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Mental health in children and adolescents with a refugee background

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Elisa Pfeiffer and Ilse Derluyn

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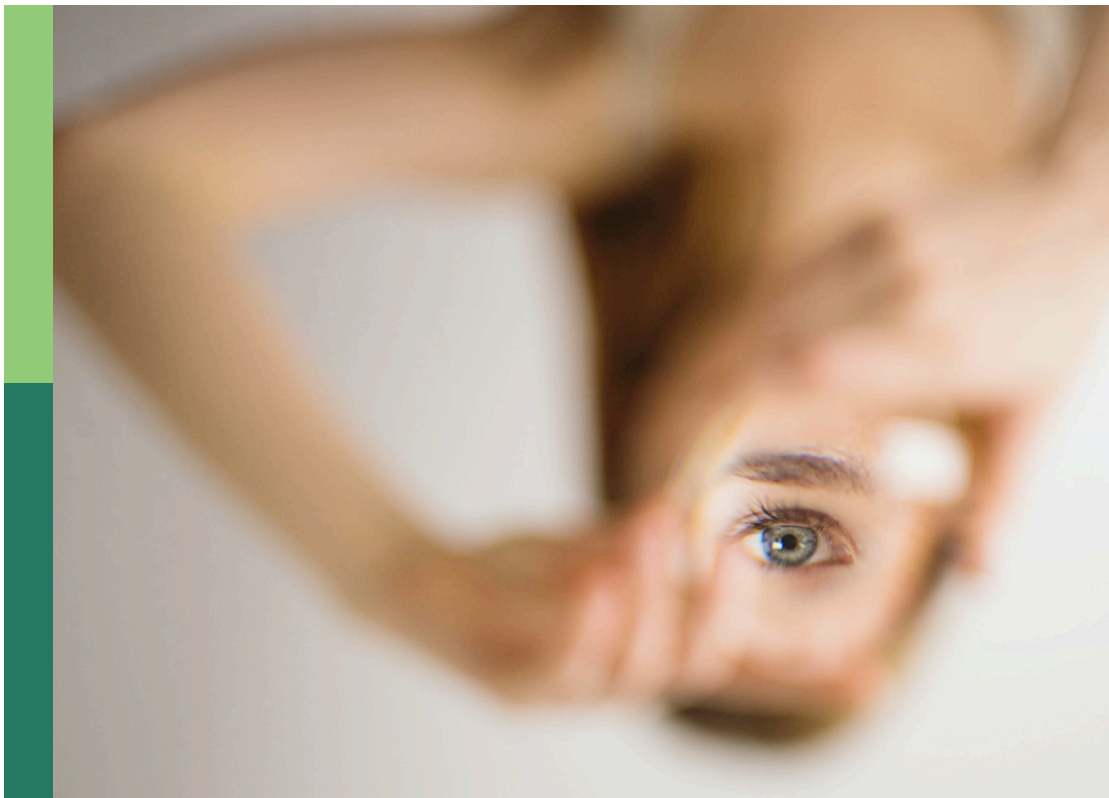

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Mental health in children and adolescents with a refugee background

Topic editors
Elisa Pfeiffer — Ulm University Medical Center, Germany
Ilse Derluyn — Ghent University, Belgium

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Livio Provenzi,
University of Pavia, Italy

*CORRESPONDENCE
Elisa Pfeiffer
elisa.pfeiffer@uniklinik-ulm.de

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Editorial: Mental health in children and adolescents with a refugee background

Elisa Pfeiffer [1]* and Ilse Derluyn[2]

[1]Clinic for Child and Adolescent Psychiatry, Ulm University, Ulm, Germany, [2]Department of Social Work and Social Pedagogy, Centre for the Social Study of Migration and Refugees, Ghent University, Ghent, Belgium

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children, adolescents, mental health, treatment, refugee

Editorial on the Research Topic
Mental health in children and adolescents with a refugee background

Numbers of children and adolescents who have to flee from their homes due various reasons such as war and conflict, economic instabilities, or consequences of climate change are increasing worldwide (https://www.unhcr.org/refugee-statistics/; July 25th, 2023). Host countries therefore need to have an answer on how to cater the needs of these individuals, both from a general health as a mental health perspective. A large and growing body of research conducted in different countries worldwide shows that children and adolescents with a refugee background report significantly higher rates of mental health disorders such as symptoms of posttraumatic stress disorder (PTSD), depression or anxiety (Blackmore et al., 2020), compared to children and adolescents without a refugee background (Spaas et al., 2022). It is therefore crucial to understand which factors (pre-, peri- and post-flight) impact their mental health (Scharpf et al., 2021) and to develop and evaluate treatment approaches that take these factors into account.

The present Research Topic aimed to shed further light on different aspects of the mental health and (trauma-focused) treatment of children and adolescents with a refugee background. The included ten research articles dispose of a large variety of methodological approaches, from network analysis to systematically implemented interviews, or from cross-sectional studies with large sample sizes to mixed-method treatment studies. The studies can be divided into three overarching themes: mental health and young refugees' concepts thereof, acculturation and integration, and interventions tailored to their specific needs.

In their cross-sectional analysis of $N = 131$ young refugees in Germany, Hornfeck et al. replicated prior studies as they found that 42% suffered from clinically relevant post-traumatic stress symptoms, 29% from depression and 21% from anxiety. Especially the number of reported traumatic events, daily stressors, and contact with family had a significant mental health impact. Potter et al. who conducted interviews with refugees in Germany further built on these findings as they found that severe physical abuse in childhood and the effects of the COVID-19-pandemic impacted refugees' emotional distress. In a study by Rizk et al. which investigated $N = 52$ Syrian adolescent refugees in South Beirut, the authors also documented high rates of mental health problems and identified several risky health concerns (e.g., lack of physical exercise or smoking) that could increase mental distress.

Lastly, Behrendt et al. used a network approach to better understand the interplay between the mental health burden, past traumatic experiences and daily challenges. They found that especially daily stressors were associated with unaccompanied young refugees' mental health.

The role of daily stressors is also key in the second overarching theme in this issue, acculturation and integration. In their cross-sectional analysis of $N = 132$ young refugees in Germany, Garbade et al. found that the acculturation strategies "integration" and "assimilation" were most common in young refugees and that the orientation toward their home country was increased by higher daily stressors, but at the same time decreased by traumatic events in the past. Regarding young refugees' general acculturation process, Andersson and Overlien found in their interviews with $N = 48$ refugees who resettled in Norway that strategies such as gaining cultural competence or adapting and finding ways to contribute were named as especially helpful for their acculturation. The authors highlight the refugees' struggle in balancing between their original and host cultures, a theme also addressed in the study by Meyer et al. who investigated $N = 101$ accompanied Arabic-speaking refugee youth and found that their acculturation strategies, such as learning the local language and the number of friends in their new homes, were significantly associated with youth's mental health.

In sum, these studies report once again on the high rates of mental health challenges in this population and their significant association with the daily challenge to navigating through the new culture and society. Hence, two questions arise: (1) Why is mental health treatment uptake so low (Satinsky et al., 2019)? and (2) Which treatments and interventions do we need to address their specific needs in a trauma-informed framework? The study by Van de Meer et al. tried to answer the first question as they systematically interviewed young refugees on their concepts of somatic/mental illness and their mental health literacy. Not only did the interviewed young refugees report little knowledge of mental health (much lower compared to somatic illness), but none knew how to promote mental health. Hence, low-threshold services (maybe even implemented by peers) could be a means through which such populations could increase this knowledge and as such possibly increase their service uptake. Regarding the second question, two studies in this Research Topic describe promising refugee-specific approaches: The study by Van Es et al. evaluated a multi-model trauma-focused treatment approach, specifically designed for unaccompanied young refugees in the Netherlands. In their mixed-methods analysis, they could not find a significant symptom improvement, but in their interviews, all participants described the treatment approach as useful and felt it had positively impacted their wellbeing.

Since many trauma-focused treatments for refugees are supported by cultural mediators and interpreters; the study by Müller et al. is highly valuable as they developed and evaluated a specific training program for interpreters to support trauma-focused treatments. They found that their one-day training with $N = 129$ interpreters managed to not only help interpreters to gain knowledge but also to shift toward more treatment-appropriate attitudes.

The studies included in this Research Topic contribute to a better understanding of young refugees' mental health burden on the one hand, and to different aspects that need to be taken into account when treating their symptoms on the other hand. Future research needs to build on these findings by intensifying similar research in low-and middle-income countries and investigate children and adolescents who are still on the move. Preliminary studies on effective treatment approaches for young refugees (e.g., Pfeiffer et al., 2018; Unterhitzenberger et al., 2019) need to be investigated further and subsequently sustainably implemented and disseminated in countries which host large numbers of refugees (e.g., Iran, Türkiye or Colombia) but might not have the infrastructure to cater the refugees' needs yet.

Author contributions

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Blackmore, R., Gray, K. M., Boyle, J. A., Fazel, M., Ranasinha, S., Fitzgerald, G., et al. (2020). Systematic review and meta-analysis: the prevalence of mental illness in child and adolescent refugees and asylum seekers. *J. Am. Acad. Child Adoles. Psychiat.* 59, 705–714. doi: 10.1016/j.jaac.2019.11.011

Pfeiffer, E., Sachser, C., Rohlmann, F., and Goldbeck, L. (2018). Effectiveness of a trauma-focused group intervention for young refugees: A randomized controlled trial. *J. Child Psychol. Psychiat.* 59, 1171–1179. doi: 10.1111/jcpp.12908

Satinsky, E., Fuhr, D. C., Woodward, A., Sondorp, E., and Roberts, B. (2019). Mental health care utilisation and access among refugees and asylum seekers in Europe: a systematic review. *Health Policy* 123, 851–863. doi: 10.1016/j.healthpol.2019.02.007

Scharpf, F., Kaltenbach, E., Nickerson, A., and Hecker, T. (2021). A systematic review of socio-ecological factors contributing to risk and protection of the mental health of refugee children and adolescents. *Clin. Psychol. Rev.* 83, 101930. doi: 10.1016/j.cpr.2020.101930

Spaas, C., Verelst, A., Devlieger, I., Aalto, S., Andersen, A. J., Durbeej, N., et al. (2022). Mental health of refugee and non-refugee migrant young people in European secondary education: the role of family separation, daily material stress and perceived discrimination in resettlement. *J. Youth Adolesc.* 51:848–870. doi: 10.1007/s10964-021-01515-y

Unterhitzenberger, J., Wintersohl, S., Lang, M., König, J., and Rosner, R. (2019). Providing manualized individual trauma-focused CBT to unaccompanied refugee minors with uncertain residence status: a pilot study. *Child Adolesc. Psychiat. Mental Health* 13, 1–10. doi: 10.1186/s13034-019-0282-3

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EDITED BY
Elisa Pfeiffer,
Ulm University Medical Center,
Germany

REVIEWED BY
Giacomo Orsini,
Ghent University,
Belgium
Federica Cavazzoni,
University of Milano-Bicocca, Italy
Sina Neldner,
Bielefeld University,
Germany

*CORRESPONDENCE
Flurina Potter
flurina.potter@uni-konstanz.de

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The impact of experiencing severe physical abuse in childhood on adolescent refugees' emotional distress and integration during the COVID-19 pandemic

Flurina Potter[1]*, Katalin Dohrmann[1], Brigitte Rockstroh[1], Maggie Schauer[1] and Anselm Crombach[1,2]

[1]Department of Psychology, University of Konstanz, Konstanz, Germany, [2]Department of Psychology, University of Saarbrücken, Saarbrücken, Germany

Background: Accumulating evidence highlights the importance of pre- and post- migration stressors on refugees' mental health and integration. In addition to migration-associated stressors, experiences earlier in life such as physical abuse in childhood as well as current life stress as produced by the COVID-19-pandemic may impair mental health and successful integration – yet evidence on these further risks is still limited. The present study explicitly focused on the impact of severe physical abuse in childhood during the COVID-19 pandemic and evaluated the impact of these additional stressors on emotional distress and integration of refugees in Germany.

Methods: The sample included 80 refugees, 88.8% male, mean age 19.7years. In a semi-structured interview, trained psychologists screened for emotional distress, using the Refugee Health Screener, and integration status, using the Integration Index. The experience of severe physical abuse in childhood was quantified as a yes/no response to the question: "Have you been hit so badly before the age of 15 that you had to go to hospital or needed medical attention?" Multiple hierarchical regression analyses further included gender, age, residence status, months since the start of the COVID-19 pandemic and length of stay in Germany to predict emotional distress and integration.

Results: Two regression analyses determined significant predictors of (1) emotional distress (adjusted R^2=0.23): duration of being in the pandemic (ß=0.38, p<0.001) and severe physical abuse in childhood (ß=0.31, p=0.005), and significant predictors of (2) integration (adjusted R^2=0.53): length of stay in Germany (ß=0.62, p<0.001), severe physical abuse in childhood (ß=0.21, p=0.019) and emotional distress (ß=−0.28, p=0.002).

Conclusion: In addition to migration-associated stressors, severe physical abuse in childhood constitutes a pre-migration risk, which crucially affects the well-being, emotional distress and integration of refugees in Germany.

KEYWORDS

refugees, physical abuse, childhood abuse, post-migration stressors, COVID-19 pandemic integration, emotional distress, mental health

Introduction

From 2010 to 2019 the number of refugees worldwide has doubled from about 10 million in 2010 to 20.4 million in 2019 (United Nations High Commissioner for Refugees, 2020). In 2021, the United Nations High Commission for Refugees estimated that the number of refugees worldwide was as high as 26.6 million and the number of asylum seekers[1] as high as 4.4 million (United Nations High Commissioner for Refugees, 2021). In 2019, approximately half of the refugees were minors below 18 years of age and 13% were young adults between 18 and 24 years (United Nations High Commissioner for Refugees, 2020). Germany alone hosted 1.2 million refugees in 2021 (United Nations High Commissioner for Refugees, 2021) and accepted the largest number of asylum applications worldwide in the past decade (United Nations High Commissioner for Refugees, 2020; Hoell et al., 2021). The activities and efforts to enable social integration and support the refugees' well-being also brought forth many challenges (Silove et al., 2017; Kaltenbach, 2019). For instance, a Swiss study showed that even after 10 years of residence in Switzerland, refugees showed serious integration difficulties, including struggling with language barriers, isolation and unemployment (Schick et al., 2016). An impairing factor may be that refugees from war- and/or violence-inflicted regions suffered from mental disorders resulting from these experiences more often than the adult population in Western nations (Hoell et al., 2021): Compared to the general adult population refugees are up to 15 times more likely to suffer from post-traumatic stress disorder (PTSD) and up to 14 times more likely to suffer from depression, prevalence rates varying between 4.4–86% for PTSD and 2.3–80% for depression (Bogic et al., 2015). A recent meta-analysis focusing on German refugees and asylum seekers indicated a prevalence of 29.9% for PTSD, and 39.8% for depression (Hoell et al., 2021). Similar if not higher prevalence rates were found in refugee youth. According to a recent review, half of the refugee youth might be affected by PTSD and up to a third by emotional or behavioral problems, such as depression or anxiety disorder (Kien et al., 2019).

1 Being aware that refugees and asylum seekers refer to populations with different characteristics, to simplify the terminology we refer to both as refugees.

Pre-migration stressors

Different stressors experienced pre-migration, i.e., prior to leaving the home country, peri-migration, during the flight, and post-migration, upon arrival in the host country, have been shown to affect refugees' mental health, making it even more likely for them to suffer and impair their integration (Schick et al., 2016; Kartal et al., 2018; Aragona et al., 2020). These stressors might affect refugee youth even more severely, as they simultaneously undergo immense physical and mental changes (Schneider et al., 2017). Many refugees have experienced **pre-migration stressors** such as atrocities during war and other traumatic events in their home country and/or on the journey to Europe (Davidson et al., 2010; Bajbouj et al., 2021). In the general population as well as in refugee populations, an elevated trauma load has been associated with an elevated risk for mental ill-health and stress related mental disorders (Steel et al., 2009; Wilker et al., 2015; Kartal et al., 2018). Among potentially traumatic events, interpersonal violence had the strongest associations with mental problems (Tinghög et al., 2017). In addition, reports and observations suggested that adverse experiences earlier in life and before war/crisis-associated traumata impair healthy development, increase the risk for mental health problems and the ability to flexibly adapt to new social situations (Felitti et al., 1998; Kendall-Tackett, 2002; Olema et al., 2014; Kalia and Knauft, 2020). Research has found that older minors were exposed to more traumatic experiences than younger minors (Bean et al., 2007), and that even when controlling for age unaccompanied refugee minors were exposed to more traumatic experiences than accompanied refugee minors (Müller et al., 2019; Müller-Bamouh et al., 2020). In particular, physical abuse and other types of abuse during childhood have been identified as increasing the risk for PTSD (Margolin and Vickerman, 2011), adult depression and anxiety (Lindert et al., 2014), and a more severe course of mental disorders (Teicher and Samson, 2013). High rates of child maltreatment have been reported in war-affected countries (Catani et al., 2008, 2009) and it was shown that the impact of maltreatment in childhood surpassed the damage of recent war trauma (Olema et al., 2014). In a national cohort study, Webb et al. (2017) examined the association of hospital admissions because of self-harm, accidents and interpersonal violence before the age of 15 and self-harm and violent offending at ages 15–35. About one in four men admitted to hospital because of interpersonal violence before the age of 15 was later convicted for committing a violent crime (Webb et al., 2017). **Severe physical abuse in childhood** leading to hospital admissions showed a significant prognostic value and Webb et al. (2017) stated that these results were probably internationally

generalizable. Furthermore, interpersonal violence seemed to increase the risk for the perpetration of violence (Weaver et al., 2008), which might be a risk factor against successful reintegration.

Post-migration stressors

Aiming to assess the unique impact of severe physical abuse in childhood on refugee's emotional distress and integration, this study takes the influence of known post-migration stressors into account. Several **post-migration stressors** -including a long asylum procedure, lack of employment or limited access to health care- interact in their impact on the refugees' mental health (Laban et al., 2005; Böttche et al., 2016; Schneider et al., 2017; Bauhoff and Göpffarth, 2018; Kaltenbach, 2019). In fact, numerous longitudinal studies have demonstrated that emotional distress and post-migration stressors seem to mutually reinforce each other (Bakker et al., 2014; Tingvold et al., 2015; Li et al., 2016). Examining adolescent refugees, it was found that even among severely traumatized youth, post-migration stressors were powerfully related to the presence of PTSD symptoms (Ellis et al., 2008). One of the most prominent post-migration stressors influencing the mental health of refugees is their asylum procedure and **residence status** (Baron and Flory, 2020). In a longitudinal study, the symptom severity of PTSD, anxiety and depression of refugees with accepted claims and refugees with rejected claims was examined (Silove et al., 2007). Despite similar pre-migration trauma and baseline psychiatric symptoms the symptom severity of refugees with accepted claims improved substantially, whilst refugees with rejected claims maintained high symptom severity levels (Silove et al., 2007). Further studies reported that accepted refugees showed less PTSD, anxiety and depression symptoms than asylum seekers (Gerritsen et al., 2006; Stenmark et al., 2013). Several studies suggested that the length of the asylum procedure severely affects mental health (Laban et al., 2005; Phillimore, 2011). Heeren et al. (2016) found that the association between residence status and depression and anxiety remained significant even after controlling for other influencing factors, such as traumatic events, integration and social desirability. Interestingly, in this research the diagnosis of PTSD was independent of the residence status (Heeren et al., 2016).

In addition to the stress related to the residence status, including the risk of being sent back to perilous living conditions in the country of origin, refugees must deal with acculturative stress whilst adapting to the new host culture (Berry, 2005; Phillimore, 2011; Kartal et al., 2018). Amongst four acculturation strategies: assimilation, marginalization, separation and integration, the latter is considered best for emotional well-being (Berry, 2005; Behrens et al., 2015; Han et al., 2016). In contrast to the other strategies, which resist engaging with either the culture of origin and/or the host culture, **integration** aims at maintaining the heritage culture whilst aspiring to become fully engaged in the host society (Han et al., 2016). Harder et al. (2018) defined integration "as the degree to which immigrants have the knowledge and capacity to build a successful, fulfilling life in the host society" (p.2). In this context knowledge refers to the comprehension of the host country's political system, social institutions and national language coupled with the skill to navigate the labour market of the host country; whereas capacity in this context refers to mental, economic and social assets immigrants have to invest in their futures (Harder et al., 2018). Integration is, in this definition, subdivided into six different dimensions: psychological, economic, political, social, linguistic as well as navigational integration (Harder et al., 2018). Research has demonstrated that emotional distress of refugees impaired their integration process. Phillimore (Phillimore, 2011) noted that refugees diagnosed with mental disorders struggled to engage in integrating activities, such as seeking employment or forming relationships with the host population. In longitudinal studies, increased psychological distress 3 years post-migration predicted acculturative difficulties 23 years post-migration (Tingvold et al., 2015). However, the success of integration also influences emotional distress. A longitudinal study on refugees showed that post-migration stressors such as cultural integration, financial stress and loneliness -over and above pre-migration stressors- affected refugees' mental health and disrupted their recovery of mental health over the course of resettlement of 5 years (Stuart and Nowosad, 2020). It has been proposed that pre-migration stressors, post-migration stressors and fear for the future create an ongoing "continuum of stress" for refugees (Silove et al., 1991; Nickerson et al., 2011).

COVID-19 pandemic

On top of all these already examined post-migration stressors, a new additional potential challenge of well-being and mental health has evolved with the **COVID-19 pandemic.** Indeed, the COVID-19 pandemic has already been reported to affect psychiatric disorders (Alpay et al., 2021; Taquet et al., 2021) and even exacerbate PTSD symptoms due to isolation, loss of control and the experience of repeated helplessness (Kizilhan and Noll-Hussong, 2020; Mattar and Piwowarczyk, 2020; Rees and Fisher, 2020). It has already been suggested that the negative consequences of the pandemic may affect vulnerable groups such as refugees even more than the general population (Aragona et al., 2020; Alpay et al., 2021; Gibson et al., 2021). Yet, evidence delineating the potential stressful impact of the COVID-19 pandemic on the mental health of refugees is still limited (Bernardi et al., 2021).

Aim of this study

Considering the above cited evidence, the present study emphasized the following stress factors as predictors of emotional distress and successful integration in a sample of adolescent refugees in Germany: severe physical abuse in childhood and current COVID-19 pandemic.

Materials and methods

Sample

Altogether 97 refugees were recruited if they met the inclusion criteria of refugee status and presenting sufficient understanding of procedures and questions. Data of $n = 12$ refugees had to be excluded due to too much missing data on one of the key variables: severe physical abuse in childhood, emotional distress or integration. Data of one refugee aged 41 years was excluded due to the research's focus on refugee adolescents. Moreover, as physical abuse experienced before the age of 15 years was determined as index of severe physical abuse in childhood, $n = 4$ refugees younger than 15 years had to be excluded. The final sample of $N = 80$ included 71 male (88.8%) and 9 female (11.3%) participants, aged 15 to 27 years, mean age 19.7 years ($SD = 2.2$ years). In case of missing socio-demographic data, missing values are indicated by the deviating n in the results section.

Design and procedure

The assessment was part of a larger project implemented by the Center of Excellence for Psychotraumatology of the University of Konstanz, the Bodensee-Institut für Psychotherapie, and the NGO "vivo international." The project aims at integrating refugees between 14 and 22 years in the existing health care system to provide them with mental health services (for more details see Appendix). The project and current study were approved by the Ethics Committee of the University of Konstanz.

The screening took place from March 2020 to January 2022. Government authorities working with refugees in the German state of Baden-Württemberg, mainly near the city of Konstanz, were informed of the upcoming research project. Social workers employed at the refugees' accommodation informed potential participants between 14–22 years about the project. If refugees agreed to participate, an appointment was scheduled *via* the social worker. Most of the screenings took place in the refugees' accommodation in a separate office and 8.8% came to the office of the Center of Excellence for Psychotraumatology at the University of Konstanz. The questionnaires were administered in a semi-structured interview by trained psychologists with a PhD or master's degree working at the Center of Excellence for Psychotraumatology. Trained interpreters were present in 55% of all cases whereas the other interviews took place in English or German. Prior to screening, participants were informed about the study and signed written informed consent. For the $n = 14$ minors a legal guardian gave additional written consent. It was explained that the participation was voluntary, that it would not influence the asylum procedure and that all data was handled confidentially. Moreover, participants were informed that no monetary compensation was offered and that they would not have to pay for a potential and voluntary treatment. When the screening interview, which lasted about 45 min, was completed, the refugees' symptoms and potential treatment offers were discussed, which included psychotherapy within the project or a transfer to other institutions, for example to refugee psychosocial consultations.

