged across age groups. This finding is consistent with previous research on stressors in migrant communities (Viruell-Fuentes et al., 2012), where stressors connected to immigration, acculturation, and socioeconomic issues can affect people regardless of gender. Indeed, Viruell-Fuentes et al. reviewed the primary types of stressors faced by migrant groups in the United States. They identified discrimination, economic insecurity, and acculturation stress, which we assessed in the present study and that we used to classify participants into latent profiles. Of particular concern in our results is the heightened vulnerability of individuals over 60 years old to high-stress levels. Of the 30 individuals over age 60 in our sample, all but one arrived in the United States in 2022 or 2023—

suggesting that the elevated probable PTSD rates among older individuals may be attributable to their exposure to the 2022 Russian invasion. Similarly, the lower PTSD rates among participants aged 18–30 may reflect an opposite pattern, where individuals in this youngest age group represent 43.4% of preinvasion arrivals but 31.2% of postinvasion arrivals. The age-related vulnerability among older individuals may also be related to disruption of established social networks, challenges in adapting to a new cultural context, and heightened sensitivity to economic stressors among individuals who may be near or beyond retirement age (Kirmayer et al., 2011). It is also possible that the invasion retriggered PTSD among older people who lived through the Soviet occupation and through the various post-1991 conflicts with Russia. Indeed, research has shown that older adults who have experienced past trauma may be at increased risk for repeated PTSD when exposed to new stressors, leading to exacerbation of symptoms (Bryant et al., 2008; Ogle et al., 2013).

The enduring impact of war-related trauma and crisis migration experiences is evident in the heightened stress levels observed in individuals who arrived after the onset of the Russia invasion. The psychological scars left by exposure to conflict and forced migration continue to manifest in the form of elevated stress, depression, anxiety, and other mental health challenges. The temporal dimension of this impact underscores the need for sustained and targeted mental health support for individuals who have undergone traumatic experiences, emphasizing that the effects of crisis migration and war-related trauma do not dissipate immediately upon reaching a new destination.

Survivor's Guilt and Long-Term Adaptation

We found significant class differences in experiences of survivor's guilt. Specifically, the high-stress class was associated with the highest mean survivor's guilt scores compared to the low- and moderate-stress classes. Interestingly, using the same data set used in the present study, (Alpysbekova et al., in press) found that survivor's guilt did not differ significantly between preinvasion and postinvasion arrivals. As a result, survivor's guilt differences between classes were not likely attributable to whether individuals came to the United States before or after the invasion began. Rather, an alternative explanation might be that cultural and family-economic stressors communicate to migrants that they are not wanted, or do not belong, in U.S. society. Because survivor's guilt involves feeling rejected by people from one's homeland due to having abandoned them in a time of crisis, experiencing cultural and family-economic stressors may then place some migrants into a "no-win situation" where they are not accepted or validated either by other Ukrainians or by U.S. host nationals. Indeed, the item "Are you worried that other Ukrainians might be angry with you because you left the country?" directly addresses the fear of rejection from one's own community. This perception of being criticized or rejected by fellow Ukrainians for abandoning their homeland can aggravate feelings of guilt and add to a stronger sense of isolation. Rejection-identification theory (Branscombe et al., 1999) suggests that, when individuals feel excluded from the dominant or mainstream ethnic or cultural group, they will identify more strongly with their own ethnic or cultural group. Once they identify more strongly as Ukrainian, Ukrainians who perceive themselves as being rejected by, or marginalized from, U.S. society may then inadvertently find themselves feeling guilty about having left Ukraine.

Our findings therefore suggest that a substantial proportion of Ukrainian migrants, especially those reporting high levels of cultural and family-economic stress, may experience heightened feelings of guilt related to leaving Ukraine. When pursuing possibilities overseas, whether because of opportunities or because of crises, migrants may experience guilt, particularly if they believe they are leaving behind challenges or difficulties in their countries of origin. Furthermore, unresolved guilt can carry long-term implications, preventing people from fully engaging in their new lives and preventing them from maximizing their well-being, recovering from trauma, and developing meaningful relationships (Goveas & Coomarasamy, 2018). Furthermore, cultural factors such as societal expectations and traditions about loyalty and responsibility to one's homeland can influence migrants' feelings of guilt (Ward & Styles, 2012). Indeed, the high-stress class was associated not only with high levels of guilt but also with low levels of optimism and life satisfaction—further suggesting the interconnectedness of guilt with decreased well-being. Mental health interventions should adopt a holistic approach that addresses not only the symptoms of trauma but also the underlying cultural and socioeconomic stressors contributing to migrants' experiences. Culturally sensitive interventions that develop a sense of belonging and addressing feelings of guilt can promote resilience and facilitate the adaptation process for Ukrainian migrants navigating the challenges of displacement.

Finally, it is important to consider the temporal dimension of migrant experiences, particularly regarding the potential changes in stressors over time. Over time, migrants may gradually adapt to their new environment, leading to reductions in stressors such as discrimination, negative context of reception, language difficulties, and financial challenges. With more time spent in the destination country or region, migrants may improve their language skills and learn the "unwritten rules" regarding appropriate and inappropriate behavior. Similarly, economic stability may improve as migrants' secure stable employment and financial resources, reducing family-economic stressors (Kristiana et al., 2022). Moreover, as migrants become more familiar with the cultural norms and social dynamics of their host society, they may develop coping strategies and support networks that mitigate the impact of cultural stressors. Furthermore, the role of U.S. society in shaping migrant experiences deserves attention. Although decreased stressors may represent migrants' resilience and adaptive abilities, they may also reflect broader societal changes or existing support structures. For example, advances in cultural acceptance, resource access, and community integration programs may lead to more favorable migrant experiences over time (Misra et al., 2021).