Measurement instruments and measures

The screening interview included **sociodemographic information** such as age, country of origin, years of education, residence status, health insurance, arrival date in Germany, whether the participants had arrived accompanied by family members and whether they had family living in Germany. Moreover, they were asked if they had been involved in physical fighting since entering the country. In addition to sociodemographic information, **"length of stay"** was calculated according to the arrival date in Germany and **"pandemic months"** was calculated according to the months passed since March 2020.

Severe physical abuse in childhood was assessed with the question: "Have you been hit so badly before the age of 15 that you had to go to hospital or needed medical attention?." Participants responded with a yes/no answer. This question refers to the findings of Webb et al. (2017), who analysed hospital admissions in a national cohort study and showed that having experienced interpersonal violence causing hospitalization prior to the age of 15 years considerably increases the risk of harming one-self and/or being convicted because of a violent crime between the age of 15 to 35 years.

Emotional distress was examined using the **Refugee Health Screener** (RHS), a screening tool assessing emotional distress of refugees (Hollifield et al., 2013). The RHS has been applied in various settings with refugees and good reliability and concurrent and predictive validity were found (Hollifield et al., 2013, 2016; Kaltenbach et al., 2017). The RHS-13, which has 13 items, was used in this study (Hollifield et al., 2016). This instrument showed acceptable psychometric properties while being efficient without compromising specificity or sensitivity (Hollifield et al., 2016). The RHS-13 was found to be more economical and valid than the RHS-15 (Borho et al., 2022). Participants rated how much they were bothered by each symptom in the last month, e.g., "feeling down, sad, or blue most of the time." All items were rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely). The cumulative score ranges between 0–52. Participants ($n = 5$) that did not rate > 10% of the RHS-13 items were excluded from the analyses (Hollifield et al., 2016). If participants' missing items accounted for ≤10% of the RHS-13 the respective items were set to zero (Kaltenbach et al., 2017). A dichotomous cut-off score was used and psychotherapy was offered to participants with a total score ≥ 11, which indicated high emotional distress (Hollifield et al., 2016). In the present study, Cronbach's alpha for the instrument resulted in $\alpha = 0.91$.

The **Integration Index** was developed by the Immigration Policy Lab (IPL) and assesses psychological, economic, political, social, linguistic and navigational dimensions of **integration**

(Harder et al., 2018). In this study the IPL-12 scale was used, where each dimension is assessed with two items (Harder et al., 2018). Each of the 12 items can score between 1 and 5 points resulting in a cumulative score between 12 and 60. The cumulative score can be rescaled to range between 0 and 1 for a standardized IPL Integration Index score. Harder et al. (2018) concluded that the questionnaire was appropriate across different countries and different immigrant groups. The Integration Index distinguished among groups of different integration levels and correlated with length of stay and residence status (Harder et al., 2018), showing construct validity. Aligning with the handling of missing items of the RHS-13, participants ($n = 9$) that did not rate > 10% on the IPL-12 were excluded from the analyses and if participants' missing items accounted for ≤10% of the IPL-12 the respective items were set to one. In this study, the Cronbach's alpha for the instrument resulted in $\alpha = 0.79$.

Data analysis

Version 28 of the Statistical Package for Social Sciences (SPSS; IBM Deutschland GmbH, Ehningen, Germany) was used for all data preparation and statistical analyses. For each analysis the respective level of significance ($\alpha \leq 0.5$) is indicated and all correlations were tested two-sided. All sum scores and parameters were generated according to the guidelines of the questionnaires. The requirements for each analysis were examined and if they were not met another suitable analysis was performed.

Kendall's tau correlations and multiple hierarchical regression analyses served to delineate the contribution of various post-migration stressors and, in particular, the impact of severe physical abuse in childhood on emotional distress and integration. The first multiple hierarchical regression analysis targeted emotional distress and included the variables gender, age, residence status and "pandemic months" as additional variables and severe physical abuse in childhood was entered in the second block. The second multiple hierarchical regression analysis predicted integration with gender, age, length of stay in Germany and emotional distress first entered. Severe physical abuse in childhood was entered in a second block. The model fit of the regressions was examined by assessing in which model the Akaike Information Criterion (AIC) was lowest (Akaike, 1987).

Results

Participants' current living situation

Of the study sample ($N = 80$; mean age 19.7 years; $SD = 2.2$ years), $n = 14$ had entered Germany as accompanied minors and $n = 24$ had entered Germany as an unaccompanied minor. Most participants (60.8% of $n = 79$ participants) did currently not have parents or siblings living in Germany. Most of the participants were from Afghanistan (22.5%), Syria (21.3%), Gambia (16.3%) and Guinea (10%). The years of education ranged from 0 to 15 years and participants had visited on average 7.7 years of education ($SD = 3.9$ years). From all disclosures on residence status ($n = 78$), 24.4% had a residence permit, thus enjoyed a secure residence status, while the asylum process was still in progress for 34.6%, which meant only partly insecurity for these participants. For 41% the residence status was not secure, as their asylum application had been rejected or they were awaiting a result in a follow-up asylum procedure. Regarding their occupation ($n = 79$), 41.8% of participants were engaged in school education or vocational training, 19% in language courses, 29.1% had no occupation, and 10.1% were employed full- or part-time. Sixteen participants reported to have been involved in physical fights since their arrival in Germany.

Experiencing restrictions during the **COVID-19 pandemic** was considered an additional burden. Relative to the length of stay in Germany of an average of 2.5 years ($SD = 2.0$ years; range 2 to 97 months), on average 10.6 months ($SD = 5.1$; range 5 to 23) had passed since the beginning of the COVID-19 pandemic in March of 2020. Of $n = 51$ participants, 34 did not have a health insurance card, hence no direct access to the German health system.

One of the main areas of interest of this study was the mental health status of the present refugee sample, described by their **emotional distress, integration** and having experienced **severe physical abuse in childhood.** As per the RHS-13, emotional distress ranged from 0 to 45, with an average of 16.1 points ($SD = 12.8$). About half of the participants (55.9%) scored above the cut-off of 11. As per the IPL-12, the Integration Index ranged from 14 to 55 with an average score of 30.2 ($SD = 8.6$), the average of the rescaled integration score was 0.38 ($SD = 0.18$). Regarding experiences of severe physical abuse in childhood, $n = 28$ responded that they had experienced severe physical abuse in childhood.

Contribution of living situation and severe physical abuse in childhood to emotional distress and integration

Table 1 summarizes all correlations of the relevant variables. Emotional distress correlated negatively with integration ($r = -0.25$, $p = 0.002$), positively with severe physical abuse in childhood ($r = 0.34$, $p < 0.001$) and pandemic months ($r = 0.19$, $p = 0.021$). Integration correlated negatively with pandemic months ($r = -0.23$, $p = 0.005$) and positively with length of stay ($r = 0.48$, $p < 0.001$).

The first hierarchical regression analysis (see Table 2) showed that **emotional distress** was best predicted by the length of pandemic months ($ß = 0.46$, $p < 0.001$). In the second model, severe physical abuse in childhood added variance ($ß = 0.31$, $p = 0.005$) in addition to the pandemic months ($ß = 0.38$, $p < 0.001$). The latter model ($F(5, 72) = 5.63$ and $p < 0.001$) showed the lowest AIC, explained most variance (adjusted $R^2 = 0.23$) and the change in F (8.564) was significant $p = 0.005$.

TABLE 1 Kendall's tau correlations.

	Variables	1	2	3	4	5	6	7	8	9
1.	Emotional distress	–								
2.	Integration	−0.247**	-							
3.	Severe physical abuse in childhood	0.342**	0.159	-						
4.	Pandemic months	0.185*	−0.224**	0.155	-					
5.	Length of stay	−0.134	0.479**	0.091	−0.290**	-				
6.	Gender	−0.150	0.010	−0.178	0.233*	−0.130	-			
7.	Age	0.012	0.046	0.045	−0.237**	0.160	−0.304**	-		
8.	Residence status	−0.061	−0.105	−0.176	−0.135	−0.158	−0.079	0.164	-	
		n = 78	*n* = 78	*n* = 78	*n* = 78	*n* = 78	*n* = 78	*n* = 78		
9.	Family in Germany	−0.189*	−0.112	−0.379**	0.133	−0.176	0.446**	−0.344**	−0.097	-
		n = 79	*n* = 79	*n* = 79	*n* = 79	*n* = 79	*n* = 79	*n* = 79	*n* = 77	

*$p < 0.05$, **$p < 0.01$. If values do not depict the full sample ($N = 80$) the deviating number of n is indicated.

TABLE 2 Regression models of emotional distress on gender, age, residence status, pandemic months, and severe physical abuse in childhood.

Model	Predictor	*b*	*SE b*	*β*	*T*	*P*	R^2	*AIC*
1.	(constant)	−6.100	13.861		−0.440	0.661	0.151	389.015
	Gender	−5.482	4.919	−0.124	−1.114	0.269		
	Age	0.611	0.646	0.103	0.945	0.348		
	Residence status	−0.396	1.713	−0.025	- 0.231	0.818		
	Pandemic months	1.136	0.277	0.456	4.100	<0.001		
2.	(constant)	−6.114	13.195		−0.463	0.664	0.231	382.249
	Gender	−2.698	4.778	−0.061	−0.565	0.574		
	Age	0.461	0.617	0.078	0.747	0.458		
	Residence status	0.453	1.656	0.028	0.247	0.785		
	Pandemic months	0 0.937	0.272	0.376	3.440	<0.001		
	Severe physical abuse in childhood	8.233	2.813	0.312	2.926	0.005		

The determination coefficient R^2 depicts the adjusted R^2 for the respective regression model. AIC = Akaike Information Criterion. These values do not depict the full sample $n = 78$.

Integration (see Table 3) was best predicted by length of stay in Germany ($ß = 0.67$, $p < 0.001$) and emotional distress ($ß = -0.19$, $p = 0.025$). Severe physical abuse in childhood ($ß = 0.21$, $p = 0.019$) added variance in the second model in addition to emotional distress ($ß = -0.28$, $p = 0.002$) and length of stay ($ß = 0.62$, $p < 0.001$). Altogether the latter model ($F(5, 74) = 18.48$, $p < 0.001$) showed the lowest AIC, explained 53% of variance and the change in F (5.718) was significant $p = 0.019$.

Discussion

The present study addressed the impact of severe physical abuse in childhood on emotional distress and integration of adolescent refugees in Germany during the COVID-19 pandemic. Results confirmed that **severe physical abuse in childhood** explained **emotional distress** to a large extent, even when controlling for gender, age and postmigration factors. This finding is in line with results highlighting the detrimental role of physical abuse in childhood on mental health (Kendall-Tackett, 2002; Margolin and Vickerman, 2011; Lindert et al., 2014; Kalia and Knauft, 2020). Stressful and violent life experiences during the emotional and cognitive development in childhood and adolescence are known to impair brain and endocrine development, and thereby increase vulnerability when subsequent stressors occur (Charmandari et al., 2003; Elbert et al., 2006; Teicher et al., 2016). According to a recent review such adverse childhood experiences might affect emotion regulation and cause cognitive distortions, negative core beliefs and anxiety sensitivity, which in turn increase the risk of trauma-related disorders (Panagou and MacBeth, 2022).

In this research, age was not associated to refugee's emotional distress. Research (Bean et al., 2007) that found an association between age, traumatic experiences and emotional distress examined a younger sample of unaccompanied refugee minors and their overall traumatic experiences. The negative correlation between emotional distress and having family in Germany supported evidence that being in the host country with family was

TABLE 3 Regression models of integration on gender, age, length of stay, emotional distress, and severe physical abuse in childhood.

Model	Predictor	*b*	*SE b*	*β*	*t*	*P*	R^2	*AIC*
1.	(constant)	39.929	6.612		5.585	<0.001	0.495	294.996
	Gender	0.557	2.311	0.021	0.241	0.810		
	Age	−0.598	0.029	−0.153	−1.798	0.076		
	Length of stay	0.236	0.029	0.670	8.125	<0.001		
	Emotional distress	−0.126	0.055	−0.188	−2.290	0.025		
2.	(constant)	36.675	6.414		5.718	<0.001	0.525	291.042
	Gender	1.174	2.257	0.043	0.520	0.604		
	Age	−0.577	0.323	−0.148	−1.789	0.078		
	Length of stay	0.217	0.029	0.617	7.446	<0.001		
	Emotional distress	−0.190	0.060	−0.282	−3.178	0.002		
	Severe physical abuse in childhood	3.838	1.605	0.213	2.391	0.019		

The determination coefficient R^2 depicts the adjusted R^2 for the respective regression model. AIC = Akaike Information Criterion. These values depict the full sample $N = 80$.

associated with less emotional distress in the refugees (Laban et al., 2005; Chen et al., 2017; Miller et al., 2018). Two reviews reported a higher prevalence of mental health problems in unaccompanied refugee minors than in those accompanied by family (El Baba and Colucci, 2018; Kien et al., 2019). Family-related emotions and cognitions such as missing the family, loneliness and worries about family in the home country can contribute to the risk for psychopathological developments (Laban et al., 2005). Family was identified as a key domain for interference of post-migration stressors with trauma-related treatment of refugees (Bruhn et al., 2018).

The present study explored the **COVID-19 pandemic** as a further potential stressor which impacts refugee's mental health and integration. Indeed, results indicated that refugees were more emotionally distressed and less integrated the more "pandemic months" they had experienced since March 2020. "Pandemic months" explained a substantial amount of variance of emotional distress, even after severe physical abuse in childhood was added as a predictor. This emphasizes the COVID-19 pandemic as a stress factor impairing mental health (Alpay et al., 2021; Taquet et al., 2021). When Germany implemented contact restrictions and social distancing in March 2020, helpline contacts increased dramatically, mainly driven by mental health issues such as loneliness, fear and depression (Armbruster and Klotzbücher, 2020). It is possible that the harmful impact of social distancing affected the vulnerable group of refugees even harder, increasing the likelihood that they experienced isolation, loss of control and repeated helplessness (Aragona et al., 2020; Kizilhan and Noll-Hussong, 2020; Mattar and Piwowarczyk, 2020; Rees and Fisher, 2020; Alpay et al., 2021; Gibson et al., 2021). In line with this assumption, more refugees (55.9%) met the cut-off of the RHS-13 for high emotional distress in our research than in prior studies (23–41%, 59, 60). Moreover, Kaltenbach et al. (2017) reported a lower average RHS score in a refugee sample from 2016 ($M = 11.55$, $SD = 11.92$) that lived in Germany for less time ($M = 6.53$, $SD = 2.99$ months) than the present sample. While the higher emotional distress in this sample may be attributable to differing demographic factors, it seems likely that the increased emotional distress could be due to COVID-19 related stressors. This highlights an urgent need to further examine the impact and mechanisms of COVID-19 related stressors.

The present results confirmed that refugees with higher **integration** scores showed less emotional distress – and vice versa (Berry, 2005; Behrens et al., 2015; Han et al., 2016). In a previous study, integration has been shown to increase resilience in unaccompanied refugee minors (Rodriguez and Dobler, 2021). Among factors influencing successful integration, the cultural distance between refugees and the host country has been emphasized. In Norway, less integration and more psychological distress was found in immigrants from non-Western compared to immigrants from Western countries (Dalgard and Thapa, 2007). In the present sample, most of the refugees were from non-Western countries, so that cultural distance might have contributed to distress and poor integration. Harder et al. (Harder et al., 2018) reported average standardized IPL-12 scores of 0.8. in a stratified sample of high-income immigrants, 0.55 in a sample of low-income immigrants, 0.46 in immigrants recently enrolled in English language classes in the United States, and 0.69 in a stratified sample of immigrants in Germany. The average rescaled integration score in our study was lower (0.38), indicating that refugees' integration levels differ from immigrants' integration level. Potential differences between refugees and immigrants could be differences in the experience of pre-migration traumatic events, voluntariness of migration and/or abilities to return to their home country (Phillimore, 2011).

A recent review on post-migration stressors and mental health in refugees concluded that length of the asylum procedure -especially a protracted asylum process- was one of the most frequently mentioned post-migration stressors (Gleeson et al., 2020). Yet, **residence status** was neither associated with higher emotional distress (Chen et al., 2017;

Gleeson et al., 2020) nor integration (Schick et al., 2016). This suggests that residence status might be associated with other post-migration stressors, such as different living arrangements, different abilities to seek work and a differing access to health care services between asylum seekers and refugees (Toar et al., 2009; Bauhoff and Göpffarth, 2018).

When **severe physical abuse in childhood** was entered into the regression on **integration,** the regression weight of emotional distress increased. In turn, the association between severe physical abuse in childhood and integration became significant, when controlling for emotional distress. It is tempting to assume that severe physical abuse in childhood and emotional distress acted as reciprocal suppressor variables in this multiple linear regression both increasing the other's regression weight (Conger, 1974). Severe physical abuse in childhood was positively associated with integration. This might indicate that the experience of severe physical abuse in childhood had some adaptive consequences for the refugees. Refugees who have experienced severe physical abuse and other traumatic experiences in their childhood might feel less connected to their home country and may therefore have a stronger motivation to integrate into the host country, than refugees without these experiences. Another explanation has been provided by Haer et al. (2021), who found that social capital increased in communities in the aftermath of experiencing severe violence if the individuals did not develop mental health problems from these experiences. Moreover, research has shown that prenatal stress epigenome-wide interactions with the postnatal environment may enhance resilience in children (Serpeloni et al., 2019). It is possible that the refugees in this research who had experienced severe physical abuse in childhood differed regarding their pre- and postnatal environment, resilience and/or emotion regulation, which in turn resulted in different emotional distress and integration levels.

Mental health of refugees is crucial for their successful integration (Phillimore, 2011; Bakker et al., 2014). Nevertheless, only a small percentage of adolescent refugees with clinically relevant symptoms receive treatment, and in most countries, refugees have only limited access to health care resulting in an unmet need for mental health care (Laban et al., 2007; Silove et al., 2017; Munz and Melcop, 2018; Müller et al., 2019). Munz and Melcop's (2018) survey on refugees' healthcare in 14 European countries concluded that refugees often have to wait for long periods before getting treatment and that the care-giving staff, professionals and/or interpreters are often not sufficiently trained. In Germany, language, navigational, cultural as well as structural barriers aggravate the access of refugees to the regular health care system (Adorjan et al., 2017; Schneider et al., 2017). Politics and research should concentrate on understanding and preventing a vicious cycle between poor mental health resulting from pre- and peri-migration traumatic experiences aggravated by post-migration stressors (Walther et al., 2020).

Limitations

The present sample was culturally diverse with participants originating from 17 different countries. Moreover, the participants faced many different living situations in Germany and showed great heterogeneity regarding their residence status and current activity. Though heterogeneity is a well-known feature of refugee samples (Stenmark et al., 2013; Hecker et al., 2018), diversity may limit general conclusions. In the present study, about half of the interviews needed interpreters; moreover, language- and culture-validated questionnaires were not available for every participant. Nevertheless, the RHS was translated into many different languages while taking into consideration cultural aspects (Hollifield et al., 2016). Furthermore, the interpreters were trained for translating in the mental health context and evidence suggested that the use of professional translators in clinical settings reinforces high-quality psychiatric care (Bauer and Alegría, 2010). Severe physical abuse in childhood was only assessed with one question measuring intensity but not frequency, place, nor perpetrator. Moreover, we did not assess psychological, verbal, or sexual abuse or other traumatic experiences, even though these are also likely to impact refugee's emotional distress. Hence, the isolated impact of distinct forms of violence during childhood in refugee populations could not be analysed. Future research might further evaluate the impact of severe childhood violence experienced within or outside of the family, and how that might differentiate between accompanied and unaccompanied refugees. The high percentage of male participants in this sample may have limited the generalizability of the results. Hence, in the regression analyses it was controlled for potential gender differences and including gender as a covariate did not influence the associations between emotional distress, integration and the predictor variables. Moreover, German statistics on asylum seekers reported a similar high amount of male refugees in the age groups of 16 to 25 years of 73.1–75.9% (Bundesamt für Migration und Flüchtlinge (2022). General limitations include the retrospective data collection, prone to weakening the reliability because of retrospective memories. All findings depended on self-report questionnaires and the answers were subjective and not verifiable. Furthermore, the study was cross-sectional.

Conclusion

The impact of the experience of severe physical abuse in childhood on adolescent refugees' later emotional distress and integration was supported by this study. As expected, experiencing severe physical abuse in childhood led to a higher emotional distress in refugees and higher emotional distress led to a lower integration. These findings highlight the need to take these experiences into consideration during treatment and integration of refugees. Furthermore, this study emphasizes the

devastating impact of the COVID-19 pandemic on psychological well-being and successful integration of adolescent refugees in Germany. These results underline the necessity to mitigate the negative psychological consequences of COVID-19 related preventive measures associated with isolation.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Ethics Committee of the University of Konstanz. Written informed consent to participate in this study was provided by participants themselves and for minor participants by the participants' legal guardian/next of kin.

Author contributions

All authors designed the study. KD, BR, and MS were responsible for acquisition of funding. FP and KD collected the data. FP performed the statistical analyses and drafted the paper under supervision of AC and BR. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Adorjan, K., Kluge, U., Heinz, A., Stamm, T., Odenwald, M., Dohrmann, K., et al. (2017). Versorgungsmodelle für traumatisierte Flüchtlinge in Deutschland [care models for traumatized refugees in Germany]. *Nervenarzt* 88, 989–994. doi: 10.1007/s00115-017-0364-5

Akaike, H. (1987). *Factor Analysis and AIC. Selected Papers of Hirotugu Akaike*. New York, NY: Springer.

Alpay, E. H., Kira, I. A., Shuwiekh, H. A., Ashby, J. S., Turkeli, A., and Alhuwailah, A. (2021). The effects of COVID-19 continuous traumatic stress on mental health: the case of Syrian refugees in Turkey. *Traumatol.* 26, 666–687. doi: 10.1037/trm0000347

Aragona, M., Barbato, A., Cavani, A., Costanzo, G., and Mirisola, C. (2020). Negative impacts of COVID-19 lockdown on mental health service access and follow-up adherence for immigrants and individuals in socio-economic difficulties. *Public Health* 186, 52–56. doi: 10.1017/S0140525X0999152X

Armbruster, S, and Klotzbücher, V. Lost in lockdown? Covid-19, social distancing, and mental health in Germany. Freiburg i. Br.: Diskussionsbeiträge, no. 2020–04, Albert-Ludwigs-Universität Freiburg, Freiburg i. Br. (2020). 35.

Bajbouj, M., Panneck, P., Winter, S.-M., Ajami, C., Alabdullah, J., Benedikt Burger, M., et al. (2021). A central clearing clinic to provide mental health Services for Refugees in Germany. *Front. Public Health* 9:15. doi: 10.3389/fpubh.2021.635474

Bakker, L., Dagevos, J., and Engbersen, G. (2014). The importance of resources and security in the socio-economic integration of refugees. A study on the impact of length of stay in asylum accommodation and residence status on socio-economic integration for the four largest refugee groups in the Netherlands. *J. Int. Migr. Integr.* 15, 431–448. doi: 10.1007/s12134-013-0296-2

Baron, J, and Flory, LV. (2020). *Zur psychosozialen Versorgung von Flüchtlingen und Folteropfern in Deutschland [on the psychosocial care of refugees and torture victims in Germany]*. Berlin, Germany: Bundesweite Arbeitsgemeinschaft der Psychosozialen Zentren für Flüchtlinge und Folteropfer – BAfF e. V.

Bauer, A. M., and Alegría, M. (2010). Impact of patient language proficiency and interpreter service use on the quality of psychiatric care: a systematic review. *Psychiatr. Serv.* 61, 765–773. doi: 10.1176/ps.2010.61.8.765

Bauhoff, S., and Göpffarth, D. (2018). Asylum-seekers in Germany differ from regularly insured in their morbidity, utilizations and costs of care. *PLoS One* 13:e0197881. doi: 10.1371/journal.pone.0197881

Bean, T. M., Eurelings-Bontekoe, E., and Spinhoven, P. (2007). Course and predictors of mental health of unaccompanied refugee minors in the Netherlands: one year follow-up. *Soc. Sci. Med.* 64, 1204–1215. doi: 10.1016/j.socscimed.2006.11.010

Behrens, K., del Pozo, M. A., Großhennig, A., Sieberer, M., and Graef-Calliess, I. T. (2015). How much orientation towards the host culture is healthy? Acculturation style as risk enhancement for depressive symptoms in immigrants. *Int. J. Soc. Psychiatry* 61, 498–505. doi: 10.1177/0020764014560356

Bernardi, L., Gotlib, I. H., and Zihnioğlu, Ö. (2021). Effects of COVID-19-related life changes on mental health in Syrian refugees in Turkey. *BJPsych open.* 7. doi: 10.1192/bjo.2021.1009

Berry, J. W. (2005). Acculturation: living successfully in two cultures. *Int. J. Intercult. Relat.* 29, 697–712. doi: 10.1016/j.ijintrel.2005.07.013

Bogic, M., Njoku, A., and Priebe, S. (2015). Long-term mental health of war-refugees: a systematic literature review. *BMC Int. Health Hum. Rights* 15:29. doi: 10.1192/bjp.bp.110.084764

Borho, A., Morawa, E., and Erim, Y. (2022). Screening der psychischen gesundheit von syrischen Geflüchteten in Deutschland: Der refugee health screener [mental health screening of Syrian refugees in Germany: the refugee health screener]. *Z. Psychosom. Med. Psychother.* 68, 1–14. doi: 10.13109/zptm.2022.68.oa1

Böttche, M., Stammel, N., and Knaevelsrud, C. (2016). Psychotherapeutische Versorgung traumatisierter geflüchteter Menschen in Deutschland

[Psychotherapeutic care of traumatized refugees in Germany]. *Nervenarzt* 87, 1136–1143. doi: 10.1007/s00115-016-0214-x

Bruhn, M., Rees, S., Mohsin, M., Silove, D., and Carlsson, J. (2018). The range and impact of postmigration stressors during treatment of trauma-affected refugees. *J. Nerv. Ment. Dis.* 206, 61–68. doi: 10.1097/NMD.0000000000000774

Bundesamt für Migration und Flüchtlinge. Aktuelle Zahlen 03/2022 [Current numbers 03/2022]. (2022). 17.

Catani, C., Jacob, N., Schauer, E., Kohila, M., and Neuner, F. (2008). Family violence, war, and natural disasters: a study of the effect of extreme stress on children's mental health in Sri Lanka. *BMC Psychiatry* 8, 1–10. doi: 10.1186/1471-244X-8-33

Catani, C., Schauer, E., Elbert, T., Missmahl, I., Bette, J. P., and Neuner, F. (2009). War trauma, child labor, and family violence: life adversities and PTSD in a sample of school children in Kabul. *J. Trauma. Stress.* 22, 163–171. doi: 10.1002/jts.20415

Charmandari, E., Kino, T., Souvatzoglou, E., and Chrousos, G. P. (2003). Pediatric stress: hormonal mediators and human development. *Horm. Res. Paediatr.* 59, 161–179. doi: 10.1159/000069325

Chen, W., Hall, B. J., Ling, L., and Renzaho, A. M. (2017). Pre-migration and post-migration factors associated with mental health in humanitarian migrants in Australia and the moderation effect of post-migration stressors: findings from the first wave data of the BNLA cohort study. *Lancet Psychiatry* 4, 218–229. doi: 10.1016/S2215-0366(17)30032-9

Conger, A. J. (1974). A revised definition for suppressor variables: a guide to their identification and interpretation. *Educ. Psychol. Meas.* 34, 35–46.

Dalgard, O. S., and Thapa, S. B. (2007). Immigration, social integration and mental health in Norway, with focus on gender differences. *Clin. Pract. Epidemiol. Ment. Health* 3, 1–10. doi: 10.1186/1745-0179-3-24

Davidson, G. R., Murray, K. E., and Schweitzer, R. D. (2010). Review of refugee mental health assessment: best practices and recommendations. *J. Pacific Rim Psychol.* 4, 72–85. doi: 10.1375/prp.4.1.72

El Baba, R., and Colucci, E. (2018). Post-traumatic stress disorders, depression, and anxiety in unaccompanied refugee minors exposed to war-related trauma: a systematic review. *Int. J. Cult. Ment. Health* 11, 194–207. doi: 10.1080/17542863.2017.1355929

Elbert, T., Hermenau, K., Hecker, T., Weierstall, R., and Schauer, M. (2012). FORNET: Behandlung von traumatisierten und nicht-traumatisierten Gewalttätern mittels Narrativer Expositionstherapie.

Elbert, T., Rockstroh, B., Kolassa, I.-T., Schauer, M., and Neuner, F. (2006). "The influence of organized violence and terror on brain and mind: a co-constructive perspective" in *Lifespan development and the brain: the perspective of biocultural co-constructivism*. eds. P. Baltes, P. Reuter-Lorenz and F. Rösler (Cambridge: Cambridge University Press). 326–349. doi: 10.1017/CBO9780511499722.017

Ellis, B. H., MacDonald, H. Z., Lincoln, A. K., and Cabral, H. J. (2008). Mental health of Somali adolescent refugees: the role of trauma, stress, and perceived discrimination. *J. Consult. Clin. Psychol.* 76:184. doi: 10.1037/0022-006X.76.2.184

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. *Am. J. Prev. Med.* 14, 245–258. doi: 10.1016/S0749-3797(98)00017-8

Gerritsen, A. A., Bramsen, I., Devillé, W., van Willigen, L. H., Hovens, J. E., and Van Der Ploeg, H. M. (2006). Physical and mental health of afghan, Iranian and Somali asylum seekers and refugees living in the Netherlands. *Soc. Psychiatry Psychiatr. Epidemiol.* 41, 18–26. doi: 10.1007/s00127-005-0003-5

Gibson, B., Schneider, J., Talamonti, D., and Forshaw, M. (2021). The impact of inequality on mental health outcomes during the COVID-19 pandemic: a systematic review. *Can. Psychol.* 62:101. doi: 10.1037/cap0000272

Gleeson, C., Frost, R., Sherwood, L., Shevlin, M., Hyland, P., Halpin, R., et al. (2020). Post-migration factors and mental health outcomes in asylum-seeking and refugee populations: a systematic review. *Eur. J. Psychotraumatol.* 11:1793567. doi: 10.1080/20008198.2020.1793567

Haer, R., Scharpf, F., and Hecker, T. (2021). The social legacies of conflict: the mediating role of mental health with regard to the association between war exposure and social capital of Burundian refugees. *Psychol. Violence* 11:40. doi: 10.1037/vio0000348

Han, L., Berry, J. W., and Zheng, Y. (2016). The relationship of acculturation strategies to resilience: the moderating impact of social support among Qiang ethnicity following the 2008 Chinese earthquake. *PLoS One* 11:e0164484. doi: 10.1371/journal.pone.0164484

Harder, N., Figueroa, L., Gillum, R. M., Hangartner, D., Laitin, D. D., and Hainmueller, J. (2018). Multidimensional measure of immigrant integration. *Proc. Natl. Acad. Sci.* 115, 11483–11488. doi: 10.1073/pnas.1808793115

Hecker, T., Huber, S., Maier, T., and Maercker, A. (2018). Differential associations among PTSD and complex PTSD symptoms and traumatic experiences and postmigration difficulties in a culturally diverse refugee sample. *J. Trauma. Stress.* 31, 795–804. doi: 10.1002/jts.22342

Heeren, M., Wittmann, L., Ehlert, U., Schnyder, U., Maier, T., and Müller, J. (2016). Psychopathologie und Aufenthaltsstatus [psychopathology and residence status]. *Forum der Psychoanalyse*. 32, 135–149. German. doi: 10.1007/s00451-016-0235-x

Hoell, A., Kourmpeli, E., Salize, HJ., Heinz, A., Padberg, F., Habel, U., et al. (2021). Prevalence of depressive symptoms and symptoms of post-traumatic stress disorder among newly arrived refugees and asylum seekers in Germany: systematic review and meta-analysis. *BJPsychol. Open.* 7:E93. doi: 10.1192/bjo.2021.54

Hollifield, M., Toolson, E. C., Verbillis-Kolp, S., Farmer, B., Yamazaki, J., Woldehaimanot, T., et al. (2016). Effective screening for emotional distress in refugees: the refugee health screener. *J. Nerv. Ment. Dis.* 204, 247–253. doi: 10.1097/NMD.0000000000000469

Hollifield, M., Verbillis-Kolp, S., Farmer, B., Toolson, E. C., Woldehaimanot, T., Yamazaki, J., et al. (2013). The refugee health Screener-15 (RHS-15): development and validation of an instrument for anxiety, depression, and PTSD in refugees. *Gen. Hosp. Psychiatry* 35, 202–209. doi: 10.1016/j.genhosppsych.2012.12.002

Kalia, V., and Knauft, K. (2020). Emotion regulation strategies modulate the effect of adverse childhood experiences on perceived chronic stress with implications for cognitive flexibility. *PLoS One* 15:e0235412. doi: 10.1371/journal.pone.0235412

Kaltenbach, E. Mental health of refugees: Addressing and overcoming challenges in the identification and treatment of mental health problems [Doctoral thesis]. [Konstanzer Online-Publikations-System (KOPS)]: Universität Konstanz. (2019). 196.

Kaltenbach, E., Härdtner, E., Hermenau, K., Schauer, M., and Elbert, T. (2017). Efficient identification of mental health problems in refugees in Germany: the refugee health screener. *Eur. J. Psychotraumatol.* 8:1389205. doi: 10.1080/20008198.2017.1389205

Kartal, D., Alkemade, N., Eisenbruch, M., and Kissane, D. (2018). Traumatic exposure, acculturative stress and cultural orientation: the influence on PTSD, depressive and anxiety symptoms among refugees. *Soc. Psychiatry Psychiatr. Epidemiol.* 53, 931–941. doi: 10.1007/s00127-018-1532-z

Kendall-Tackett, K. (2002). The health effects of childhood abuse: four pathways by which abuse can influence health. *Child Abuse Negl.* 26, 715–729. doi: 10.1016/S0145-2134(02)00343-5

Kien, C., Sommer, I., Faustmann, A., Gibson, L., Schneider, M., Krczal, E., et al. (2019). Prevalence of mental disorders in young refugees and asylum seekers in European countries: a systematic review. *Eur. Child Adolesc. Psychiatry* 28, 1295–1310. doi: 10.1007/s00787-018-1215-z

Kizilhan, JI, and Noll-Hussong, M. *Psychological Impact of COVID-19 in a Refugee Camp in Iraq*. PCN. (2020).

Laban, C. J., Gernaat, H. B., Komproe, I. H., and De Jong, J. T. (2007). Prevalence and predictors of health service use among Iraqi asylum seekers in the Netherlands. *Soc. Psychiatry Psychiatr. Epidemiol.* 42, 837–844. doi: 10.1007/s00127-007-0240-x

Laban, C. J., Gernaat, H. B., Komproe, I. H., Van Der Tweel, I., and De Jong, J. T. (2005). Postmigration living problems and common psychiatric disorders in Iraqi asylum seekers in the Netherlands. *J. Nerv. Ment. Dis.* 193, 825–832. doi: 10.1097/01.nmd.0000188977.44657.1d

Li, S. S., Liddell, B. J., and Nickerson, A. (2016). The relationship between post-migration stress and psychological disorders in refugees and asylum seekers. *Curr. Psychiatry Rep.* 18:82. doi: 10.1007/s11920-016-0723-0

Lindert, J., von Ehrenstein, O. S., Grashow, R., Gal, G., Braehler, E., and Weisskopf, M. G. (2014). Sexual and physical abuse in childhood is associated with depression and anxiety over the life course: systematic review and meta-analysis. *Int. J. Public Health* 59, 359–372. doi: 10.1007/s00038-013-0519-5

Margolin, G., and Vickerman, K. A. (2011). Posttraumatic stress in children and adolescents exposed to family violence: I. overview and issues. *Prof. Psychol. Res. Pr.* 38:613. doi: 10.1037/2160-4096.1.S.63

Mattar, S., and Piwowarczyk, L. A. (2020). COVID-19 and US-based refugee populations: commentary. *Psychol. Trauma* 12:S228. doi: 10.1037/tra0000602

Miller, A., Hess, J. M., Bybee, D., and Goodkind, J. R. (2018). Understanding the mental health consequences of family separation for refugees: implications for policy and practice. *Am. J. Orthopsychiatry* 88:26. doi: 10.1037/ort0000272

Müller, L. R. F., Büter, K. P., Rosner, R., and Unterhitzenberger, J. (2019). Mental health and associated stress factors in accompanied and unaccompanied refugee minors resettled in Germany: a cross-sectional study. *Child Adolesc. Psychiatry Ment. Health* 13, 1–13. doi: 10.1186/s13034-019-0268-1

Müller-Bamouh, V., Ruf-Leuschner, M., Dohrmann, K., Elbert, T., and Schauer, M. (2020). Gewalterfahrungen und psychische Gesundheit im Verlauf bei unbegleiteten minderjährigen Flüchtlingen in Deutschland [Experiences of violence and mental

health over time in among unaccompanied refugee minors in Germany]. *Z. Klin. Psychol. Psychother.* 48, 204–218. doi: 10.1026/1616-3443/a000564

Munz, D., and Melcop, N. (2018). The psychotherapeutic care of refugees in Europe: treatment needs, delivery reality and recommendations for action. *Eur. J. Psychotraumatol.* 9:1476436. doi: 10.1080/20008198.2018.1476436

Nickerson, A., Bryant, R. A., Silove, D., and Steel, Z. (2011). A critical review of psychological treatments of posttraumatic stress disorder in refugees. *Clin. Psychol. Rev.* 31, 399–417. doi: 10.1016/j.cpr.2010.10.004

Olema, D. K., Catani, C., Ertl, V., Saile, R., and Neuner, F. (2014). The hidden effects of child maltreatment in a war region: correlates of psychopathology in two generations living in northern Uganda. *J. Trauma. Stress.* 27, 35–41. doi: 10.1002/jts.21892

Panagou, C., and MacBeth, A. (2022). Deconstructing pathways to resilience: a systematic review of associations between psychosocial mechanisms and transdiagnostic adult mental health outcomes in the context of adverse childhood experiences. *Clin. Psychol. Psychother.* 29, 1626–1654. doi: 10.1002/cpp.2732

Phillimore, J. (2011). Refugees, acculturation strategies, stress and integration. *J. Soc. Policy* 40, 575–593. doi: 10.1017/S0047279410000929

Rees, S., and Fisher, J. (2020). COVID-19 and the mental health of people from refugee backgrounds. *Int. J. Health Sci.* 50, 415–417. doi: 10.1177/0020731420942475

Rodriguez, I. M., and Dobler, V. (2021). Survivors of hell: resilience amongst unaccompanied minor refugees and implications for treatment-a narrative review. *J. Child Adolesc. Trauma* 14, 559–569. doi: 10.1007/s40653-021-00385-7

Schauer, M., Schauer, M., Neuner, F., and Elbert, T. (2011). *Narrative Exposure Therapy: A Short-term Treatment for Traumatic Stress Disorders*. Göttingen: Hogrefe Publishing.

Schick, M., Zumwald, A., Knöpfli, B., Nickerson, A., Bryant, R. A., Schnyder, U., et al. (2016). Challenging future, challenging past: the relationship of social integration and psychological impairment in traumatized refugees. *Eur. J. Psychotraumatol.* 7:28057. doi: 10.3402/ejpt.v7.28057

Schneider, F., Bajbouj, M., and Heinz, A. (2017). Psychische Versorgung von Flüchtlingen in Deutschland [Mental health care of refugees in Germany]. *Nervenarzt* 88, 10–17. doi: 10.1007/s00115-016-0243-5

Serpeloni, F., Radtke, K. M., Hecker, T., Sill, J., and Vukojevic, V. (2019). Assis SGd, et al. does prenatal stress shape postnatal resilience?–an epigenome-wide study on violence and mental health in humans. *Front. Genet.* 10:269. doi: 10.3389/fgene.2019.00269

Silove, D., Steel, Z., Susljik, I., Frommer, N., Loneragan, C., Chey, T., et al. (2007). The impact of the refugee decision on the trajectory of PTSD, anxiety, and depressive symptoms among asylum seekers: a longitudinal study. *Am. J. Disaster Med.* 2, 321–329. doi: 10.5055/ajdm.2007.0041

Silove, D., Tarn, R., Bowles, R., and Reid, J. (1991). Psychosocial needs of torture survivors. *Aust. N. Z. J. Psychiatry* 25, 481–490. doi: 10.3109/00048679109064441

Silove, D., Ventevogel, P., and Rees, S. (2017). The contemporary refugee crisis: an overview of mental health challenges. *World Psychiatry* 16, 130–139. doi: 10.1002/wps.20438

Steel, Z., Chey, T., Silove, D., Marnane, C., Bryant, R. A., and Van Ommeren, M. (2009). Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: a systematic review and meta-analysis. *JAMA* 302, 537–549. doi: 10.1001/jama.2009.1132

Stenmark, H., Catani, C., Neuner, F., Elbert, T., and Holen, A. (2013). Treating PTSD in refugees and asylum seekers within the general health care system. A randomized controlled multicenter study. *Behav. Res. Ther.* 51, 641–647. doi: 10.1016/j.brat.2013.07.002

Stuart, J., and Nowosad, J. (2020). The influence of Premigration trauma exposure and early Postmigration stressors on changes in mental health over time among refugees in Australia. *J. Trauma. Stress.* 33, 917–927. doi: 10.1002/jts.22586

Taquet, M., Luciano, S., Geddes, J. R., and Harrison, P. J. (2021). Bidirectional associations between COVID-19 and psychiatric disorder: retrospective cohort studies of 62 354 COVID-19 cases in the USA. *Lancet Psychiatry* 8, 130–140. doi: 10.1016/S2215-0366(20)30462-4

Teicher, M. H., and Samson, J. A. (2013). Childhood maltreatment and psychopathology: a case for ecophenotypic variants as clinically and neurobiologically distinct subtypes. *Am. J. Psychiatry* 170, 1114–1133. doi: 10.1176/appi.ajp.2013.12070957

Teicher, M. H., Samson, J. A., Anderson, C. M., and Ohashi, K. (2016). The effects of childhood maltreatment on brain structure, function and connectivity. *Nat. Rev. Neurosci.* 17, 652–666. doi: 10.1038/nrn.2016.111

Tinghög, P., Malm, A., Arwidson, C., Sigvardsdotter, E., Lundin, A., and Saboonchi, F. (2017). Prevalence of mental ill health, traumas and postmigration stress among refugees from Syria resettled in Sweden after 2011: a population-based survey. *BMJ Open* 7:e018899. doi: 10.1136/bmjopen-2017-018899

Tingvold, L., Vaage, A. B., Allen, J., Wentzel-Larsen, T., Van Ta, T., and Hauff, E. (2015). Predictors of acculturative hassles among Vietnamese refugees in Norway: results from a long-term longitudinal study. *Transcult. Psychiatry* 52, 700–714. doi: 10.1177/1363461515572208

Toar, M., O'Brien, K. K., and Fahey, T. (2009). Comparison of self-reported health & healthcare utilisation between asylum seekers and refugees: an observational study. *BMC Public Health* 9, 1–10. doi: 10.1186/1471-2458-9-214

United Nations High Commissioner for Refugees *Global trends: Forced displacement in 2019*. Copenhagen, Denmark: United Nations High Commissioner for Refugees. (2020).

United Nations High Commissioner for Refugees *Mid-year Trends 2021*. Copenhagen, Denmark: United Nations High Commissioner for Refugees. (2021). 22.

Walther, L., Fuchs, L. M., Schupp, J., and Von Scheve, C. (2020). Living conditions and the mental health and well-being of refugees: evidence from a large-scale German survey. *J. Immigr. Minor. Health* 22, 903–913. doi: 10.1007/s10903-019-00968-5

Weaver, C. M., Borkowski, J. G., and Whitman, T. L. (2008). Violence breeds violence: childhood exposure and adolescent conduct problems. *J. Community Psychol.* 36, 96–112. doi: 10.1002/jcop.20219

Webb, R. T., Antonsen, S., Carr, M. J., Appleby, L., Pedersen, C. B., and Mok, P. L. (2017). Self-harm and violent criminality among young people who experienced trauma-related hospital admission during childhood: a Danish national cohort study. *Lancet Public Health* 2, e314–e322. doi: 10.1016/S2468-2667(17)30094-4

Wilker, S., Pfeiffer, A., Kolassa, S., Koslowski, D., Elbert, T., and Kolassa, I.-T. (2015). How to quantify exposure to traumatic stress? Reliability and predictive validity of measures for cumulative trauma exposure in a post-conflict population. *Eur. J. Psychotraumatol.* 6:28306. doi: 10.3402/ejpt.v6.28306

Appendix

Research project

All data was collected in a research cooperation project called "Furchtlos" (fearless) by the Center of Excellence for Psychotraumatology of the University of Konstanz, the Bodensee-Institut für Psychotherapie, and the NGO "vivo international." "Furchtlos" aims to establish mental health care for refugees between 14 and 22 years of age in the existing health care system. The aim is to improve educational prerequisites as well as social, vocational and societal integration by improving the mental health of young refugees in Baden-Württemberg. Refugees were screened; emotionally distressed refugees were comprehensively informed about their symptoms and they were offered psychotherapy within the project or referred to other institutions. Further, interpreters were trained in translating in the mental health context and served as peer counsellors to support the refugees with therapy, including tasks such as explaining differences of the German health care system, reminding the refugees of therapy appointments or accompanying them to therapy when necessary. Psychologists were trained in Narrative Exposition Therapy (NET) and in Forensic Offender Rehabilitation NET (FORNET), an adaption of NET for perpetrators with a low threshold for aggression (Schauer et al., 2011; Elbert et al., 2012). Furthermore, if needed, the supervisors of the psychologists were trained in NET and FORNET. The treating psychologists decided which treatment was most adequate for their patient, often including NET or FORNET. The overall aim of this proof-of-concept project is the implementation of a proven and established training curriculum for a treatment program specifically tailored to the challenges and needs of young refugees. It is sought to demonstrate a successful model of implementation across the German health care structures. By addressing the prospective therapists, their supervisors, the translators and peer counsellors it is sought to develop structures for stepwise assistance and treatment, including identification, screening, diagnosis, treatment and follow-up.

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EDITED BY
Elisa Pfeiffer,
Ulm University Medical Center, Germany

REVIEWED BY
Usama EL-Awad,
Bielefeld University, Germany
Maike Garbade,
Ulm University Medical Center, Germany

*CORRESPONDENCE
Caroline Meyer
caroline.meyer@fu-berlin.de

†These authors share last authorship

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With a little help from my friends? Acculturation and mental health in Arabic-speaking refugee youth living with their families

Caroline Meyer[1]*, Lina Alhaddad[1,2], Nadine Stammel[1], Frederick Sixtus[1,3], Jenny Sarah Wesche[1], Rudolf Kerschreiter[1], Patricia Kanngiesser[4†] and Christine Knaevelsrud[1†]

[1]Faculty of Education and Psychology, Freie Universität Berlin, Berlin, Germany, [2]Department of Educational Psychology, Martin Luther University of Halle-Wittenberg, Halle (Saale), Germany, [3]Berlin Institute for Population and Development, Berlin, Germany, [4]School of Psychology, University of Plymouth, Plymouth, United Kingdom

Introduction: Refugee youth are often faced with the compounding challenges of heightened exposure to traumatic events and acculturating to a new country during a developmental period when their sense of self is still forming. This study investigated whether refugee youth's acculturation orientation (separation, integration, marginalization, and assimilation) is associated with depressive and posttraumatic stress symptoms and aimed to identify additional indicators of acculturation that may contribute to mental health.

Methods: A total of 101 Arabic-speaking refugee youths (aged 14–20 years), who were living with their families and attending school in Germany, took part in the study. They answered questions concerning traumatic exposure and posttraumatic stress symptoms, depressive symptoms, and several indicators of acculturation, including cultural orientation, positive and negative intra- and intergroup contact, language skills and friendship networks. All participants were categorized into one of four acculturation orientations using median splits.

Results: Kruskal–Wallis rank sum tests revealed that acculturation orientation was not significantly associated with depressive symptoms [χ^2 (3, 97) = 0.519, p = 0.915] or posttraumatic stress symptoms [χ^2 (3, 97) = 0.263, p = 0.967]. Regression analysis revealed that German language skills were significantly associated with lower scores of depressive symptoms (p = 0.016) and number of friends in Germany was significantly associated with lower scores of depressive (p = 0.006) and posttraumatic stress symptoms (p = 0.002), respectively.

Discussion: Policies that provide refugee youth with access to language classes and social activities with peers do not only enable them to actively participate in a new society but may also have a positive effect on their mental health.