Our results suggest that preinvasion Ukrainian migrants are more well-adjusted, and less culturally stressed, compared to postinvasion arrivals. At the same time, it should be noted that some traumas may only manifest after a considerable amount of time has passed. To the extent to which such an explanation is accurate, some well-adjusted participants may have experienced trauma that had not yet manifested at the time of data collection. For example, some studies (e.g., Gleeson et al., 2020) have found that the length of stay in a country was *positively* predictive of refugees' mental health problems. Especially because the Russian invasion of Ukraine occurred fairly recently, we do not know whether some of the trauma related to the invasion may manifest in the future.

Intervention and Policy Recommendations

The present study may carry important implications for intervention and policy regarding Ukrainian migrants in the United States. Given the levels of anxiety, depression, survivor's guilt, and posttraumatic stress reported in our sample, especially among the high-stress profile and among individuals who arrived following the Russian invasion, mental health services are critical to offer to Ukrainian migrants who need them. Further, these services should be linguistically and culturally syntonic with Ukrainians' value systems. Although many Ukrainian migrants know at least some English, they may be most comfortable communicating in their native language—and Ukrainian cultural norms often frown upon disclosing personal problems to people whom one does not know well and trust (Filatova, 2023). As a result, at the very least, services should be provided by individuals who speak Ukrainian and are familiar with Ukrainian culture and norms.

Given the family-economic and cultural stressors reported within the high-stress profile, services and policies related to finding work and coping with discrimination, exclusion, and language difficulties may be necessary. Because many foreign professional degrees and certifications are not recognized in the United States, migrants who are trained as doctors, engineers, or other professional occupations may need help obtaining re-certification in the United States. In addition, language instruction and cultural familiarization services may help Ukrainian migrants to communicate more effectively with English speakers, understand the cultural "dos and don'ts" associated with living in the United States, and provide support for handling discriminatory events and feelings of exclusion.

Another challenge that postinvasion Ukrainian migrants face involves their precarious legal status in the United States. Temporary protected status for Ukrainians was originally set to expire in October 2023 and was recently extended through April 2025 (E-Verify, 2024). However, temporary protected status does not provide a path to citizenship—such that the more than 500,000 Ukrainians who arrived in the United States after the Russian invasion do not know how long they will be allowed to remain in the country. The vast majority of participants in our sample (88%) indicated wanting to remain in the United States—suggesting that this precarious legal status may be problematic for a large number of people. As a result, policy changes are needed to provide a path to residency and/or citizenship for individuals and families who have sought refuge in the United States because of the Russian invasion. Similar policy changes are needed for other crisis migrant groups, such as Venezuelans and Afghans, who have also fled dangerous situations and would be in severe danger if their legal status in the United States were to lapse or expire.

Limitations

The present findings should be interpreted in light of at least seven important limitations. First, participants in our study were recruited through snowball sampling, which relies on referrals from existing participants. This approach may introduce self-selection bias, as those willing to participate and refer others may have unique characteristics or experiences not representative of the entire Ukrainian migrant population in the United States. Second, although data filtration methods were implemented to ensure data authenticity, the possibility of false positives or negatives in detecting duplicate entries, automated responses, or fraudulent submissions cannot be entirely ruled out. Third, we did not comprehensively account for cultural and regional variations within Ukraine. Participants from different regions across Ukraine may have distinct experiences and perspectives that were not captured by our survey. Fourth, the study was cross-sectional and captured data only at a single point in time. Therefore, we cannot draw conclusions regarding changes or trends over time. Fifth, self-report data, especially regarding personal histories and experiences, are susceptible to recall bias, as participants may not accurately remember or report past events. Sixth, our measures have not been specifically validated for use in Russian or Ukrainian languages. This limitation is consistent with the broader challenge of limited validation for mental health and substance use measures in Eastern Europe and Central Asia. Finally, measures of premigration trauma inherently involve retrospective recall biases where respondents may not fully or accurately remember events that occurred prior to their departure from Ukraine. Although it is difficult to design studies that involve assessing participants before crisis events occur, the potential biases involved with retrospective assessments must be acknowledged.

Conclusions

Despite these and other limitations, the present study sheds light on the roles of cultural and family-economic stressors vis-à-vis psychosocial and health outcomes among pre- and postinvasion Ukrainian migrants in the United States. Findings suggest strong associations of cultural and family-economic stressors with symptoms and diagnoses of posttraumatic stress disorder, anxiety, depression, and alcohol misuse. Our results carry important potential clinical implications, especially the need to focus on discrimination, exclusion, language barriers, and financial challenges when counseling or otherwise working with Ukrainian migrants. Although individuals arriving after the 2022 Russian invasion tended to report the most elevated levels of cultural and family-economic stress, it is also essential to attend to symptomatology among migrants who arrived prior to the invasion. The knowledge gained from the present study can help in promoting health and wellness among Ukrainians and may also be applicable to similar populations such as individuals from Venezuela, Afghanistan, Syria, Israel, and Palestine. We hope that the present findings inspire additional work in this direction.

Keywords: Ukrainian migrants, Russian invasion, mental health, cultural stressors, war

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