KEYWORDS

depression, posttraumatic stress, PTSD, adolescents, minors, Syria, social support, language

1. Introduction

In recent years, the number of people who have been forced to migrate has increased dramatically worldwide. At the end of 2021, the United Nations High Commissioner for Refugees estimated that approximately 89.3 million people had been forcibly displaced from their homes and that 41% of them were minors (1). Refugee youth, compared to non-refugee youth, show increased rates of short- and long-term mental health problems such as post-traumatic stress disorder (PTSD), depression, or anxiety disorders (2, 3). Moreover, resettlement in a new country can be particularly challenging for youth as, in addition to acculturative challenges, they also experience developmental changes such as puberty, renegotiating relationships with their parents, and forming a sense of self (4–6).

Most research on refugee youth mental health to date has focused on unaccompanied youth, who face a particularly high risk of experiencing adverse events and trauma during flight and must face post-migration stressors without their primary caregivers (7–9). This often results in higher rates of mental health problems (10, 11). However, refugee youth living with their families also show elevated levels of mental health problems (9, 12) and share several risk factors with unaccompanied youth such as traumatic exposure in their home country and during their flight, and/or being separated from relatives (13, 14).

Refugee youth living with their parents are also exposed to other potential stressors. Due to the challenges experienced during their flight, refugee parents may experience elevated levels of mental health problems (15), which in turn have been associated with mental health problems in children and youth (16, 17). Refugee youth living with their families often have to navigate two worlds in their everyday life, one at home and one outside their home. While this allows them to develop unique skills, such as flexibility, adaptability, and empathy (18), it can be challenging when socio-cultural expectations vary drastically between these two "worlds" and when refugee youth and their parents adjust differently to life in the resettlement country (19–21). Specifically, refugee parents may value retaining their home culture (22), but refugee youth are often exposed to different cultural expectations when attending educational institutions (23, 24). This can result in conflicts between parents and children (19, 25). Overall, research has consistently shown that refugee youth are confronted with several stressors when adjusting to a new country which can negatively affect mental health (26–29).

The term "acculturation" has been used to describe the "meeting of cultures and the resulting changes" (30). Although all groups that come into contact may undergo change, in practice, changes are usually more pronounced in individuals who settle in a new country (and not vice versa). Berry (31) proposed a model for categorizing people's acculturation orientations along two dimensions: (1) whether the heritage culture (also referred to as "minority" or "home" culture) is maintained after resettlement, and (2) whether the culture of the resettlement country (also referred to as "majority" or "host" culture) is adopted. Across these two dimensions, four distinct acculturation orientations emerge: Individuals who show an assimilation orientation adopt the culture of the resettlement country but do not maintain their heritage culture; those who show a separation orientation do not adopt the culture of the resettlement country but maintain their heritage culture; an integration orientation, also referred to as biculturalism, is shown by individuals who adopt the culture of the resettlement country while maintaining their heritage culture, and, finally, marginalization occurs when individuals neither maintain their heritage culture nor adopt the culture of the resettlement country. In the past years, a growing body of literature has examined the relationship between acculturation orientations and mental health in migrants and refugees. A systematic review and meta-analysis including 83 studies with immigrant minors and adults found that a bicultural orientation was associated with better psychosocial adjustment compared to a monocultural orientation (32). For immigrant youth, a (flexible) orientation toward both the heritage culture and culture of the resettlement country has also been connected to better psychological adjustment (33). Research with refugee youth from the Middle East showed that integration was associated with less internalizing symptoms, less post-migrations stressors and better sociocultural adjustment (34, 35).

However, the model proposed by Berry (31) has also received several critiques. It has been criticized that people's acculturation orientations do not always fit into the four above mentioned categories and that the advantages or disadvantages of different orientations may depend on contextual and/or individual factors (24). For example, orientation toward the culture of the resettlement country has been associated with better mental health in educational and work settings, while orientation toward the heritage culture was preferable for mental health outcomes in private life (36). It has also been criticized that the model focuses predominantly on acculturation orientation of the immigrant or refugee groups while neglecting the role of the context in which these attitudes are shaped, for example state policies or acculturation attitudes of the majority population in the resettlement country (37). Furthermore, comparisons between studies can be difficult due to differences in methodologies and in how acculturation is operationalized (30).

In addition to measures of cultural orientation, other variables that are associated with refugee youth' adjustment to life in their resettlement country may also play a role in refugee youth's mental health. For instance, proficiency in the language of the resettlement country has been reported to be an important indicator of acculturation processes: Young refugees resettled in Australia who reported higher confidence in their language skills had fewer problems overall and settled in faster (38). Language skills have also been connected to better mental health in accompanied and unaccompanied refugee youth, for instance in Denmark, Germany, and Australia (9, 39, 40), and in Syrian refugee youth resettled in Germany (35). Another important indicator of acculturation is access to social networks. Specifically, social support has been consistently identified as a protective factor for mental health problems and PTSD (41, 42). For refugee youth, this includes support by family and relatives (43–45), but especially by peer networks and friends (43, 46–48). Other factors also play a role in refugee youths' mental health outcomes, such as country of origin (11, 49), not having a secure status of residence in the resettlement country (49, 50), and a sense of belonging to their school (25, 51). These findings highlight the need to investigate a range of potential protective factors, in addition to cultural orientation, to gain a nuanced understanding of the relation between acculturative processes and mental health.

As outlined above, refugee youths belong to a vulnerable group. They may experience resettlement as particularly challenging due to the compounding effects of having to acculturate to a new country and facing the developmental tasks of adolescence (5). It is therefore important to identify potential protective factors that may foster mental health and adjustment after resettlement. This study focused on Arabic-speaking refugee youth in Germany. Since 2015 Europe, and more specifically Germany, has seen an unprecedented influx of refugees from the Middle East, predominantly by refugees from Syria and Iraq (52). At the time of the study, these two groups made up one third of the refugee population in Germany with most of them speaking Arabic as a mother tongue or as a second language (53). Given these number, it is essential to understand how Arabic-speaking refugee youth adjust to life in Germany, and which impact the transition has on their mental health and wellbeing. Our study had two aims. First, to test whether acculturation orientation is associated with depressive and posttraumatic stress symptoms. Second, to identify additional factors associated with acculturation processes that are associated with depressive and posttraumatic stress symptoms.

2. Materials and methods

2.1. Sample characteristics

We targeted Arabic-speaking refugee youth above the age of 14 who attended school in Berlin, Germany. Of the 112 students who agreed to participate, seven participants dropped out during data collection and were excluded from the study. Of the remaining 105 participants, two participants were excluded after data collection as they reported an age below 14, another two participants were excluded for the purpose of this analysis as they reported living unaccompanied in Germany and this study focused on youth living with their families. The final sample consisted of 101 refugee youths (52.3% females, none identified as "other") living with their families, aged 14–20 years (M = 16.6, SD = 1.34). All participants spoke Arabic and came to Germany as refugees. Most participants originated from Syria (75.2%), followed by Iraq (10.9%), and Palestine (5.9%). Almost all participants (96.0%, n = 97) reported having experienced at least one potentially traumatic event with an average of nine potentially traumatic events per participant. When screened for symptoms of mental health problems, 12.9% (n = 13) of the total sample met the screening criteria for probable PTSD according to the PCL-5, and 57% (n = 58) scored above the cut-off for depression according to HSCL-25. See **Table 1** for a detailed description of the sample.

This study was part of a larger project investigating how newly arrived Arabic-speaking refugee youth adjust to life in Germany [for a qualitative study with a different sample of youth in the Berlin/Brandenburg area, see (4)]. To recruit participants, we contacted 418 schools in Berlin *via* email and informed them about the study. A total of 14 schools agreed to participate in the study. All other schools were either unavailable, had no students that fulfilled the inclusion criteria, withdrew their agreement to participate, or did not respond. Before the main study, we conducted a series of pilots to ensure that procedures and study materials were appropriate. First, we tested the full survey on a group of Arabic-speaking refugee adults as well as with one refugee adolescent. Thereafter, we piloted the survey with six Arabic-speaking refugee youths in one of the schools that had agreed to take part in the study. Participants' feedback was included in the final survey and the six participants were excluded from the final data set.

Data collection took place in Berlin, Germany, between November 2018 and June 2019 and followed the same procedure at every school. For each school's testing appointment, one native Arabic-speaking and one native German-speaking researcher were present. Arabic-speaking refugee youths aged 14 years and older were identified by the school and invited to take part in the study by the two researchers. In Berlin, most students arriving as refugees or immigrants start to attend so-called Willkommensklassen (welcome-classes) within 3 months of their arrival. These classes focus on language acquisition and on introducing newly arrived students to the German school system. As soon as students in welcome-classes are sufficiently fluent in German, they transfer to

TABLE 1 Sample characteristics.

	n	%	*M*	*SD*	Range
Female gender	53	52.5	–	–	
Age	–	–	16.6	1.34	14–20
Length of stay in Germany (in years)	–	–	3.12	1.32	1–7
Potentially traumatic experiences (PTE)	–	–	8.87	5.61	0–20
Secure asylum status	39	38.6	–	–	–
Country of origin					
Syria	76	75.2			
Iraq	11	10.9	–	–	–
Palestine	6	5.9			
Lebanon	3	3.0			
Egypt	1	1.0	–	–	–
Libya	1	1.0			
Bahrein	2	2.0			
Kuwait	1	1.0	–	–	–
Class: welcome-class	34	33.7	–	–	–
Friends					
All friends	–	–	7.95	8.18	0–30
Friends in Germany	–	–	5.73	6.31	0–30
Friends born in Germany	–	–	5.65	6.09	0–30
Depressive symptoms (HSCL-25)	–	–	1.95	0.55	1–3.40
Posttraumatic stress symptoms (PLC-5)	–	–	18.3	14.1	0–67
Acculturation Germany (unidimensional)	–	–	4.60	1.17	1.8–7
Acculturation heritage (unidimensional)	–	–	5.92	1.08	1.9–7

N = 101; HSCL-25: Hopkins-Symptom Checklist-25, PCL-5: PTSD-Checklist.

regular classes. For this study, students from both welcome-classes and regular classes were invited to participate. All contact was handled by the school.

Those who agreed to participate were gathered in a different classroom to ensure quiet surroundings. Every participant received a tablet on which the survey was presented in written form in both Arabic and German using the Software LimeSurvey (54). Before starting the survey, the students were informed about the details of the study and gave consent to participate (no parental consent was needed as adolescents were aged 14 years and older). A maximum of six students took part in each session, which lasted around 45 min on average. Both researchers were available to answer questions during the survey sessions and ensured that participants did not influence each other and answered the survey independently. For those students who were not able to read in Arabic due to interrupted education on the flight journey and had insufficient German language skills, questions were read quietly in Arabic by the Arabic-speaking researcher. At the end of the session, participants received a 12 Euro voucher from an electronics store and a list of mental health counseling services available in Arabic should the need for such services arise.

The Research Ethics Committee of the Department of Education and Psychology at Freie Universität Berlin the Berlin (203/2018) and the Berlin Senate's Department for Education, Youth and Family approved this study.

2.2. Measures

For all measures, a three-step approach was used to obtain valid instruments as recommended for cross-cultural research (55). Firstly, measures were translated from English to German and Arabic. Secondly, another person translated the questionnaires back into English, and thirdly, differences between the two versions were discussed and the wording was revised accordingly. The scales concerning acculturation orientation and positive and negative inter- and intragroup contact were translated in the same way for a previous study (56).

2.2.1. Sociodemographic variables

The survey included questions regarding participants' age, gender (female, male, other), and country of origin. The socio-demographic survey also asked about participants' flight to Germany (time of arrival), whether they lived alone or with their family, the type of class attended (welcome-class or regular class) and their asylum status. A confirmed asylum status was considered "secure," while a temporary status or rejection were considered "insecure."

2.2.2. Traumatic exposure and posttraumatic stress symptoms

To assess exposure to potentially traumatic events, two standardized trauma lists, the Harvard Trauma Questionnaire [HTQ; (57)], focusing on war-related trauma and torture, and the Posttraumatic Diagnostic Scale (58, 59) focusing on civilian trauma, were combined. Specifically for the HTQ, the authors recommend modifying and adapting the questionnaire to the characteristics of each cultural group as traumatic events may vary depending on historical, political, and social context. Therefore, the combined trauma list was supplemented with two additional items, "ill-treatment by smugglers" and "violent attack by authorities" that were identified as frequently occurring on the Balkan route, one of the main flight routes for refugees from the Middle East in 2015/2016 (60). The resulting list was presented to the participants three times, asking for experiences in their home country, during their flight, and in Germany. For each list, events were rated as "experienced" "witnessed," or "neither-nor." For the current study, the three lists were combined, i.e., when a traumatic event was marked as "experienced" or "witnessed" in any of the three lists (in their home country, during their flight, in Germany) it was scored as 1, otherwise it was scored as 0, and a sum score across all trauma types was calculated.

Posttraumatic stress symptoms according to the DSM-5 criteria were assessed using the PTSD-Checklist for DSM-5 [PCL-5; (61)]. Participants answered 20 items on a five-point Likert scale (from 0 "not at all" to 4 "extremely"). Sum scores were calculated for the analysis. Reliability in the current study was excellent (Cronbach's $\alpha = 0.92$). To screen for a probable PTSD diagnosis, we followed the DSM-5 diagnostic rule. As recommended, each item rated as 2 = "Moderately" or higher was considered an endorsed symptom. Participants that met DSM-5 diagnostic criteria according to this recommendation were considered as probably having PTSD.

2.2.3. Depressive symptoms

Depressive symptoms were assessed using the depression subscale of the Hopkins-Symptom Checklist-25 [HSCL-25; (62)]. The scale consists of 15 items that are scored on a four-point Likert scale (from 1 "not at all" to 4 "extremely"). Mean scores were calculated for the analysis. Values ≥ 1.75 indicate possible depression. Reliability in the current study was good (Cronbach's $\alpha = 0.86$).

2.2.4. Acculturation related variables

Acculturation was assessed using several indicators to cover various facets of acculturation attitudes, behaviors, and competencies.

2.2.4.1. Vancouver index of acculturation

The Vancouver index of acculturation (VIA) assesses orientation toward the heritage culture and the culture of the resettlement country (63). The 20 items were presented in pairs, with one item in each pair referring to the heritage culture and the other item referring to German culture, for example "I often participate in cultural traditions of the Syrian culture" or "I often participate in German cultural traditions." Items were rated on a seven-point scale ranging from not at all (1) to very much so (7) with higher subscale scores indicating higher levels of orientation toward the culture represented. The VIA has been used in several studies with children and adolescents and proven a valid instrument (64–66). Recently, an Arabic translation of the VIA has been validated in 957 Syrian refugee children and youth aged 11–18 living in Turkey (67). Analyses confirmed the two-dimensional structure and showed good construct, convergent and discriminant validity as well as satisfying reliability coefficients. Reliability in the current study was excellent for the subscale concerning heritage culture (Cronbach's $\alpha = 0.91$) and good for the subscale concerning German culture (Cronbach's $\alpha = 0.86$).

2.2.4.2. Positive and negative contact with heritage culture and German culture

To measure intergroup contact in Germany with persons from the heritage culture and the German culture, a short questionnaire was used that assesses quantity and quality of contact (68). For both cultural groups, eight items were presented to assess the amount of positive and negative contact, for example "How often do you have friendly contact with Germans?" or "How often did you have conflicts with people from your home country in Germany?" Items were rated on a 7-point scale ranging from very little (1) to very much (7). Reliability in the current study was acceptable for all four scales (Cronbach's $\alpha = 0.71$ to Cronbach's $\alpha = 0.78$).

2.2.4.3. German language skills

Participants were asked to subjectively rate their German language skills on four dimensions: Speaking, writing, reading, and listening. Each scale ranged from 0 ("no ability") to 4 ("very good"). For analyses, a mean score was calculated across all four dimensions with higher values indicating better German language skills.

2.2.4.4. Friendship network

To assess participants friendship network, participants were asked three questions: (1) "How many close friends do you have?," (2) "How many of your close friends live in Germany?," and (3) "How many of your close friends were born in Germany?" For each question, the scale ranged from 0 to 30 friends.

2.3. Statistical analysis

To test for associations between acculturation orientations and mental health, all participants were assigned to one of the four acculturation orientations proposed by Berry (31). Following the procedure used by Behrens et al. (69), both scales of the VIA were split at the median to determine low vs. high orientation toward the heritage culture and the German culture, respectively. The four acculturation orientations were as follows: Separation (high heritage/low German orientation, $n = 25$), integration (high heritage/high German orientation, $n = 24$), marginalization (low heritage/low German orientation, $n = 29$), and assimilation (low heritage, high German orientation, $n = 25$). Afterward, Kruskal–Wallis tests were conducted to test for differences in depressive symptoms and posttraumatic stress symptoms between the four groups. To address critiques of the acculturation model proposed by Berry (31), we additionally performed Kruskal-Wallis tests for both scales separately (orientation toward heritage cultural group high/low and orientation toward German cultural group high/low).

To identify further indicators of acculturation, correlation analysis was conducted. Afterward, linear regression analysis was conducted separately for depressive and posttraumatic stress symptoms. All indicators that revealed significant correlations with either depressive or posttraumatic stress symptoms were included into the regression model. As male gender has been reported as a protective factor in several previous studies, gender was included as independent variable into the regression analysis, and gender-disaggregated regression analyses were additionally performed exploratory. For inclusion in the regression model, all categorical variables were dichotomized, and dummy coded with a reference category (70). For both regression models, Pagan–Breusch test indicated heteroskedasticity. Therefore, the Huber-White estimator of standard errors was applied for these regression analyses using the package "sandwich" (71, 72) in R. No further assumptions were violated. There were no missing data in the data set used for this analysis. All statistical analyses were conducted using R version 4.2.0 (73).

3. Results

3.1. Acculturation orientations and mental health

Participants were grouped into one of the four acculturation orientations proposed by Berry (31) using both acculturation dimensions measured by the VIA. **Figure 1** gives a detailed overview of the bivariate distribution and classification of the participants. On average, participants showed higher orientation toward their heritage culture ($Mdn = 6.3$) than toward the German culture ($Mdn = 4.5$). However, almost all participants reported bicultural orientation toward both cultural groups with high or very high orientation toward their heritage cultural group and medium to high orientation toward the German cultural group (see **Figure 1**).

In a second step, mean scores for depressive symptoms and posttraumatic stress symptoms were compared across the four acculturation orientations. Kruskal–Wallis rank sum tests revealed no significant differences for depressive symptoms or posttraumatic stress symptoms between the four groups. For details see **Table 2** and **Figure 2**. As the model with four acculturation orientations proposed by Berry (31) has received several critiques, we additionally performed univariate analyses for cultural orientation toward the heritage culture (low vs. high) and to the German culture (low vs. high). Kruskal–Wallis rank sum tests revealed no significant differences for depressive symptoms or posttraumatic stress symptoms neither for cultural orientation toward the heritage culture nor for cultural orientation toward the German culture. The results of this additional analysis can be found in **Supplementary material B**.

3.2. Additional indicators of acculturation as covariates of mental health in refugee youth

Several additional indicators of acculturation were assessed as potential covariates of mental health in refugee youth. As expected, correlations between depressive and posttraumatic stress symptoms were high ($r = 0.63$). Significant correlations were found for several indicators of acculturation with both depressive and posttraumatic stress symptoms. Depressive symptoms correlated negatively with German language skills and the number of close friends in Germany. Posttraumatic stress symptoms correlated positively with age, and the amount of traumatic exposure and negatively with the number of close friends in Germany. All correlation coefficients with mental health outcomes are reported

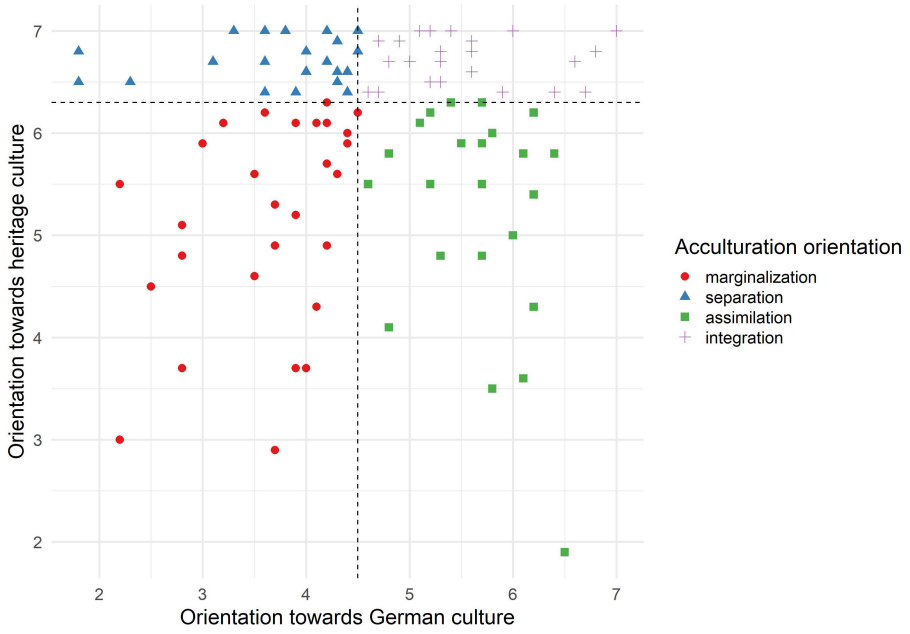

FIGURE 1
Scatterplot: displayed is the classification of the participants into the four acculturation orientations according to the definition by Berry (31): Separation (n = 25), integration (n = 24), marginalization (n = 29), and assimilation (n = 25).

TABLE 2 Mean scores of depressive symptoms and posttraumatic stress symptoms grouped by acculturation orientations.

Depressive symptoms				Kruskal–Wallis rank sum test		
	n	*M*	*SD*	χ^2	*df*	*p*
Marginalization	29	1.95	0.57	0.519	3	0.915
Separation	25	1.96	0.54			
Assimilation	23	1.87	0.48			
Integration	24	1.99	0.61			
Posttraumatic stress symptoms				**Kruskal–Wallis rank sum test**		
	n	*M*	*SD*	χ^2	*df*	*p*
Marginalization	29	18.8	13.1	0.263	3	0.967
Separation	25	16.7	14.4			
Assimilation	23	17.5	12.5			
Integration	24	20.3	16.8			

Posttraumatic stress symptoms were measured with the PTSD symptoms Checklist for DSM-5 (PCL-5); depressive symptoms were measured with the Hopkins-Symptom Checklist-25 (HSCL-25).

in detail in Table 3. A comprehensive correlation matrix of all variables can be found in Supplementary material A.

Age, potentially traumatic events, language skills, and friends in Germany showed significant associations with either depressive or posttraumatic stress symptoms and were therefore included as predictors in the regression analysis. Additionally, gender and length of stay in Germany were included as they are established risk factors for mental health in refugee youth (74). Results of the regression analyses are reported in Tables 4, 5. For depressive symptoms, better language skills and a higher number of friends in Germany were significantly related with lower symptom scores. For posttraumatic stress symptoms, a higher number of friends in Germany was significantly related with lower symptom scores. Additionally, participants who had experienced a higher number of traumatic events showed higher posttraumatic stress symptom scores.

Exploratory regression analysis performed separately for male and female participants revealed that associations were more pronounced in female participants than in males. For female participants, the results of the aggregated analysis were confirmed while analyses for male participants showed no associations between mental health symptoms and friendship networks or language skills, respectively. The amount of explained variance was higher in the sub-group analysis for female participants than for male participants for both depressive symptoms (R^2_{adj} = 0.25 vs. R^2_{adj} = 0.08) and posttraumatic-stress symptoms

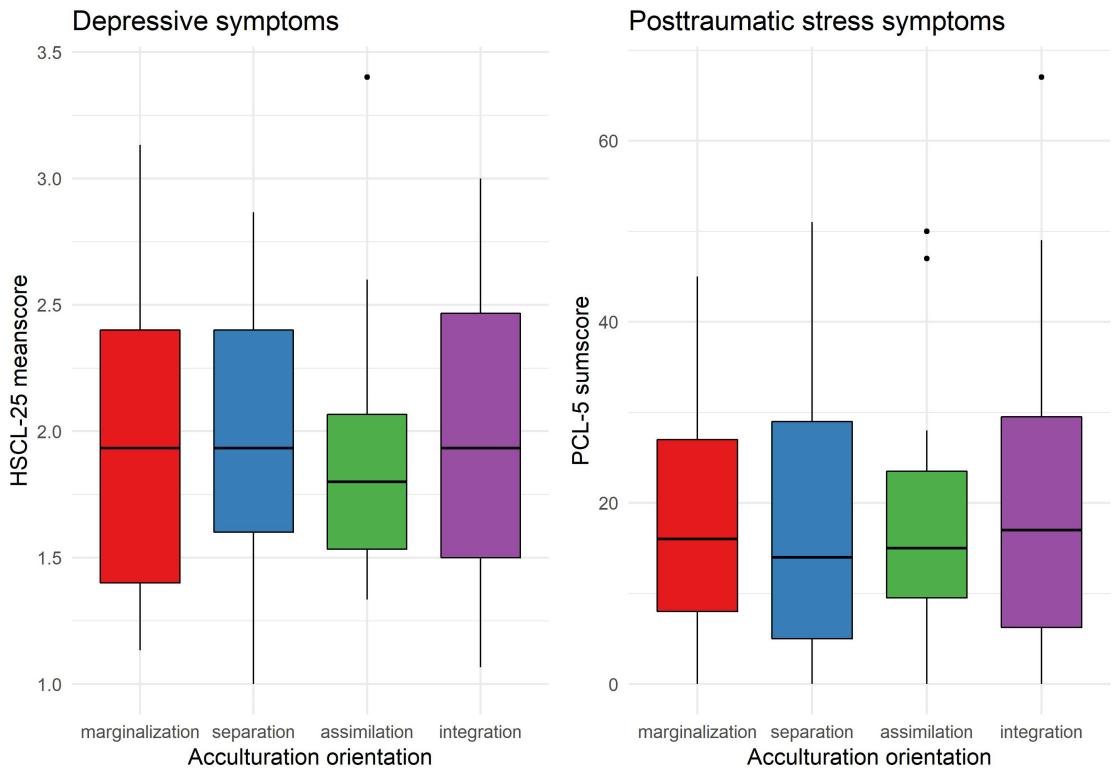

FIGURE 2
Mean scores of depressive symptoms and posttraumatic stress symptoms grouped by acculturation orientations.

TABLE 3 Correlations of indicators of acculturation with depressive symptoms and posttraumatic stress symptoms.

	Depressive symptoms	Posttraumatic stress symptoms
Age	0.08	0.25*
Female gender (vs. male gender)[a]	0.04	−0.01
Length of stay in Germany (in years)	0.00	0.08
Home country Syria (vs. all other countries)[b]	0.13	0.09
Secure asylum status (vs. insecure asylum status)[c]	−0.11	0.01
Welcome class (vs. regular class)[d]	−0.04	−0.05
German language skills	−0.22*	−0.14
Potentially traumatic events, aggregated	0.09	0.38***
Acculturation Germany (unidimensional)	0.00	0.00
Acculturation heritage (unidimensional)	−0.01	0.00
Positive contact Germans	−0.09	0.08
Negative contact Germans	0.02	0.03
Positive contact with people of same heritage	−0.07	0.08
Negative contact with people of same heritage	0.02	0.04
Friends in Germany	−0.26**	−0.26**
All friends	−0.09	−0.10
Friends born in Germany	−0.10	−0.03

$N = 101$. Posttraumatic stress symptoms were measured with the PTSD symptoms Checklist for DSM-5 (PCL-5); depressive symptoms were measured with the Hopkins-Symptom Checklist-25 (HSCL-25). Acculturative orientations were measured with the Vancouver acculturation index (VIA).
[a]0: Male; 1: Female.
[b]0: Country of origin: All other countries; 1: Country of origin: Syria.
[c]0: Insecure asylum status; 1: Secure asylum status.
[d]0: Attending regular class; 1: Attending welcome class (preparatory class with only refugee/immigrant youth focusing on language acquisition).
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

TABLE 4 Regression analysis for depressive symptoms.

Depressive symptoms				
	B	*SE*	β	*p*
Intercept	2.37	0.76		0.002**
Female gender[a]	0.00	0.11	0.00	0.980
Age	0.01	0.04	0.02	0.866
Length of stay in Germany (in years)	0.02	0.04	0.05	0.652
Potentially traumatic events	0.01	0.01	0.06	0.544
Language skills	−0.18	0.07	−0.21	0.016*
Friends in Germany	−0.02	0.01	−0.25	0.006**

R^2 = 0.12; R^2_{adj} = 0.07; depressive symptoms were measured with the Hopkins-Symptom Checklist-25 (HSCL-25).
[a]0: Male; 1: Female.
*$p < 0.05$, **$p < 0.01$.

TABLE 5 Regression analysis for posttraumatic stress symptoms.

Posttraumatic stress symptoms				
	B	*SE*	β	*p*
Intercept	4.43	18.40		0.810
Female gender[a]	−0.23	2.85	0.00	0.936
Age	1.48	1.00	0.14	0.140
Length of stay in Germany (in years)	0.51	0.98	0.05	0.605
Potentially traumatic events	0.84	0.28	0.33	0.003**
Language skills	−2.57	1.85	−0.12	0.167
Friends in Germany	−0.54	0.17	−0.23	0.002**

R^2 = 0.25; R^2_{adj} = 0.20; posttraumatic stress symptoms were measured with the PTSD symptoms Checklist for DSM-5 (PCL-5).
[a]0: Male; 1: Female.
**$p < 0.01$.

(R^2_{adj} = 0.33 vs. R^2_{adj} = 0.25). The results are reported in detail in **Supplementary materials C, D**.

4. Discussion

This study investigated the relationship between acculturation and mental health in Arabic-speaking refugee youth living with their parents in Berlin, Germany. In a first step, we analyzed associations between the four acculturation orientations proposed by Berry (31) and depressive and posttraumatic stress symptoms. In a second step, we explored whether several other indicators of acculturation were related with depressive and posttraumatic stress symptoms.

We found that acculturation orientation was not associated with depressive or posttraumatic stress symptoms in our sample. This contrasts with previous findings that have shown better mental health outcomes for immigrants and refugees with bicultural orientation who maintain some contact with their home culture and, at the same time, attempt to connect with the culture of the resettlement country (32, 74). Also, bivariate analyses revealed no associations between acculturation scales and mental health outcomes, neither for the unidimensional scales of cultural orientation toward heritage culture and German culture nor for scales measuring positive and negative contact with both cultures.

A possible explanation for these results may be that our sample differed from other studies in the field regarding several characteristics. First, our study focused on Arabic-speaking refugee youth who lived with their families in Berlin, Germany, and attended school on a regular basis at the time of the study. To date, most research on acculturation and mental health has focused on immigrants or unaccompanied refugee minors (32, 33, 44, 69, 75). Pathways of stressors and resilience may differ for these groups as every group faces specific challenges that are unique to their living situation (9, 39). It is possible that integration is a more favorable strategy for adults and unaccompanied refugee youth as they are under more pressure to function in the new society on their own. In contrast, for accompanied refugee youth, orientation toward the new culture may also lead to increased conflicts with their parents due to potential differences in cultural values (19, 20, 23). Associations between acculturation orientation and mental health may be highly dependent on contextual factors and family dynamics (24) and may vary across life domains. While orientation toward the majority culture in work or school contexts has been related to better mental health, in private life orientation toward heritage culture has been related to better mental health (36). Consequently, there may be no "best way" to cope with the challenges of acculturation for this group. This might explain, why in our sample, none of the acculturation styles was associated with mental health outcomes.

Moreover, other characteristics of our sample and contextual factors may have contributed to the results. While the sample is comparable to other studies concerning the prevalence of mental health problems (2, 9), it may be unique due to several reasons: The study was conducted in Germany's capital Berlin which is multicultural and metropolitan, and where particularly high numbers of refugees from Syria have arrived since 2015 due to the ongoing war. Most participants in our study came from Syria and, at the time the study took place in 2018/2019, they had already stayed in Germany on average for 3 years. In addition, more than half of the participants were female. Although this may not be representative for refugee youth populations, it nevertheless reflects typical sample characteristics that have been found in Syrian refugees arriving in Europe at the time (52). However, other studies investigating acculturation orientations and mental health in Middle-Eastern refugee youth mainly included male participants (35) or exclusively focused on male refugee youth (34), which may also explain why our results diverged from previously published studies.

Furthermore, several methodological aspects must be considered. First, our sample showed high levels of orientation toward both cultures but especially high orientation toward the heritage culture. As a result, variability on these scales was low and may have contributed to the non-significant results. For analyses, we assigned all participants to one of the four acculturation orientations using a median split, thus the grouping into one of the four acculturation orientations was dependent on the distribution of ratings in the sample and relative to the studied group. Few participants in our study showed low orientation to either cultural group in terms of absolute numbers, and almost all participants, to some extent, showed bicultural orientation. Some researchers

have therefore criticized the median-split approach as arbitrary and have suggested using person-centered approaches such as latent profile analysis to ensure the validity of the categorization (76, 77). Unfortunately, due to the limited sample size this was not possible in the current study. However, considering the critique that the categorical model proposed by Berry (31) has received (78), we have additionally performed analyses with the unidimensional scales of cultural orientation. These analyses, too, did not reveal significant associations between acculturation orientation and mental health. Therefore, we consider our results as relatively robust concerning the chosen method of analysis. Finally, it must be noted that the VIA assesses cultural orientation. Thereby, it is a measure of attitudes and does not directly refer to actual experiences, behavior, or skills which may show stronger associations with mental health symptoms.

In addition to acculturation orientations, we also investigated whether other indicators of acculturation may act as protective factors for mental health in young refugees. We found that the number of friends in Germany was negatively associated with both depressive and posttraumatic stress symptoms. Social support is a well-established protective factor in trauma survivors (41, 42) and previous research has stressed the importance of friendships for refugee youth (43, 46). Some studies have suggested that ethnicity of peers and social networks may influence the effects of social support on mental health in refugee children and youth (40, 79). However, in our study, the number of close friends originating from Germany, in contrast to the general number of friends in Germany, was not significantly associated with mental health symptoms. A recent study with refugee youth in Belgium found that peers of similar heritage were more important in the early stages of flight, while local friends in the resettlement country became increasingly important in later stages of the resettlement process (43). Overall, this suggests that the proximity of friends in everyday life—but not ethnicity—mattered most for youth in our sample, most of whom had been in Germany for a while. Access to joining local clubs or sport teams may provide refugee youth with vital opportunities for building local peer networks (38, 80).

Furthermore, we found that better German language skills were significantly associated with lower symptoms of depression. This is in line with studies showing associations between language skills and symptoms of depression in refugee minors (9, 40). Language has been found to be a major contributor for successfully dealing with resettlement, and language skills are typically fostered to allow refugee youth to attend school. Our findings suggest that language skills may not only be associated with educational success but also significantly linked to mental health. Fostering language acquisition in refugee youth may thus not only support their academic development, but also have a positive effect on their mental health. In Berlin, most students arriving as refugees attend so-called welcome-classes that focus primarily on language acquisition and may provide refugee children with a "safe space" (81). However, welcome-classes have also been criticized for separating refugee minors from students attending regular classes (82, 83), which may result in lower participation in school based extracurricular activities among young refugees (82). This, in turn, may lead to less opportunities for building local peer-networks and making friends—the second factor that was associated with lower mental health symptoms in our study. Policies should make sure that these two potentially protective factors are not mutually exclusive in practice and that refugee youth can acquire language skills and make friends at the same time.

Finally, to identify potentially gender-dependent associations, exploratory regression analysis was performed separately for male and female participants. Results indicated that associations were more pronounced in female participants than in male participants and that the model fit was better in the female sub-sample than in the male sub-sample. While these results must be interpreted with caution due to the small sample size, they support studies that have highlighted the importance of gender aspects in acculturation research and should be considered in future studies (84, 85).

4.1. Strengths and limitations

Few studies to date have investigated the association between acculturation and mental health in refugee youth living with their families. By focusing on acculturation orientations and other indicators of acculturation, we provide a nuanced picture of potential protective factors for refugee mental health in a high-income country (Germany). However, our study has several limitations. First, relatively few schools in Berlin agreed to participate in the study and our sample may not be representative of the refugee youth population at the time in Berlin. Second, all analyses were conducted based on cross-sectional data and, therefore, no causal inferences are possible. Longitudinal studies are needed for a better understanding of acculturation processes in the context of developmental pathways. Third, the number of friends and language skills were self-assessed by the students. While this approach most directly reflects how students see themselves and was therefore considered to be an adequate representation of social integration, it also bears the risk of over- or underestimation. Fourth, several factors limit the generalizability of our results. Socioeconomic status and post-migration experiences were not assessed in the study and could not be controlled for in the analyses. Moreover, our sample included a set of heterogenous countries with most participants originating from Syria, therefore especially the result concerning country of origin should be interpreted with caution. Finally, due to the highly skewed distributions on the scales measuring cultural orientation and the chosen method for analyzing associations between cultural orientation and mental health, conclusions outside the studied group must be drawn with caution.

4.2. Conclusion and implications for practice

Adjusting to a new culture after forced resettlement can be a stressful process for Arabic-speaking refugee youth in high income resettlement countries and negatively impact their mental health. While we found no significant relation between refugee youths' acculturation orientations and depressive and posttraumatic stress symptoms, two other acculturative factors were significantly associated with mental health: better self-assessed German language skills and a higher number of friends in Germany. Previous research proposed several policy implications for fostering mental wellbeing of refugee youth in resettlement countries. These include rapid resolution of asylum

claims, protection from post-migration violence, prioritizing family reunions, and providing physical and psychological healthcare (74). These measures are important and should be enforced with the most possible urgency. However, implementation depends to a large extent on the political will and changes may require resources and time. While there is no adequate substitute for these much-needed policy changes, the present study suggests that to prevent mental health problems in refugee youth, additional and relatively easy steps such as providing access to high-quality language classes and social activities with peers may have a positive impact on mental health.

Data availability statement

The datasets presented in this article are not readily available because they contain information that could compromise the privacy of research participants. Requests to access the datasets should be directed to caroline.meyer@fu-berlin.de.

Ethics statement

The studies involving human participants were reviewed and approved by the Research Ethics Committee of the Department of Education and Psychology at Freie Universität Berlin the Berlin (203/2018). Written informed consent from the participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

LA, CK, PK, NS, FS, JSW, and RK conceptualized the study. LA coordinated the data collection. PK supervised the data collection and conceptualized of the study. CM performed the data analyses and drafted the manuscript. LA, NS, CK, PK, FS, JSW, and RK provided critical revisions to the manuscript. All authors read and approved the final manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2023.1130199/full#supplementary-material

References

1. UNHCR,. *Global Trends. Forced Displacement in 2021*. (2022). Available online at: https://www.unhcr.org/globaltrends (accessed February 10, 2023).

2. Blackmore R, Gray KM, Boyle JA, Fazel M, Ranasinha S, Fitzgerald G, et al. Systematic review and meta-analysis: the prevalence of mental illness in child and adolescent refugees and asylum seekers. *J Am Acad Child Adolescent Psychiatry*. (2020) 59:705–14. doi: 10.1016/j.jaac.2019.11.011

3. Kien C, Sommer I, Faustmann A, Gibson L, Schneider M, Krczal E, et al. Prevalence of mental disorders in young refugees and asylum seekers in European Countries: a systematic review. *Eur Child Adolescent Psychiatry*. (2019) 28:1295–310. doi: 10.1007/s00787-018-1215-z

4. Alhaddad, L, Goodwin R, Kanngiesser P. Challenges and coping: perspectives of Syrian and Iraqi refugee youth in germany. *J Adolescent Res*. (2021):07435584211056069. doi: 10.1177/07435584211056069

5. Jugert P, Titzmann PF. Developmental tasks and immigrant adolescent's adaptation. In: Güngör D, Strohmeier D editors. *Contextualizing Immigrant and Refugee Resilience: Cultural and Acculturation Perspectives*. Cham: Springer (2020). p. 33–50.

6. Ward C, Szabó A. Affect, behavior, cognition, and development: adding to the alphabet of acculturation. In: Matsumoto D, Hwang HC editors. *The Handbook of Culture and Psychology*. 2nd ed. Oxford: Oxford University Press (2019). p. 640–91.

7. Bean T, Derluyn I, Eurelings-Bontekoe E, Broekaert E, Spinhoven P. Comparing psychological distress, traumatic stress reactions, and experiences of unaccompanied refugee minors with experiences of adolescents accompanied by parents. *J Nerv Ment Dis*. (2007) 195:288–97. doi: 10.1097/01.nmd.0000243751.49499.93

8. Derluyn I, Mels C, Broekaert E. Mental health problems in separated refugee adolescents. *J Adolescent Health*. (2009) 44:291–7. doi: 10.1016/j.jadohealth.2008.07.016

9. Müller LRF, Büter KP, Rosner R, Unterhitzenberger J. Mental health and associated stress factors in accompanied and unaccompanied refugee minors resettled

in Germany: a cross-sectional study. *Child Adolescent Psychiatry Ment Health.* (2019) 13:1–13. doi: 10.1186/s13034-019-0268-1

10. Hodes M, Hussain N. The role of family functioning in refugee child and adult mental health. In: De Haene L, Rousseau C editors. *Working with Refugee Families*. Cambridge: Cambridge University Press (2020).

11. Hodes M, Jagdev D, Chandra N, Cunniff A. Risk and resilience for psychological distress amongst unaccompanied asylum seeking adolescents. *J Child Psychol Psychiatry.* (2008) 49:723–32. doi: 10.1111/j.1469-7610.2008.01912.x

12. Kevers R, Spaas C, Colpin H, Van Den Noortgate W, de Smet S, Derluyn I, et al. Mental health problems in refugee and immigrant primary school children in Flanders, Belgium. *Clin Child Psychol Psychiatry.* (2022) 27:13591045221105199. doi: 10.1177/13591045221105199

13. Shapiro D, Montgomery E. Forced separation, ruptured kinship and transnational family. In: De Haene L, Rousseau C editors. *Working with Refugee Families: Trauma and Exile in Family Relationships*. Cambridge: Cambridge University Press (2020). p. 87–102.

14. Spaas C, Verelst A, Devlieger I, Aalto S, Andersen AJ, Durbeej N, et al. Mental health of refugee and non-refugee migrant young people in European Secondary Education: the role of family separation, daily material stress and perceived discrimination in resettlement. *J Youth Adolescence.* (2022) 51:848–70. doi: 10.1007/s10964-021-01515-y

15. Blackmore R, Boyle JA, Fazel M, Ranasinha S, Gray KM, Fitzgerald G, et al. The prevalence of mental illness in refugees and asylum seekers: a systematic review and meta-analysis. *PLoS Med.* (2020) 17:e1003337. doi: 10.1371/journal.pmed.1003337

16. Karamehic-Muratovic A, Sichling F, Doherty C. Perceptions of parents' mental health and perceived stigma by refugee youth in the US context. *Commun Ment Health J.* (2022) 58:1–11. doi: 10.1007/s10597-022-00958-2

17. Vaage AB, Thomsen PH, Rousseau C, Wentzel-Larsen T, Ta TV, Hauff E. Paternal predictors of the mental health of children of Vietnamese refugees. *Child Adolescent Psychiatry Ment Health.* (2011) 5:1–11. doi: 10.1186/1753-2000-5-2

18. Oppedal B. Development and acculturation. In: Sam DL editor. *The Cambridge Handbook of Acculturation Psychology*. Cambridge: Cambridge University Press (2006). p. 97–112.

19. Cissé, A, De Haene L, Keatley E, Rasmussen A. Pre-and post-migration trauma and adversity. *Working with Refugee Families: Trauma and Exile in Family Relationships*. De Haene L, Rousseau C, editors. Cambridge: Cambridge University Press (2020). p. 50 doi: 10.1007/s10597-022-01066-x

20. Hayes SW, Endale E. "Sometimes my mind, it has to analyze two things": identity development and adaptation for refugee and newcomer adolescents. *Peace Conflict J Peace Psychol.* (2018) 24:283. doi: 10.1037/pac0000315

21. Menjívar C. Living in two worlds? Guatemalan-origin children in the United States and emerging transnationalism. *J Ethnic Migration Stud.* (2002) 28:531–52. doi: 10.1080/13691830220146590

22. Birman D, Trickett EJ. Cultural transitions in first-generation immigrants: acculturation of Soviet Jewish refugee adolescents and parents. *J Cross Cult Psychol.* (2001) 32:456–77. doi: 10.1177/0022022101032004006

23. Roubeni S, De Haene L, Keatley E, Shah N, Rasmussen A. "If we can't do it, our children will do it one day" a qualitative study of West African immigrant parents' losses and educational aspirations for their children. *Am Educ Res J.* (2015) 52:275–305. doi: 10.3102/0002831215574576

24. Ward C, Geeraert N. Advancing acculturation theory and research: the acculturation process in its ecological context. *Curr Opin Psychol.* (2016) 8:98–104. doi: 10.1016/j.copsyc.2015.09.021

25. Kia-Keating M, Ellis BH. Belonging and connection to school in resettlement: young refugees, school belonging, and psychosocial adjustment. *Clin Child Psychol Psychiatry.* (2007) 12:29–43. doi: 10.1177/1359104507071052

26. Betancourt TS, Newnham EA, Layne CM, Kim S, Steinberg AM, Ellis H, et al. Trauma history and psychopathology in war-affected refugee children referred for trauma-related mental health services in the United States. *J Traumatic Stress.* (2012) 25:682–90. doi: 10.1002/jts.21749

27. Ellis BH, MacDonald HZ, Lincoln AK, Cabral HJ. Mental health of Somali adolescent refugees: the role of trauma, stress, and perceived discrimination. *J Consult Clin Psychol.* (2008) 76:184. doi: 10.1037/0022-006X.76.2.184

28. Keles S, Friborg O, Idsøe T, Sirin S, Oppedal B. Depression among unaccompanied minor refugees: the relative contribution of general and acculturation-specific daily hassles. *Ethnicity Health.* (2016) 21:300–17. doi: 10.1080/13557858.2015.1065310

29. Sirin SR, Ryce P, Gupta T, Rogers-Sirin L. The role of acculturative stress on mental health symptoms for immigrant adolescents: a longitudinal investigation. *Dev Psychol.* (2013) 49:736. doi: 10.1037/a0028398

30. Sam DL. Acculturation: conceptual background and core components. In: Sam DL editor. *The Cambridge Handbook of Acculturation Psychology*. Cambridge: Cambridge University Press (2006). p. 11–26.

31. Berry JW. Immigration, acculturation, and adaptation. *Appl Psychol.* (1997) 46:5–34. doi: 10.1080/026999497378467

32. Nguyen A-MD, Benet-Martínez V. Biculturalism and adjustment: a meta-analysis. *J Cross Cult Psychol.* (2013) 44:122–59. doi: 10.1177/0022022111435097

33. Berry JW, Phinney JS, Sam DL, Vedder P. Immigrant youth: acculturation, identity, and adaptation. *Appl Psychol.* (2006) 55:303–32. doi: 10.1111/j.1464-0597.2006.00256.x

34. El-Awad U, Fathi A, Vasileva M, Petermann F, Reinelt T. Acculturation orientations and mental health when facing post-migration stress: differences between unaccompanied and accompanied male Middle Eastern refugee adolescents, first-and second-generation immigrant and native peers in Germany. *Int J Intercult Relat.* (2021) 82:232–46. doi: 10.1016/j.ijintrel.2021.04.002

35. El Khoury SJ. Factors that impact the sociocultural adjustment and well-being of Syrian refugees in Stuttgart–Germany. *Br J Guid Counsell.* (2019) 47:65–80. doi: 10.1080/03069885.2018.1520196

36. Birman D, Simon CD, Chan WY, Tran N. A life domains perspective on acculturation and psychological adjustment: a study of refugees from the former Soviet Union. *Am J Commun Psychol.* (2014) 53:60–72. doi: 10.1007/s10464-013-9614-2

37. Bourhis RY, Moise LC, Perreault S, Senecal S. Towards an interactive acculturation model: a social psychological approach. *Int J Psychol.* (1997) 32:369–86. doi: 10.1080/002075997400629

38. Earnest J, Mansi R, Bayati S, Earnest JA, Thompson SC. Resettlement experiences and resilience in refugee youth in Perth, Western Australia. *BMC Res Notes.* (2015) 8:236. doi: 10.1186/s13104-015-1208-7

39. Buchanan ZE, Abu-Rayya HM, Kashima E, Paxton SJ, Sam DL. Perceived discrimination, language proficiencies, and adaptation: comparisons between refugee and non-refugee immigrant youth in Australia. *Int J Intercult Relat.* (2018) 63:105–12. doi: 10.1016/j.ijintrel.2017.10.006

40. Montgomery E. Long-term effects of organized violence on young Middle Eastern refugees' mental health. *Soc Sci Med.* (2008) 67:1596–603. doi: 10.1016/j.socscimed.2008.07.020

41. Brewin CR, Andrews B, Valentine JD. Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *J Consult Clin Psychol.* (2000) 68:748. doi: 10.1037/0022-006x.68.5.748

42. Ozer EJ, Best SR, Lipsey TL, Weiss DS. Predictors of posttraumatic stress disorder and symptoms in adults: a meta-analysis. *Psychol Bull.* (2003) 129:52. doi: 10.1037/0033-2909.129.1.52

43. Behrendt M, Lietaert I, Derluyn I. Continuity and social support: a longitudinal study of unaccompanied refugee minors' care networks. *J Immigrant Refugee Stud.* (2022) 20:398–412. doi: 10.1080/15562948.2021.1930322

44. Oppedal B, Idsoe T. The role of social support in the acculturation and mental health of unaccompanied minor asylum seekers. *Scandinavian J Psychol.* (2015) 56:203–11. doi: 10.1111/sjop.12194

45. Sierau S, Schneider E, Nesterko Y, Glaesmer H. Alone, but protected? Effects of social support on mental health of unaccompanied refugee minors. *Eur Child Adolescent Psychiatry.* (2019) 28:769–80. doi: 10.1007/s00787-018-1246-5

46. Almqvist K, Broberg AG. Mental health and social adjustment in young refugee children 3½ years after their arrival in Sweden. *J Am Acad Child Adolescent Psychiatry.* (1999) 38:723–30. doi: 10.1097/00004583-199906000-00020

47. Berthold SM. War traumas and community violence: psychological, behavioral, and academic outcomes among Khmer refugee adolescents. *J Multicult Soc Work.* (2000) 8:15–46. doi: 10.1300/J285v08n01_02

48. Verelst A, Spaas C, Pfeiffer E, Devlieger I, Kankaapää R, Peltonen K, et al. Social determinants of the mental health of young migrants. *Eur J Health Psychol.* (2022) 29:61. doi: 10.1027/2512-8442/a000097

49. Bean T, Eurelings-Bontekoe E, Spinhoven P. Course and predictors of mental health of unaccompanied refugee minors in the Netherlands: one year follow-up. *Soc Sci Med.* (2007) 64:1204–15. doi: 10.1016/j.socscimed.2006.11.010

50. Jakobsen M, DeMott MAM, Wentzel-Larsen T, Heir T. The impact of the asylum process on mental health: a longitudinal study of unaccompanied refugee minors in Norway. *BMJ Open.* (2017) 7:e015157. doi: 10.1136/bmjopen-2016-015157

51. Geltman PL, Grant-Knight W, Mehta SD, Lloyd-Travaglini C, Lustig S, Landgraf JM, et al. The "lost boys of Sudan": functional and behavioral health of unaccompanied refugee minors resettled in the United States. *Archives Pediatrics Adolescent Med.* (2005) 159:585–91. doi: 10.1001/archpedi.159.6.585

52. Hebebrand J, Anagnostopoulos D, Eliez S, Linse H, Pejovic-Milovancevic M, Klasen H. A first assessment of the needs of young refugees arriving in Europe: what mental health professionals need to know. *Eur Child Adolesc Psychiatry.* (2016) 25:1–6. doi: 10.1007/s00787-015-0807-0

53. Bundesamt für Migration und Flüchtlinge [BAMF]. *Aktuelle Zahlen zu Asyl: Ausgabe Juni 2018*. (2018). Available online at: https://www.bamf.de/SharedDocs/Anlagen/DE/Statistik/AsylinZahlen/aktuelle-zahlen-zu-asyl-juni-2018.pdf?__blob=publicationFile&v=4 (accessed February 10, 2023).

54. LimeSurvey GmbH. *LimeSurvey: An Open Source Survey Tool [Computer Software]*. (2017). Available online at: http://www.limesurvey.org (accessed February 10, 2023).

55. Guillemin F, Bombardier C, Beaton D. Cross-cultural adaptation of health-related quality of life measures: literature review and proposed guidelines. *J Clin Epidemiol.* (1993) 46:1417–32. doi: 10.1016/0895-4356(93)90142-n

56. Sixtus F, Wesche JS, Kerschreiter R. Identity multiplicity, national group contact, and acculturation: the role of identity-related cognitions. *J Soc Issues.* (2019) 75:486–514. doi: 10.1111/josi.12325

57. Mollica RF, Caspi-Yavin Y, Bollini P, Truong T, Tor S, Lavelle J. The Harvard Trauma Questionnaire: validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in Indochinese refugees. *J Nerv Ment Dis.* (1992) 180:111–6.

58. Foa EB, Cashman L, Jaycox L, Perry K. The validation of a self-report measure of posttraumatic stress disorder: the Posttraumatic Diagnostic Scale. *Psychol Assess.* (1997) 9:445. doi: 10.1037/1040-3590.9.4.445

59. Foa EB, McLean CP, Zang Y, Zhong J, Powers MB, Kauffman BY, et al. Psychometric properties of the Posttraumatic Diagnostic Scale for DSM–5 (PDS–5). *Psychol Assess.* (2016) 28:1166. doi: 10.1037/pas0000258

60. Arsenijević J, Schillberg E, Ponthieu A, Malvisi L, Ahmed WAE, Argenziano S, et al. A crisis of protection and safe passage: violence experienced by migrants/refugees travelling along the Western Balkan corridor to Northern Europe. *Conflict Health.* (2017) 11:1–9. doi: 10.1186/s13031-017-0107-z

61. Weathers FW, Litz BT, Keane TM, Palmieri PA, Marx BP, Schnurr PP. *The PTSD checklist for DSM-5 (PCL-5). Scale available from the National Center for PTSD*. (2013). Available online at: www.ptsd.va.gov (accessed February 10, 2023).

62. Derogatis LR, Lipman RS, Rickels K, Uhlenhuth EH, Covi L. The Hopkins symptom checklist (HSCL): a self-report symptom inventory. *Behav Sci.* (1974) 19:1–15. doi: 10.1002/bs.3830190102

63. Ryder AG, Alden LE, Paulhus DL. Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *J Person Soc Psychol.* (2000) 79:49. doi: 10.1037/0022-3514.79.1.49

64. Goforth AN, Pham AV, Oka ER. Parent–child conflict, acculturation gap, acculturative stress, and behavior problems in Arab American adolescents. *J Cross Cult Psychol.* (2015) 46:821–36.

65. Jia F, Gottardo A, Chen X, Koh P, Pasquarella A. English proficiency and acculturation among Chinese immigrant youth in Canada: a reciprocal relationship. *J Multilingual Multicult Dev.* (2016) 37:774–82. doi: 10.1080/01434632.2015.1133630

66. Zhang M, Kim SY, Hou Y, Shen Y. Parent–adolescent acculturation profiles and adolescent language brokering experiences in Mexican immigrant families. *J Youth Adolescence.* (2020) 49:335–51. doi: 10.1007/s10964-019-01064-5

67. Bozdağ F, Bilge F. Adaptation of the Vancouver index of acculturation to Turkish and Arabic. *Int J Intercult Relat.* (2021) 80:78–88. doi: 10.1016/j.ijintrel.2020.11.002

68. Dhont K, Van Hiel A. We must not be enemies: interracial contact and the reduction of prejudice among authoritarians. *Person Individ Differ.* (2009) 46:172–7. doi: 10.1016/j.paid.2008.09.022

69. Behrens K, del Pozo MA, Großhennig A, Sieberer M, Graef-Calliess IT. How much orientation towards the host culture is healthy? Acculturation style as risk enhancement for depressive symptoms in immigrants. *Int J Soc Psychiatry.* (2015) 61:498–505. doi: 10.1177/00207640145603

70. Eid M, Gollwitzer M, Schmitt M. *Statistik und Forschungsmethoden*. Weinheim: Beltz Verlag (2017).

71. Zeileis A. Object-oriented computation of sandwich estimators. *J Stat Softw.* (2006) 16:1–16. doi: 10.18637/jss.v016.i09

72. Zeileis A, Köll S, Graham N. Various versatile variances: an object-oriented implementation of clustered covariances in R. *J Stat Softw.* (2020) 95:1–36. doi: 10.18637/jss.v095.i01

73. R Foundation for Statistical Computing. *R: A Language and Environment for Statistical Computing [Computer Software]*. (2022). Available online at: https://www.R-project.org/ (accessed February 10, 2023).

74. Fazel M, Reed RV, Panter-Brick C, Stein A. Mental health of displaced and refugee children resettled in high-income countries: risk and protective factors. *Lancet.* (2012) 379:266–82. doi: 10.1016/S0140-6736(11)60051-2

75. Green M, King E, Fischer F. Acculturation, social support and mental health outcomes among Syrian refugees in Germany. *J Refugee Stud.* (2021) 34:2421–33. doi: 10.1093/jrs/fez095

76. Fox RS, Merz EL, Solórzano MT, Roesch SC. Further examining Berry's model: the applicability of latent profile analysis to acculturation. *Meas Eval Counsel Dev.* (2013) 46:270–88. doi: 10.1177/0748175613497036

77. Tobin J, Miller KA, Baezconde-Garbanati L, Unger JB, Hamilton AS, Milam JE. Acculturation, mental health, and quality of life among hispanic childhood cancer survivors: a latent class analysis. *Ethnicity Dis.* (2018) 28:55. doi: 10.18865/ed.28.1.55

78. Rudmin FW. Critical history of the acculturation psychology of assimilation, separation, integration, and marginalization. *Rev Gen Psychol.* (2003) 7:3–37. doi: 10.1037/1089-2680.7.1.3

79. Liebkind K. Acculturation and stress: Vietnamese refugees in Finland. *J Cross Cult Psychol.* (1996) 27:161–80.

80. Hopkins P, Hill M. The needs and strengths of unaccompanied asylum-seeking children and young people in Scotland. *Child Fam Soc Work.* (2010) 15:399–408. doi: 10.1111/j.1365-2206.2010.00687.x

81. Buth J, Hacker S. *Integration oder Separation? Beschulung von neuzugewanderten und geflüchteten Kindern an Berliner Grundschulen nach dem Modell "Willkommensklasse" Evangelische Hochschule Berlin]. Berlin*. (2017). Available online at: http://www.dohrmann-verlag.de/sites/default/files/2019-01/bachelor-arbeit_willkommensklassen_heft_12_2017.pdf (accessed February 10, 2023).

82. Gambaro L, Kemptner D, Pagel L, Schmitz L, Spieß CK. Integration of refugee children and adolescents in and out of school: evidence of success but still room for improvement. *DIW Weekly Rep.* (2020) 10:345–54. doi: 10.18723/diw_dwr:2020-34-2

83. Morris-Lange S, Schneider T. Dead end schools? Refugee teenagers and school segregation in Germany. In: Watzlawik M, Burkholder A editors. *Educating Adolescents Around the Globe*. Cham: Springer (2020). p. 149–71.

84. Dion KK, Dion KL. Gender and cultural adaptation in immigrant families. *J Soc Issues.* (2001) 57:511–21. doi: 10.1111/0022-4537.00226

85. Klein EM, Müller KW, Wölfling K, Dreier M, Ernst M, Beutel ME. The relationship between acculturation and mental health of 1st generation immigrant youth in a representative school survey: does gender matter? *Child Adolescent Psychiatry Ment Health.* (2020) 14:1–10. doi: 10.1186/s13034-020-00334-6

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EDITED BY
Ilse Derluyn,
Ghent University, Belgium

REVIEWED BY
Parnian Rafei,
Trinity College Dublin, Ireland
Alessandra Costanza,
University of Geneva, Switzerland

*CORRESPONDENCE
Jihane Naous
✉ jnaous@ufl.edu

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Psychosocial wellbeing and risky health behaviors among Syrian adolescent refugees in South Beirut: a study using the HEEADSSS interviewing framework

Youssef Rizk[1,2], Reem Hoteit[3], Beatrice Khater[1] and Jihane Naous[1,4]*

[1]Department of Family Medicine, American University of Beirut Medical Center, Beirut, Lebanon, [2]Lebanese American University Medical Center Rizk Hospital, Beirut, Lebanon, [3]Faculty of Medicine, Clinical Research Institute, American University of Beirut, Beirut, Lebanon, [4]Department of Community Health and Family Medicine, College of Medicine, University of Florida, Gainesville, FL, United States

Purpose: Adolescent refugees are at risk of mental health disorders and underdiagnosed risky behaviors. Limited research exists in the Middle East and North Africa. This study aims to assess psychosocial wellbeing and risk-taking behaviors among adolescent refugees displaced to South Beirut following a standardized framework.

Methods: A cross-sectional study using face-to-face confidential HEEADSSS (Home, Education/Employment, Eating, Activities, Drugs, Sexuality, Safety and Suicide/Depression) interviews was conducted among 52 Syrian adolescent refugees, between the ages of 14 and 21, in a health center in South Beirut.

Results: The mean age of the interviewees was 17.04±1.77 years, with a male predominance 34 (65.4%). Five (9.6%) were married, 38 (73.1%) were not attending school 27 (52.9%) lived in a place with a crowding index ≥3.5 and 21 (40.4%) were working. Risky health concerns or behaviors detected included no activities or exercise 38 (73.1%), eating one to two meals per day 39 (75%) and smoking 22 (42.3%). Eleven (21.2%) have been ever offered drugs and 22 (42.3%) believed they should carry a weapon for protection. Twenty one out of 32 (65.7%) had major depressive disorders and 33 (63.5%) screened positive for behavioral problems. Exposure to home verbal or physical violence, male gender, smoking, and employment were associated with high scoring in behavioral problems. Smoking and ever been touched in an unwanted way were found to be associated with depression.

Conclusion and practical implications: Implementing the HEEADSSS interviewing assessment within medical encounters with refugee adolescents is one efficient way to detect risky health behaviors and mental health problems. Interventions need to be implemented as early as possible in the refugees' journey to help them cope and gain resilience. Training health care providers to conduct the questionnaire and delivering brief counseling when required is recommended. Establishing a network of referrals to provide multidisciplinary care to adolescents can be helpful. Obtaining a fund to distribute safety helmets for adolescent motorbike drivers can be a way to reduce injuries. More research among

adolescent refugees in multiple settings, including teenagers in the host country, is needed to serve this population better.

KEYWORDS

adolescents, behavioral problems, depression, HEEADSSS interview, health risk behaviors, refugees, asylum seeker, war and demoralization

Introduction

The current crises in the Middle East and North Africa have resulted in an enormous surge in asylum seekers worldwide (UNHCR, 2019; Palattiyil et al., 2022). Conflict in Syria reached its 12th year in 2022. The migration of Syrians from civil war urges nations to explore sustainable solutions for resettlement (UNHCR, 2020). Concerns over the psychosocial wellbeing of young people who are forced to leave their countries have sparked international calls for studies to direct the creation of support programs for this vulnerable population (Zamani and Zarghami, 2016; Hirani et al., 2018). About half of all refugees globally are under 18 years old (UNHCR, 2019). As of February 2022, around 840,000 Syrian refugees had been registered by the UNHCR as settling in various areas of Lebanon (UNHCR, 2022). However, estimates by the Lebanese government and several local non-governmental organizations suggest that there are 1.5 million Syrian refugees in Lebanon, the majority of whom are children and young adults (WRMCouncil, 2021). In Lebanon, Syrian adolescent refugees were significantly affected by economic pressure during displacement, resulting in a lack of educational opportunities (Cherri et al., 2017). In general, compared to younger and older age groups, adolescents have unique healthcare needs (Patton et al., 2016), and visit doctors less often than any other age group (Nordin et al., 2010). In adolescent refugees and forcibly displaced youth, the situation is furthermore critical, due to the stressors endured and especially when the host country is of low-income and is already struggling to respond to its population needs. Unfortunately, 80 % of all Syrian refugees are located in neighboring countries (Palattiyil et al., 2022).

Risky health behaviors like substance misuse, poor level of activity, early sexual activity, unintentional injuries, exposure to violence, and many others have caused the majority of morbidity and mortality among young people around the world (Mokdad et al., 2016; Klein et al., 2020). Prevention of those risky behaviors (through screening and counseling) is as important as managing their health consequences (Laporte et al., 2017; Searight, 2018). Higher rates of risky behaviors are expected among adolescent refugees, especially since nearly half do not attend school (Palattiyil et al., 2022). A study conducted in Western Australia on adolescent refugees using a structured interview framework reported a high frequency of health risk behaviors requiring intervention (Hirani et al., 2018). Various interventions have been used to tackle current mental health disorders and risk-taking behaviors in refugees while preventing future ones. These are usually used after addressing urgent diagnoses like high risk for suicide or suspicion of abuse. (Mishori et al., 2017) Using face-to-face interviews (Johnson et al., 2021), meaning-based psychotherapy approaches like demoralization and meaning in life (Costanza et al., 2022), cognitive-behavioral therapy (CBT), and narrative exposure therapy (Slobodin and De Jong, 2015) are effective and can be used as early as possible in the displacement. However, most studies were conducted on adults, and few among children and adolescents (Costanza et al., 2022).

Studies showed that exposure to stressful events in infancy and adolescence is associated with impaired post-life physical and mental health effects, including greater involvement in negative health risk behaviors (Felitti et al., 1998; Patton et al., 2016). Behavioral problems and conduct disorders are risk factors for psychiatric disorders and criminal outcomes in adulthood (Schaeffer et al., 2003; De Sanctis et al., 2012). High resettlement stressors like poverty, insecure immigration status and limitations on work and education can tremendously affect the mental health of adolescent refugees and their future productivity (Song and Teichholtz, 2019). Therefore, every adolescent psychosocial interview must include screening for symptoms of depression (Searight, 2018). Mental health disorders were one of the leading causes of disability-adjusted life-years (DALYs) for ages 10–24 for both sexes, whereas for ages 15–19 and 20–24, depressive disorders were the leading cause for females (Mokdad et al., 2016; Blackmore et al., 2020). Depression, anxiety, post-traumatic stress disorders (PTSD) and behavioral problems are prevalent among this population and vary widely among studies (Sapmaz et al., 2017; Kien et al., 2019).

Studies conducted so far in Lebanon on forced displaced refugees tackled psychological disorders and diseases like depression (Naja et al., 2016; Peconga and Høgh, 2020), PTSD (Peconga and Høgh, 2020), anxiety (Peconga and Høgh, 2020), and eating disorders (Aoun et al., 2019). However, a comprehensive assessment of risky health behaviors was not used, behavioral problems were scarcely reported, and few studies included adolescents under 18. We aimed in our study to collect Syrian adolescent refugees' psychosocial history and identify risk-taking behaviors following an adolescent interviewing framework as per the American Academy of Family physicians (AAFP) and the American Academy of Pediatrics (AAP) guidelines (Ginsburg and Kinsman, 2014; Klein et al., 2020). We also sought to verify in our population of adolescent refugees the factors usually associated with behavioral problems and depression and to find potential new ones.

Methodology

Study design

A cross-sectional study using face-to-face interviews was conducted between August and October 2019 in a healthcare center in South Beirut, where forcibly displaced refugees were located. The center is a site where family medicine residents provide care under supervision as part of their training at the American University of Beirut (AUB). Eligible interviewees were Syrian adolescent refugees between the age of 10 and 21 (as per the adolescence period

definition), agreeing to be interviewed confidentially and frequenting the center to ensure continuity of care. After reviewing our interview questionnaire, the healthcare center decided to allow us to interview only adolescents aged 14 to 21. All (100) Syrian refugee adolescents between the ages of 14 and 21 who were receiving their primary health care at the designated medical center were intended to be approached by the research team. The snowball sampling technique was planned to be used to recruit additional participants living in the area. The parents, for adolescents under the age of 18, and the participants above the age of 18, were either approached for recruitment by telephone call when confirming their upcoming appointment or on the day of their appointment. An on-site family medicine-trained resident started conducting the interviews initially, then, for the sake of their time, we hired a clinical psychologist to conduct the interviews. Both were independent of the research team. The participants were not compensated for their time and contribution to the study. There was no fund received to complete the study.

Ethical consideration

The approval of the institutional review board (IRB) at the AUB was obtained prior to commencing the study. An IRB-approved written informed consent was obtained from adolescents 18 years and above. Assent was obtained from adolescents under 18 years after receiving approval from at least one of the parents. In case of illiteracy, the nurse on site (independent from the research team) was present for consenting/assenting parents/adolescents and to sign the documents. Additionally, the interviews were conducted according to the recommendations established by the AAFP and the AAP (Ham and Allen, 2012). Health concerns identified were referred to the medical center team or to the American University of Beirut Medical Center.

Study instrument

A demographic survey was used to provide information on the characteristics of the participants. The questionnaire following a standardized interviewing framework was conducted in the Arabic language and was used to collect the psychosocial history and identify the risk-taking behaviors of adolescent refugees. The standardized adolescent health interview was based on the traditional HEEADSSS (Home, Education/Employment, Eating, Activities, Drugs, Sexuality, Safety and Suicide/Depression) framework for conducting a comprehensive psychosocial risk assessment of an adolescent, developed by Goldenring and Cohen (1988) and Klein et al. (2020). Framework means that the sequence of domains, or aspects of life, is respected during the interview, however, the specific questions in each are chosen from a set of suggested questions (Table 3 of reference Klein et al., 2020). The HEEADSSS interview is a practical, time-tested, complementary strategy that physicians can use to build on and incorporate the guidelines into their busy office practices. This is an effective way to engage in conversation with teenagers and address many of the challenges faced by this age group (Smith and McGuinness, 2017). After our proposal submission, the latest version added Strengths as well (Klein et al., 2020) to avoid focusing solely on risks. The interview mnemonic became SSHADESS (Strengths, School, Home, Activities, Drugs, Emotions/Eating, Sexuality, Safety). As for drugs excluding tobacco, any kind of use was followed by the CRAFFT questionnaire, a well-known tool to assess drugs in adolescent care, part of the traditional assessment as well (Goldenring and Rosen, 2004). The health center refused to allow us to administer the sexuality domain. After being translated from English, the questionnaire was piloted in Arabic on a group of adolescent refugees. AUB-IRB approved the Arabic version.

For legal purposes, some questions in various domains had to be modified from the initial questionnaire, as advised by the IRB attorney, to avoid involving the authorities. The legislation in Lebanon demands that any findings of an unlicensed firearm, substance use (other than alcohol or tobacco), or suicide attempt must be reported with no respect for the medical encounter confidentiality.

Measures

Sociodemographic and other factors

Age, working hours per day, hours of exercise per week, age of first-time smoking, number of cigarettes/days, number of hubble-bubbles per week, and PHQ9 total score and scoring of behavioral problems were considered as continuous variables. All other variables were considered as categorical.

Depression

The Patient Health Questionnaire (PHQ-2) followed by the PHQ-9 if the PHQ-2 score was ≥2, which are usual parts of the HEEADSSS interview, were used to screen for depression (Kroenke et al., 2001). PHQ-9 is a simple 9-item screening instrument used in community settings to detect depression symptoms. Each item is scored for the previous 2 weeks (0: not at all, 1: several days, 2: more than half the days, and 3: nearly every day). The total score ranges from 0 to 27, with higher values implying more severe depression. A score of 0–4 indicates minimal depression; 5–9 indicates mild depression; 0–14 indicates moderate depression; 15–19 indicates severe depression; and a score of 20–27 indicates severe depression. Depression was used as categorical (yes ≥10: major depression; no ≤9: no major depression). A total score of 10 or higher indicated the probability of major depression, with a sensitivity of 80% and specificity of 92% (Manea et al., 2012; Chin et al., 2014).

Behavioral problems

Depression and behavioral problems are prevalent among adolescent refugees and have a major impact on post-life physical and mental health effects, including greater involvement in negative health risk behaviors (Felitti et al., 1998; Patton et al., 2016; Sapmaz et al., 2017; Kien et al., 2019). The behavioral problems outcome consisted of eight questions that were added to our HEEADSSS assessment (questions 59–66, please see questionnaire-Appendix). Although the safety domain in the traditional interview contains few questions about behavioral concerns like engaging in fights, we preferred to conduct a more thorough screening, as it is recommended, when a provider has the time to complete it (Goldenring and Rosen, 2004). Questions related to behavioral problems or conduct disorder were obtained from an AAFP article published in 2018 describing how to screen for conduct disorder in an interview: *Conduct Disorder: Recognition and Management*

(Goldenring and Rosen, 2004; Lillig, 2018). Any positive response to the eight questions in the section in the behavioral problems screening would prompt the provider to investigate further for a conduct disorder. For the analysis, the screening tool was studied as a continuous variable (0–8).

Data analysis

Sociodemographic characteristics have been summarized using descriptive statistics. Continuous variables. Were expressed as means and standard deviations (SD), and categorical variables as frequencies and percentages. The main dependent variables in our study are behavioral problems and depression. Behavioral problems screening score was used as continuous as one person can have one or more behavioral concerns, and depression was used as categorical. We also pursued to verify in our population of adolescent refugees the factors usually associated with behavioral problems (Lillig, 2018) and depression (Kheirallah et al., 2020) cited in the literature. To assess the association between depression and the independent variables, chi-square (χ^2)/Fisher's exact tests were used as depression was categorized. To test the association between behavioral problems (calculated as scores) and the independent variables, *t*-test was used to compare means for the variables normally distributed, and Cohen's d was used to measure the difference between two group means. Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS, version 28) and R language (Version 4.1.2). Statistical significance was set at $p < 0.05$.

Results

During the study period, 59 adolescent refugees had appointments or visited the clinic and were found eligible to participate in the research study. Of the eligible patients, two refused to participate, and five did not show up on the interview date. Subsequent interviews were arranged and completed with a total of 52 adolescents.

Sociodemographic

The sociodemographic characteristics of the study group are represented in Table 1. The mean age (range) was 17.1 ± 1.77 (14 to 21) years. There was a predominance of males 34 (65%) compared to females 18 (35%). Most were single 43 (83%), while five (9.6%) were married. Among the married, two were males, three were females and the five were above the age of 18. Two males and two females were engaged, among them, one male and one female were 15 years old.

The HEEADSSS results are summarized in Figures 1, 2; Tables 1, 2; Supplementary Tables 1A–D.

Home, education/employment, and eating/activity characteristics

Home. More than half of the participants 27 (52.9%) lived in crowded residences (≥3.5). The average number of family members in one household was 7.4 persons (range 5–12). The average number of rooms was 2.1 (range 1–4), and the average total size of the house did not exceed 32 m^2. Fourteen individuals (26.9%) lived with one of their parents, either their mother or father, while four (7.7%) did not live with any of their parents. *Education/Employment.* Most of the participants were not attending school, 25 males and 13 females (73.1%), none above 18 went to school or college, and 21 (40.4%) were employed (Figure 2). Males tended to start working at an earlier age than females. Sixty-one percent of employed males were under the age of 18, while all working females were above the age of 18. The mean (SD) working hours per day was 8.48 (±2.29) hours. *Eating/Activity* 39 (75%) adolescent refugees had 1–2 meals per day (with an average of 2.2 meals per day among all participants) and a good majority 38 (73.1%) did not exercise or participate in any activity. And 100% of the girls in our sample reported no Activity, hobby, or exercise (Supplementary Table 1A).

TABLE 1 Sociodemographic characteristics of 52 Syrian adolescent refugees displaced to South Beirut interviewed following the HEEADSSS framework—2019.

Variables	Mean	SD	n	%
Age	17.04	1.77	–	–
Gender				
Male	–	–	34	65.4
Female	–	–	18	34.6
Marital status	–	–		
Single	–	–	43	82.7
Married	–	–	5	9.6
Engaged	–	–	4	7.7
Currently attending school	–	–		
Yes	–	–	14	26.9
No	–	–	38	73.1

Risky health concerns/behaviors, drugs, suicidality/depression, and safety

Drugs. During the previous 12 months of surveying, 4 (7.7%) individuals tried alcohol and 11 (21.2%) were offered drugs other than tobacco and alcohol. The CRAFFT score was administered to these 15 adolescent refugees. Twenty-two (42.3%) of participants were current smokers of cigarettes or hubble-bubble. Further analysis revealed that males smoked cigarettes as well as hubble-bubble, but all females smoked hubble-bubble. The mean age of smoking adolescents was 14.5 ± 2.14 years. The mean number of cigarettes per day was 16.23 ± 6.3 and the number of hubble-bubbles per week per person was 4.25 ± 2.99. Three of the 11 of adolescents (two males and one female) who had been offered any drugs (marijuana, hashish, pills, inhalants, cocaine, or heroin) were under the age of 18 (Supplementary Table 1B). *Suicidality/Depression.* Thirty-two (61.54%) screened positive for depression with a PHQ-2 ≥ 2. Those 32 underwent the PHQ-9 questionnaire. Of the 32 participants, 21 (65.7%) had major depression (score ≥ 10). Fourteen out of 32 (43.75%) scored in the categories of moderately severe and severe depression (score ≥ 15). Of the 32 refugee adolescents screened positive for depression, 19 (59.38%) reported suicidal thoughts. The descriptive statistics of depression are shown in Supplementary Table 1.

Safety. Twenty-two adolescent refugees (42.3%) believed they should carry a weapon (knife or gun) to protect themselves. Twelve

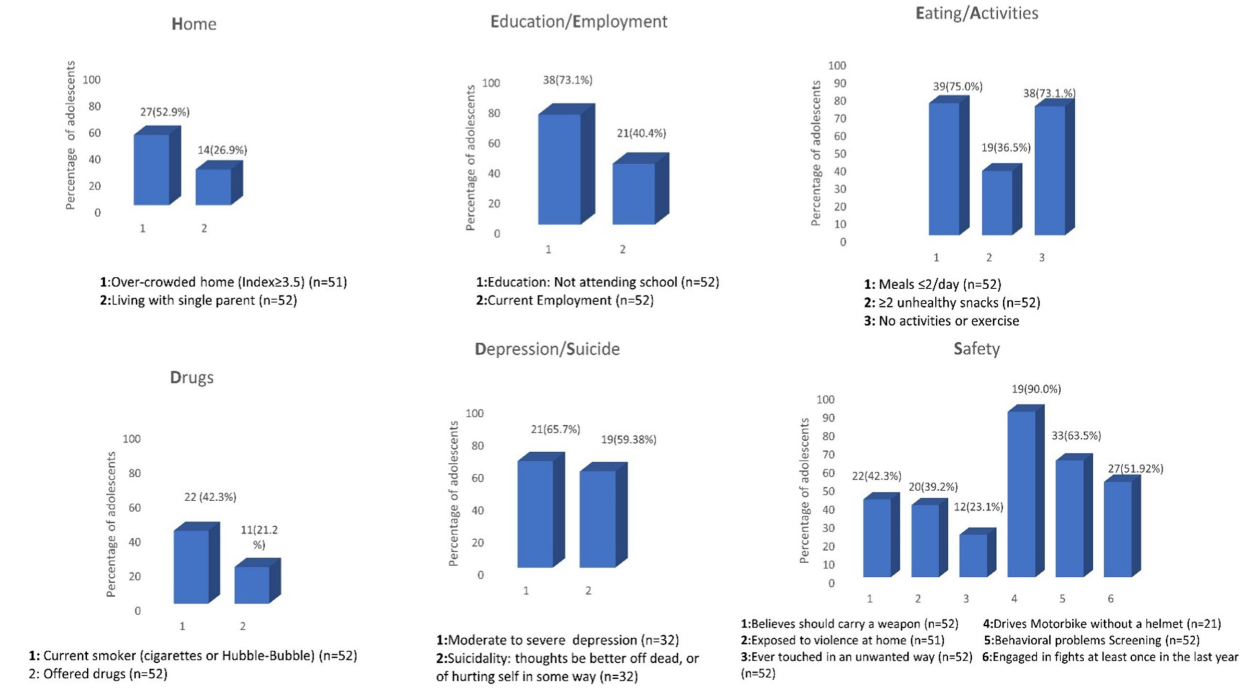

FIGURE 1
Risky health concerns/behaviors among 52 Syrian adolescent refugees displaced to South Beirut interviewed following the HEEADSSS framework[¥]—2019. [¥]We reported our findings as possibly similar to the table reported in the AAFP 2020 article reporting risky health behaviors among adolescent high school students in the US (Klein et al., 2020).

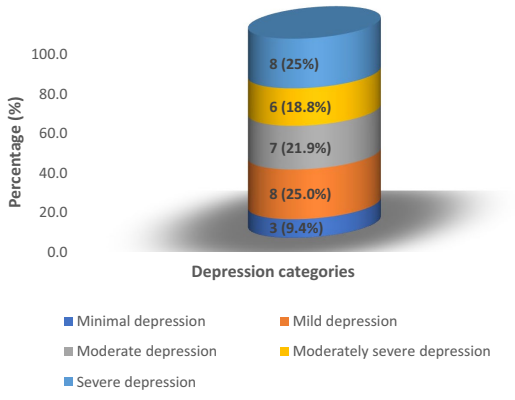

FIGURE 2
PHQ-9 depression scale among Syrian adolescent refugees displaced to South Beirut (n=32).

(23.1%) reported ever being touched in an unwanted way, 20 (39.2%) were ever exposed to verbal or physical violence at home, and 27(51.92%) had engaged in fights in school or the neighborhood at least once in the last year. Twenty-one (40.38%) drove a motorcycle, of whom 19/21 (90.47%) did not wear a safety helmet. Screening for behavioral problems (at least one positive response to the 8 questions administered) was found positive in 33 (63.5%) adolescent refugees (Supplementary Table 1D). The descriptive statistics of the behavioral problems are shown in Supplementary Table 1. Any positive screening in the depression or behavioral problems domains was referred to the mental health providers or physicians in the center or in AUB if needed.

Factors associated with depression and behavioral problems

Smoking status ($\chi^2 = 4.938$, $p = 0.033$) and ever been touched in an unwanted way ($\chi^2 = 6.279$, $p = 0.017$) were found to be associated with a positive depression screening. Male gender ($t = 2.909$, $p = 0.005$), history of exposure to home violence ($t = -2.734$, $p = 0.009$), smoking status ($t = -2.112$, $p = 0.040$) and current employment ($t = -1.889$, $p = 0.032$) were found associated to a positive screen for behavioral problems in our adolescent refugee population (Tables 3, 4).

Discussion

Structured interviews, conducted confidentially to assess psychosocial wellbeing and risky health behaviors among adolescent Syrian refugees, helps spot issues and disorders in a center serving refugees in Beirut. Early marriage and employment, low school enrollment, tobacco use, drug access, sexual intimidation, and positive screening for depression and behavioral problems, besides other health concerns, were detected with high frequencies.

Our study's high rates of health risk behaviors and depression emphasize the obstacles and challenges that the Syrian adolescent population faces in a low-to-middle income host country. We assessed our findings by comparing them to existing literature, examining

TABLE 2 Factors found associated to positive screen for depression among 52 Syrian adolescent refugees displaced to South Beirut interviewed following the HEEADSSS framework—2019.

	Depression	
	χ^2	*p*-value
Gender	0.026	1.000
Exposure to home violence	1.697	0.250
Currently smoker	4.938	0.033**
Currently at school	4.546	0.055
Ever touched in an unwanted way[¥]	6.279	0.017*
Currently employed	0.089	0.781

**Test is significant at the 0.01 level (2-tailed).
*Test is significant at the 0.05 level (2-tailed).
[¥]Fisher exact test.

associated factors, and speculating on what more may be learned about this vulnerable group. Moreover, we provided a series of recommendations for the center to consider because these rates can be used to improve health outcomes.

Health concerns found prevalent in multiple domains of the HEEADSSS assessment (sexuality omitted)

Comparing our data to the national 2017 US data (Kann et al., 2018) and to similar studies among refugees in high and low-income host countries revealed that our population is at high risk in multiple domains.

Our study showed that 27(52.9%) of the adolescents lived in *Homes* or households with a crowding index above 3.5. The American crowding index defines severe crowding as having more than 1.5 persons per room (WHO, 2018). Crowded homes in studies among Palestinian refugees have been found to be associated with a lack of privacy, the spread of disease, and an increase in home accidents (Al-Khatib et al., 2005; Habib et al., 2006). As for *Eating*, our data is similar to the 2015 UNHCR report (UNHCR, 2015), which found an average of 2.2 meals per day. A healthcare provider doing the screening and counseling in these domains might perceive crowded homes and food type and availability to be non-modifiable factors. However, counseling in early life about reducing the consumption of sodas and unhealthy snacks is doable and is likely to change adolescents' snack choices. Moreover, communicating housing and food issues with objective and accurate data to authorities and non-governmental organizations is more likely to generate adequate help.

Regarding *Education and employment*. The high rate of dropping out of school 38 (73.1%) in our studied population, is a concerning factor because of the possible link to adverse long-term outcomes (DeJong et al., 2017). A report by the Overseas Development Institute (ODI) on Syrian refugees in Lebanon found that the proportion of children not attending school increases considerably with age, with a reported 92.26% of children 15–18 years old out of school in 2014 (Watkins and Zyck, 2014). The reported barriers in the literature affecting education for refugees are foreign language needs (schools in Lebanon teach

TABLE 3 Factors found associated to positive screen for behavioral problems among 52 Syrian adolescent refugees displaced to South Beirut interviewed following the HEEADSSS framework—2019.

	Behavioral problems	
	Independent *t*-test Cohen's *d*	*p*-value
Gender	2.909 *0.848*	0.005**
Exposure to home violence	−2.734 *−0.784*	0.009**
Currently smoker	−2.112 *−0.593*	0.040*
Currently at school	−0.373 *−0.116*	0.711
Ever touched in an unwanted way	−0.439 *−0.145*	0.662
Currently employed	−1.889 *−0.534*	0.032*

**Test is significant at the 0.01 level (2-tailed).
*Test is significant at the 0.05 level (2-tailed).
Italic represents the Cohen's *d* value.

TABLE 4 Descriptive statistics of the behavioral problems outcome among 52 Syrian adolescent refugees displaced to South Beirut.

	Positive answer* n (%)
1. Have you skipped school in the last 12 months?	7 (13.5)
2. Have you been suspended or expelled from school?	4 (7.7)
3. Have you ever gotten into any physical fights at school?	8 (15.4)
4. Have you gotten into physical fights in your neighborhood, or other places?	25 (48)
5. Have you gotten in trouble with the police?	14 (26.9)
6. Have you been in situations where you destroyed property?	11 (21.1)
7. Have there been times when you stayed out very late without permission?	13 (25)
8. Have there been times when you have run away from home?	7 (13.5)

*An interviewee might answer yes to multiple questions.

French or English with Arabic), interrupted schooling, bullying by the host country's peers, and academic difficulties (DeJong et al., 2017; Hirani et al., 2018). These were not collected variables in our study. However, child marriage and the female gender were reported in the literature as contributive factors for school interruption (DeJong et al., 2017). Our study found that 100% of the girls in our sample reported no *Activity*, hobby, or exercise, implying some over-protection of girls; however school drop, and marriage were almost similar in both genders of our sample. The small sample size in our study most likely affected the finding of concordant results with the literature. As for employment, 21 (40.4%) of our sample of adolescent refugees were found working an average of 8.5 h per day. Habib et al., reported in a study done among Syrian refugee child workers in the Bekaa valley of Lebanon,

an average of 6.7 h per day (Habib et al., 2021). We want to emphasize that our results are alarming, and would like to remind that child labor is illegal, and some tasks and exposures are reported to be harmful to a child's health at such a young age, with a risk of work-related injuries (Habib et al., 2020, 2021). Further questions need to be directed to families and schools surrounding the center to investigate the dropout from school and the high employability.

Concerning *Drugs*, nearly 22(42.3%) of the adolescent refugees smoked, and almost 11(21.2%) had been ever offered drugs. The reported tobacco use rates in a study with similar background characteristics but a larger sample size among adolescent Palestine refugee and non-refugee groups were 26.7% vs. 24.0% in Jordan, 39.4% vs. 38.5% in Lebanon, and 39.5% vs. 38.4% the West Bank (Jawad et al., 2016). Low alcohol consumption was reported; however, it could be under-reported due to religious stigma, as other studies have described (Baron-Epel et al., 2015). Cigarette and drug misuse should be discussed in private at every visit because counseling and dealing with peer pressure are crucial in preventing future problems.

About *Safety*, only one out of every 10 refugees use a helmet while riding a motorbike and 22(42.3%) believed they need a weapon (knife or gun) to protect themselves. It is well known that the morbidity and mortality from an accident are not negligible and unintentional injuries are prevalent among youth (Goldenring and Rosen, 2004; Searight, 2018; Klein et al., 2020). Awareness campaigns should focus on preventing adolescent motorcycle use without a helmet. Funding might be needed if buying a helmet is outside the reach of the adolescents or their families. The dangers of carrying a weapon should be thoroughly explained as well.

One modifiable *home*-related and *safety*-related risk factor identified in our study would be exposure to violence, reported in almost 40% of homes. However, we did not investigate if these incidents were war-related or not. In a study conducted in Turkey in 2018 about forcibly displaced Syrian children and adolescents, 25.6% personally experienced cruelty during the war (Gormez et al., 2018). Raising awareness about avoiding verbal/physical violence at home and, if possible, preventing children and adolescents from experiencing violent incidents has been shown to reduce morbidity in current and older age groups (Kingston et al., 2016). While we did not go through the details of the exposure to violence before the settlement in Beirut, we recommend concrete efforts to stop violent experiences among this vulnerable population.

Behavioral problems screening among adolescent refugees

A high score for behavioral problems 33(63.5%) was found in our Syrian adolescent refugees when a set of questions was utilized to screen for the presence of the disorder. We found violence at home and the male gender as the main associated factors. Current cigarette use and current employment were also found to be significantly associated with a positive screen for a behavioral problem. These findings echo the literature where male sex and exposure to physical or sexual abuse or domestic violence were cited as risk factors for behavioral problems, among many others (Lillig, 2018). A study conducted by Çeri and Nasiroğlu (2018) visiting behavioral problems and other mental health disorders among Syrian refugee children in Turkey, reported a positive screening for conduct problems in 21/77(27.3%) and an association to previous traumatic experience. However, it is important to note that, apart from war-related violence, exposure to violence or abuse and substance use are factors for behavioral problems not unique to the Syrian adolescent population (Lillig, 2018). These factors are shared by any adolescent living in these circumstances. Therefore, the frequency identified should be compared to their Lebanese and Palestinian adolescent peers, and the effect of witnessing war-related violence is a factor to be studied solo. Furthermore, because our tool is a screening rather than a diagnostic tool, adolescents who screened positive for behavioral problems should be reassessed by a mental health practitioner and receive appropriate counseling and assistance. We recommend constant screening of behavioral problems among adolescents and specifically vulnerable ones like refugees, as behavioral problems and conduct disorders are predictors of poor psychiatric and criminal outcomes in adulthood (Schaeffer et al., 2003; De Sanctis et al., 2012).

Depression among adolescents refugees

According to a recent systematic review, the total depression prevalence among refugee children and adolescents is estimated to be 14% (Blackmore et al., 2020). Also, a study conducted in Turkey in 2017, using a psychiatric assessment through interviewing, reported a psychiatric disorder found in almost half of the children and adolescent refugees and a depressive disorder among 13.4% (Sapmaz et al., 2017). Our data demonstrated a high prevalence of depression, 21/32 (65.6%) scored above 10 on the PHQ-9. This could be explained by the fact that the living conditions in a developing country like Lebanon, are difficult as resettlement stressors and school interruptions are high. Lebanon is an unstable country with frequent traumatizing events that trigger mental health disorders in the local and refugee populations. For example, the Beirut Port semi-nuclear explosion of August 2020 was a major traumatic event that increased the need for mental health care in the country. Additionally, witnessing parents and caregivers enduring the displacement and going through adaptation problems make adolescent refugees subject to depression and other mental health problems (Paoletti et al., 2013).

Moreover, we are concerned about the suicidal ideations rate of 19/32 (59.38%). None of the studies cited in our discussion reported any percentage in an adolescent refugee population. However, a recent study among Syrian adult refugees in Lebanon reported 40% of suicidal thoughts (Naal et al., 2021). We fear as well these adolescent refugees are going through suicidal ideations linked to a demoralization and hopelessness process rather than depressive symptomatology since demoralization has been found to be an independent risk factor for suicide regardless of the presence of clinical depression (Clarke and Kissane, 2002; Costanza et al., 2022). Immediate action regarding universal screenings and appropriate referrals is needed to protect these adolescents and maintain their mental health. Finally, our findings revealed that smoking cigarettes and ever been touched in an unwanted way are associated with higher levels of depression. Contemporary research among adolescents and youth refugees in Jordan yielded comparable results regarding tobacco and its association with depression and prior trauma (Kheirallah et al., 2020).

Limitations

The key drawback of this study is that the sample size might be perceived as low and limiting the study's power. Due to ethical reasons, the study had to take place in a setting with an appropriate referral and support system if any new health risk was identified, therefore, we could not approach any adolescent refugee in the area. We could not reach adolescents in their homes, thus limiting the sample to those who attend the center. A working adolescent or a girl raised in a conservative milieu might not be accessible. As we were aiming for a convenience sample, we expected to reach more adolescents frequenting the center (100 registered in the center) and more living in the camp using the snow-balling technique. Unfortunately, the study was disrupted by the frequent demonstrations and road closures imposed by the "October 19 revolution" in Lebanon, which lasted many months. It was followed by the formal declaration of the COVID-19 pandemic and lock-down in March 2020. IRB prohibited any face-to-face interviewing throughout the pandemic, and the center could no longer accommodate our presence as it had to deal with the COVID-19 cases.

Despite efforts to ensure that respondents felt comfortable answering sensitive questions and that confidentiality will be preserved, under-reporting of risk behaviors in this conservative setting might be a potential limitation of this study. In addition, several aspects of the data relied on participants recalling past events, which may result in recall bias. However, using the questionnaire in Arabic, which is the native language of the refugees, might have ensured comfort during the encounter as an interpreter did not need to be present in the room. This increased the adolescent's perception of confidentiality and reduced any information that could be lost in interpretation.

Other limitations were imposed by the setting where the interviews took place and by the legal system in Lebanon as explained earlier in the methods section. Since we dealt with a vulnerable population, the center's medical and mental health teams strongly recommended excluding younger adolescents (ages 11–13). Moreover, the sexual domain questions were excluded from the survey, as requested by the center, as the parents would not accept these questions as "culturally" appropriate.

Strengths

To the best of our knowledge, this is the first study in Lebanon and the Middle East that aims to assess adolescent refugees' psychosocial condition and behavior, including those under 18, using the HEEADSSS adolescent health framework as per the AAFP and the AAP guidelines (Sapmaz et al., 2017; Klein et al., 2020). This study demonstrates the importance of following current guidelines for interviewing adolescents using structured questionnaires. Some health concerns will go unnoticed if the physician does not ask targeted, well-structured questions. Moreover, behavioral problems or conduct disorder screening was fully included in our framework, as we aimed to visit this under-screened domain.

Despite circumstances disrupting the data-gathering process, as explained above, our sample is reliable due to the rigorous methodology we utilized and the comprehensive data we collected. Moreover, most families had no issues interviewing the adolescent alone, and the HEEADSSS questionnaire demonstrated efficiency in this vulnerable population by identifying many health concerns.

Practical implications

We encourage the routine use of the HEEADSSS assessment in a confidential setting with all refugee adolescents rather than only, when necessary, to detect health risk behaviors and mental health disorders. Interventions need to be implemented as early as possible in the refugees' journey to help them cope and gain resilience. Training health care providers in the center or any needed similar setting to conduct the questionnaire and delivering brief counseling when required is recommended. Establishing a network of referrals to provide multidisciplinary care to the adolescents in whom risk behaviors and disorders were identified can be helpful and useful. Obtaining a fund to distribute safety helmets for motorbike drivers can be a way to reduce injuries related to motor vehicle accidents. It is necessary to intensify research on adolescents and young adults, to mobilize the medical body, the governmental and non-governmental funds, and social affairs toward specific risk-taking behaviors that may impact adult health outcomes.

Conclusion

Using standardized questionnaires to assess adolescent Syrian refugees' health behaviors and psychosocial wellbeing helps detect numerous risk behaviors. It allows healthcare practitioners to better serve the adolescent population of refugees and their peers. It will also assist them in better understanding the needs and behaviors of this population so that they can intervene accordingly. More research with a larger population is needed to draw more precise conclusions and compare with the health risk behaviors and mental health problems of Lebanese adolescents living in a similar neighborhood. In addition, research comparing the behaviors of adolescent refugees displaced to an urban area and adolescent refugees displaced to a rural area is needed.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The approval of the institutional review board (IRB) at the American University of Beirut was obtained prior to commencing the study. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

YR and JN designed the study and wrote the proposal. JN and RH analyzed the data. RH prepared the tables and figures. YR, JN, and RH wrote the main manuscript text. BK revised the final draft. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1019269/full#supplementary-material

References

Al-Khatib, I. A., Arafat, R. N., and Musmar, M. (2005). Housing environment and women's health in a Palestinian refugee camp. *Int. J. Environ. Health Res.* 15, 181–191. doi: 10.1080/09603120500105950

Aoun, A., Joundi, J., and El Gerges, N. (2019). Prevalence and correlates of a positive screen for eating disorders among Syrian refugees. *Eur. Eat. Disord. Rev.* 27, 263–273. doi: 10.1002/erv.2660

Baron-Epel, O., Bord, S., Elias, W., Zarecki, C., Shiftan, Y., and Gesser-Edelsburg, A. (2015). Alcohol consumption among Arabs in Israel: a qualitative study. *Subst. Use Misuse* 50, 268–273. doi: 10.3109/10826084.2014.962051

Blackmore, R., Gray, K. M., Boyle, J. A., Fazel, M., Ranasinha, S., Fitzgerald, G., et al. (2020). Systematic review and meta-analysis: the prevalence of mental illness in child and adolescent refugees and asylum seekers. *J. Am. Acad. Child Adolesc. Psychiatry* 59, 705–714. doi: 10.1016/j.jaac.2019.11.011

Çeri, V., and Nasiroğlu, S. (2018). The number of war-related traumatic events is associated with increased behavioural but not emotional problems among Syrian refugee children years after resettlement. *Arch. Clin. Psychiatr.* 45, 100–105. doi: 10.1590/0101-60830000000167

Cherri, Z., Gil Cuesta, J., Rodriguez-Llanes, J. M., and Guha-Sapir, D. (2017). Early marriage and barriers to contraception among Syrian refugee women in Lebanon: a qualitative study. *Int. J. Environ. Res. Public Health* 14:836. doi: 10.3390/ijerph14080836

Chin, W. Y., Chan, K. T., Lam, C. L., Wong, S., Fong, D. Y., Lo, Y. Y., et al. (2014). Detection and management of depression in adult primary care patients in Hong Kong: a cross-sectional survey conducted by a primary care practice-based research network. *BMC Fam. Pract.* 15, 1–13. doi: 10.1186/1471-2296-15-30

Clarke, D. M., and Kissane, D. W. (2002). Demoralization: its phenomenology and importance. *Aust. N. Z. J. Psychiatry* 36, 733–742. doi: 10.1046/j.1440-1614.2002.01086.x

Costanza, A., Amerio, A., Aguglia, A., Magnani, L., Huguelet, P., Serafini, G., et al. (2022). Meaning-centered therapy in Ukraine's war refugees: an attempt to cope with the absurd? *Front. Psychol.* 13. doi: 10.3389/fpsyg.2022.1067191

Costanza, A., Vasileios, C., Ambrosetti, J., Shah, S., Amerio, A., Aguglia, A., et al. (2022). Demoralization in suicide: a systematic review. *J. Psychosom. Res.* 157:110788. doi: 10.1016/j.jpsychores.2022.110788

De Sanctis, V. A., Nomura, Y., Newcorn, J. H., and Halperin, J. M. (2012). Childhood maltreatment and conduct disorder: independent predictors of criminal outcomes in ADHD youth. *Child Abuse Negl.* 36, 782–789. doi: 10.1016/j.chiabu.2012.08.003

DeJong, J., Sbeity, F., Schlecht, J., Harfouche, M., Yamout, R., Fouad, F. M., et al. (2017). Young lives disrupted: gender and well-being among adolescent Syrian refugees in Lebanon. *Confl. Heal.* 11, 25–34. doi: 10.1186/s13031-017-0128-7

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. *Am. J. Prev. Med.* 14, 245–258. doi: 10.1016/S0749-3797(98)00017-8

Ginsburg, K. R., and Kinsman, S. B. (2014). *Reaching teens: strength-based communication strategies to build resilience and support healthy adolescent development*. Elk Grove, IL: American Academy of Pediatrics.

Goldenring, J. M., and Cohen, E. (1988). Getting into adolescent heads. *Contemp. Pediatr.* 5, 75–90.

Goldenring, J. M., and Rosen, D. S. (2004). Getting into adolescent heads: an essential update. *Contemp. Pediatr. Mont.* 21, 64–92.

Gormez, V., Kılıç, H. N., Orengul, A. C., Demir, M. N., Demirlikan, Ş., Demirbaş, S., et al. (2018). Psychopathology and associated risk factors among forcibly displaced Syrian children and adolescents. *J. Immigr. Minor. Health* 20, 529–535. doi: 10.1007/s10903-017-0680-7

Habib, R. R., Basma, S. H., and Yeretzian, J. S. (2006). Harboring illnesses: on the association between disease and living conditions in a Palestinian refugee camp in Lebanon. *Int. J. Environ. Health Res.* 16, 99–111. doi: 10.1080/09603120500538341

Habib, R. R., Mikati, D., Al-Barathie, J., Abi Younes, E., Jawad, M., El Asmar, K., et al. (2021). Work-related injuries among Syrian refugee child workers in the Bekaa Valley of Lebanon: a gender-sensitive analysis. *PLoS One* 16:e0257330. doi: 10.1371/journal.pone.0257330

Habib, R., Ziadee, M., Abi Younes, E., and Harastani, H. (2020). Syrian refugee child workers: gender differences in ergonomic exposures and musculoskeletal health. *Appl. Ergon.* 83:102983. doi: 10.1016/j.apergo.2019.102983

Ham, P., and Allen, C. W. (2012). Adolescent health screening and counseling. *Am. Fam. Physician* 86, 1109–1116.

Hirani, K., Cherian, S., Mutch, R., and Payne, D. N. (2018). Identification of health risk behaviours among adolescent refugees resettling in Western Australia. *Arch. Dis. Child.* 103, 240–246. doi: 10.1136/archdischild-2017-313451

Jawad, M., Khader, A., and Millett, C. (2016). Differences in tobacco smoking prevalence and frequency between adolescent Palestine refugee and non-refugee populations in Jordan, Lebanon, Syria, and the West Bank: cross-sectional analysis of the global youth tobacco survey. *Confl. Heal.* 10:20. doi: 10.1186/s13031-016-0087-4

Johnson, R. J., Antonaccio, O., Botchkovar, E., and Hobfoll, S. E. (2021). War trauma and PTSD in Ukraine's civilian population: comparing urban-dwelling to internally displaced persons. *Soc. Psychiatry Psychiatr. Epidemiol.* 27, 1807–1816. doi: 10.1007/s00127-021-02176-9

Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Queen, B., et al. (2018). Youth risk behavior surveillance—United States, 2017. *MMWR Surveill. Summ.* 67, 1–114. doi: 10.15585/mmwr.ss6708a1

Kheirallah, K. A., Cobb, C. O., Alsulaiman, J. W., Alzoubi, A., Hoetger, C., Kliewer, W., et al. (2020). Trauma exposure, mental health and tobacco use among vulnerable Syrian refugee youth in Jordan. *J. Public Health* 42, e343–e351. doi: 10.1093/pubmed/fdz128

Kien, C., Sommer, I., Faustmann, A., Gibson, L., Schneider, M., Krczal, E., et al. (2019). Prevalence of mental disorders in young refugees and asylum seekers in European countries: a systematic review. *Eur. Child Adolesc. Psychiatry* 28, 1295–1310. doi: 10.1007/s00787-018-1215-z

Kingston, B., Bacallao, M., Smokowski, P., Sullivan, T., and Sutherland, K. (2016). Constructing packages of evidence-based programs to prevent youth violence: processes and illustrative examples from the CDC's youth violence prevention centers. *J. Prim. Prev.* 37, 141–163. doi: 10.1007/s10935-016-0423-x

Klein, D. A., Paradise, S. L., and Landis, C. A. (2020). Screening and counseling adolescents and young adults: a framework for comprehensive care. *Am. Fam. Physician* 101, 147–158.

Kroenke, K., Spitzer, R., and Williams, J. (2001). The patient health questionnaire (PHQ-9)–overview. *J. Gen. Intern. Med.* 16, 606–613. doi: 10.1046/j.1525-1497.2001.016009606.x

Laporte, C., Vaillant-Roussel, H., Pereira, B., Blanc, O., Eschalier, B., Kinouani, S., et al. (2017). Cannabis and young users—a brief intervention to reduce their consumption (CANABIC): a cluster randomized controlled trial in primary care. *Ann. Fam. Med.* 15, 131–139. doi: 10.1370/afm.2003

Lillig, M. (2018). Conduct disorder: recognition and management. *Am. Fam. Physician* 98, 584–592.

Manea, L., Gilbody, S., and McMillan, D. (2012). Optimal cut-off score for diagnosing depression with the patient health questionnaire (PHQ-9): a meta-analysis. *CMAJ* 184, E191–E196. doi: 10.1503/cmaj.110829

Mishori, R., Aleinikoff, S., and Davis, D. M. (2017). Primary care for refugees: challenges and opportunities. *Am. Fam. Physician* 96, 112–120.

Mokdad, A. H., Forouzanfar, M. H., Daoud, F., Mokdad, A. A., El Bcheraoui, C., Moradi-Lakeh, M., et al. (2016). Global burden of diseases, injuries, and risk factors for young people's health during 1990–2013: a systematic analysis for the global burden of disease study 2013. *Lancet* 387, 2383–2401. doi: 10.1016/S0140-6736(16)00648-6

Naal, H., Nabulsi, D., El Arnaout, N., Abdouni, L., Dimassi, H., Harb, R., et al. (2021). Prevalence of depression symptoms and associated sociodemographic and clinical correlates among Syrian refugees in Lebanon. *BMC Public Health* 21, 1–13. doi: 10.1186/s12889-021-10266-1

Naja, W. J., Aoun, M. P., El Khoury, E. L., Abdallah, F. J. B., and Haddad, R. S. (2016). Prevalence of depression in Syrian refugees and the influence of religiosity. *Compr. Psychiatry* 68, 78–85. doi: 10.1016/j.comppsych.2016.04.002

Nordin, J. D., Solberg, L. I., and Parker, E. D. (2010). Adolescent primary care visit patterns. *Ann. Fam. Med.* 8, 511–516. doi: 10.1370/afm.1188

Palattiyil, G., Sidhva, D., Seraphia Derr, A., and Macgowan, M. (2022). Global trends in forced migration: policy, practice and research imperatives for social work. *Int. Soc. Work.* 65, 1111–1129. doi: 10.1177/00208728211022

Paoletti, P., Perasso, G. F., Lillo, C., Serantoni, G., Maculan, A., Vianello, F., et al. (2013). Envisioning the future for families running away from war: challenges and resources of Ukrainian parents in Italy. *Front. Psychol.* 14:793. doi: 10.3389/fpsyg.2023.1122264

Patton, G. C., Sawyer, S. M., Santelli, J. S., Ross, D. A., and Afifi, R. (2016). Our future: a lancet commission on adolescent health and well-being. *Lancet* 387, 2423–2478. doi: 10.1016/S0140-6736(16)00579-1

Peconga, E. K., and Høgh, T. M. (2020). Post-traumatic stress disorder, depression, and anxiety in adult Syrian refugees: what do we know? *Scand. J. Public Health* 48, 677–687. doi: 10.1177/1403494819882137

Sapmaz, Ş. Y., Tanrıverdi, B. U., Öztürk, M., Gözaçanlar, Ö., Ülker, G. Y., and Özkan, Y. (2017). Immigration-related mental health disorders in refugees 5–18 years old living in Turkey. *Neuropsychiatr. Dis. Treat.* 13, 2813–2821. doi: 10.2147/NDT.S150592

Schaeffer, C. M., Petras, H., Ialongo, N., Poduska, J., and Kellam, S. (2003). Modeling growth in boys' aggressive behavior across elementary school: links to later criminal involvement, conduct disorder, and antisocial personality disorder. *Dev. Psychol.* 39, 1020–1035. doi: 10.1037/0012-1649.39.6.1020

Searight, H. R. (2018). Counseling patients in primary care: evidence-based strategies. *Am. Fam. Physician* 98, 719–728.

Slobodin, O., and De Jong, J. T. (2015). Mental health interventions for traumatized asylum seekers and refugees: what do we know about their efficacy? *Int. J. Soc. Psychiatry* 61, 17–26. doi: 10.1177/0020764014535752

Smith, G. L., and McGuinness, T. M. (2017). Adolescent psychosocial assessment: the HEEADSSS. *J. Psychosoc. Nurs. Ment. Health Serv.* 55, 24–27. doi: 10.3928/02793695-20170420-03

Song, S., and Teichholtz, S. (2019). *Mental health facts on refugees, asylum-seekers, and survivors of forced displacement*. American Psychiatric Association. 1–3. Available at: www.voanews.com/usa/immigration/us-hits-lowered-refugee-cap-2019-another-decrease-looms

UNHCR. Vulnerability assessment of Syrian refugees in Lebanon 2015 report. (2015). Available at: https://reliefweb.int/report/lebanon/vulnerability-assessment-syrian-refugees-lebanon-2015.

UNHCR (2020). *Global Appeal 2020-2021*. Geneva, Switzerland: UNHCR.

UNHCR. Syria regional refugee response: United Nations high commissioner for refugees. (2022) Available at: https://reporting.unhcr.org/lebanon.

UNHCR. Global Trends 2019: Forced displacement in 2019 United Nations high commissioner for refugees. (2019) Available at: https://www.unhcr.org/globaltrends2019/.

Watkins, K., and Zyck, S. A.. *Living on hope, hoping for education: the failed response to the Syrian refugee crisis*. London: ODI. (2014).

WHO (2018). *WHO housing and health guidelines*. World Health Organization. Available at: https://apps.who.int/iris/handle/10665/276001

WRMCouncil (2021). *The economic impact of the Syrian refugee crisis in Lebanon*. Available at: https://www.unhcr.org/globalappeal2021/#

Zamani, M., and Zarghami, A. (2016). The refugee and immigration crisis in Europe: urgent action to protect the mental health of children and adolescents. *J. Adolesc. Health* 58:582. doi: 10.1016/j.jadohealth.2015.12.019

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EDITED BY
Elisa Pfeiffer,
Ulm University Medical Center, Germany

REVIEWED BY
Usama EL-Awad,
Bielefeld University, Germany
Sonya Faber,
University of Ottawa, Canada

*CORRESPONDENCE
Elin Sofia Andersson
✉ e.s.andersson@nkvts.no

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Navigating cultural transitions during resettlement: the case of unaccompanied refugee minors

Elin Sofia Andersson[1]* and Carolina Øverlien[1,2]

[1]Norwegian Centre for Violence and Traumatic Stress Studies (NKVTS), Oslo, Norway, [2]Department of Social Work, Stockholm University, Stockholm, Sweden

Introduction: Refugees face the process of cross-cultural transitions upon arrival in their host country. This process is commonly referred to as acculturation and can be particularly challenging for asylum-seeking children and adolescent unaccompanied by a caregiver. To more effectively facilitate unaccompanied refugee minors (URMs) resettlement, this study sought to obtain an enhanced understanding of the acculturation processes of these youth'.

Methods: Thus, interviews with 48 URMs, all of whom arrived before the age of 16 years, were analyzed in two steps. First, how the youth described their host country's society and culture, followed by how they navigated within this societal and cultural landscape during resettlement.

Results: The youth described how they navigated the Norwegian cultural and societal landscape by gaining cultural competence, adapting and finding ways to contribute, which made it easier for the youth to gain access to the society, to succeed as well as enhance their sense of agency. However, the youths also reported having to navigate between the expectations of their original and host country cultures, struggling with finding a balance between the two cultures.

Discussion: The youth' acculturation processes seemed to be the result of both their own needs, wishes and behavior as well as specific features in their host country culture, which supports the notion that acculturation processes to some degree are context- and culture-dependent. Knowledge regarding the cultural and societal framework that these youth face and how they navigate within it during resettlement is critical for identifying possible cross-cultural challenges and promoting positive developmental tracks. To understand more about acculturation and integration processes, future research should include specific cultural and societal features as well as immigrants' own perspectives and experiences during resettlement.

KEYWORDS

unaccompanied refugee minors, acculturation, integration, cross-cultural transition, asylum-seeking children and adolescents, post-migration factors, youth development

Introduction

As of the end of 2021, approximately 36.5 million children worldwide had been displaced as a consequence of conflict and violence (UNICEF, 2022). Due to the current crisis in Ukraine, the number of unaccompanied refugee minors (URMs) is likely to increase substantially worldwide. Children and youth traveling alone are often considered particularly vulnerable refugees, both during flight and after arrival in their country of resettlement. For URMs, cross-cultural transitions can be extra challenging and, in some studies, they are associated with mental health problems (Jore et al., 2020; EL-Awad et al., 2021). Due to the lack of parental

protection they are at a higher risk of experiencing stressful life events without the support from a caregiver to deal with these strains (Bean et al., 2007; Derluyn et al., 2010; Jensen et al., 2019; Pfeiffer et al., 2022). Studies report that URMs score significantly higher on internalizing problems, traumatic stress reactions and stressful life as well as having a higher risk for developing mental health disorders compared to both accompanied minors and native youth (Bean et al., 2007; Norredam et al., 2018; Müller et al., 2019). Furthermore, studies indicate that many URMs struggles with anxiety, depression and/or post-traumatic stress disorder even long after they are resettled (Vervliet et al., 2014; Jensen et al., 2019). Upon arrival, URMs face a double transition problem. They must re-establish their lives in an unknown culture as well as transition from adolescence to adulthood. As they are apart from their family during a crucial developmental period, URMs also need to establish new close relationships outside of their family (Andersson et al., 2021).

To the best of our knowledge, few studies on acculturation processes among URMs have included specific cultural characteristics and participants' own meaning making. Therefore, in this study, we explored these questions by examining how URMs who arrive before the age of 16 years re-establish their lives and start to function in Norway, a culture different from the one they were born in and socialized into. Our investigation was in line with the idea that immigrants' perceptions of their host country culture and society will affect their acculturation process as well as with the assumption that individual acculturation is a process executed by an agentic individual. Thus, we examined the following two research questions:

1. *How do the youth understand the Norwegian society and culture?*
2. *How do they navigate within this cultural and societal landscape during their first 5 years in Norway?*

Acculturation

Some of the challenges for URMs upon arrival are attributed to the process of resettling in an unknown society and culture. This cross-cultural transition process, commonly called acculturation, is described as positive in terms of possibilities and safety, but also distressing and challenging. Clashes of cultural worldviews, culture shedding, ethnic identity confusion, religious differences, and discrimination have been highlighted as demands that refugees may face during their early resettlement years (Ryan et al., 2008; Andreouli, 2013).

According to Chirkov (2009) is individual acculturation a process executed by an agentic individual after entering a different cultural community. How people face this process of confluence among heritage-cultural and receiving-cultural practices, values, and identifications is commonly called their choice of acculturation strategy. However, the resulting acculturation strategy is not always chosen voluntarily. For some people it is rather a result of lack of other possibilities. According to the well-known two-dimensional model by Berry (1997), there are primarily four strategies for acculturation: assimilation, segregation, marginalization, and integration. Assimilation is where immigrants adapt to the majority culture at the expense of their original cultural identity. Segregation is where immigrants hold on to their original culture and do not interact with the majority culture, either by choice or not being given the possibility. Marginalization is where little possibility or interest exists in engaging in either the original or host country's culture. Integration, seeking both cultural maintenance and involvement with the larger society, is the acculturation strategy associated with the best psychological outcomes (Berry et al., 2006).

Acculturation research has been criticized for mainly studying acculturation as a series of stable and mutually exclusive outcomes and not a dynamic process. Another criticism is its lack of inclusion of the diversity of migrant experiences, resulting in decontextualized and acultural accounts of acculturation (Ward, 2008; Bhatia and Ram, 2009; Andreouli, 2013). No culture is a single entity. People within the same society each create their own "personal culture" depending on how they understand their experiences and surroundings (Gamsakhurdia, 2019). Accordingly, to obtain more insights into acculturation processes, it is essential to explore how specific cultural characteristics, immigrants' own understanding, and their positioning in their host country's culture affect the process (Chirkov, 2009; Andreouli, 2013; Gamsakhurdia, 2018).

Adaptation during resettlement

Several studies have explored cultural differences between original and host country cultures. The most commonly positive aspects refugees, also URMs, highlights in resettlement cultures are safety, democracy, and work opportunities (Andreouli, 2013; Woodgate and Busolo, 2021). For example, Sudanese URMs in the United States considered grasping the opportunities for education and work to be important (Luster et al., 2010).

Furthermore, many immigrants and refugees report that acquiring language and cultural competence is necessary to integrate into and participate in society. Doing so creates a better future for them and their families, which is possible through the facilitation of economic opportunities and work prospects (Luster et al., 2010; Andreouli, 2013; Fedi et al., 2019; Woodgate and Busolo, 2021). However, several studies have reported that immigrants experience the process of adaptation to be unbalanced. Immigrants have described that they alone were expected to adapt, and that their own willingness and effort were the keys to meeting the demands in the receiving society (Fedi et al., 2019; Woodgate and Busolo, 2021). Furthermore, some studies have reported that being different leads to exclusion. To be a part of a society, some immigrants adjust by copying the majority's behavior while repressing the need to hold on to their original cultural identity (Fedi et al., 2019; Brook and Ottemöller, 2020).

Moreover, studies on URMs have demonstrated how they immigrants work hard to be involved in their host countries by creating supportive networks and developing cultural competence. Increased host-cultural competence in combination with support from one's family abroad and the possibility to maintain one's culture of origin are associated with fewer mental health problems and post-migration stress among these youth (Oppedal and Idsoe, 2015; EL-Awad et al., 2021). By contrast, acculturation-specific hassles, such as discrimination, feeling unsafe, and uncertainty about the future, are associated with mental health problems among URMs (Keles et al., 2016; Jensen et al., 2019). However, increased cultural competence seems to reduce discrimination levels against URMs (Oppedal and Idsoe, 2015; Jore et al., 2020).

Pull and push between opposing cultural demands

In spite of many positive consequences of adapting to their host country cultural, many immigrants reports challenges during their cross cultural transition. For example, several studies report immigrants experiencing that their position in relation to both their original and host community are questioned during resettlement, and some are left in a position somewhere in between (Bhatia and Ram, 2001; Märtsin and Mahmoud, 2012). Subsequently, many experience ethnic identity confusion and a need to renegotiate their social representations and identities within these two positions, including a re-evaluation of cultural norms and assumptions about one's belief systems and habits (Bhatia and Ram, 2001; Andreouli, 2013; Belford, 2017).

In particular, immigrant youth have reported tensions emerging from conflicting and opposing cultural demands and expectations between their original and host country's ways of living (Brook and Ottemöller, 2020; Woodgate and Busolo, 2021). For example, Woodgate and Busolo (2021) reported that immigrant youth have a stronger desire than their parents to adapt to Canadian culture. Subsequently, they struggle to find a balance between these two cultural practices and experience a sense of pull and push in regard to wanting to please both their families and Canadians. This results in them not knowing whether they should keep their culture of origin, adopt the Canadian culture, or develop their own.

However, several studies have reported that immigrants face identity challenges with agency and creativity, change between positions depending on arenas or periods of their lives, create new identity positions, and/or resist being categorized. It seems as though youth are particularly likely to develop their identity by combining their ethnic differences, social networks, bilingualism, and transnationalism in several ways (Andreouli, 2013; Fedi et al., 2019).

Methods

Recruitment and participants

The data in this article came from a longitudinal study of URMs where all youth arrived in Norway before the age of 16 years (mean age 13.8 years). They were upon arrival placed in care centers for the youngest URMs provided by the State Child Protection Service. The participants were recruited from five of six of these care centers while waiting to be settled or returned [see Jensen et al. (2015) and Jensen et al. (2019) for a more detailed description of the original study]. Upon being granted asylum, the participants were moved into different municipalities. Here, they were often placed together with four to six other URMs in apartment units attended to by social workers. Some youth were placed in foster homes.

Qualitative interviews were conducted at two time points, namely approximately 2.5 and 5 years after arrival. Of the 95 participants in the original study, 48 youth were found and gave consent to being interviewed at both time points. The mean age of the participants at these two time points was 16.5 and 20.0 years, respectively. Furthermore, 40 (83.3%) were boys, reflecting a typical gender imbalance among URMs. The youth came from Afghanistan, Eritrea, Somalia, Sri Lanka, Ethiopia, Uzbekistan, The Democratic Republic of the Congo, Western Sahara, Chechnya, and Iraq. The majority of the participants came from Afghanistan (47.9%). All 48 youth who participated at these two time points were included in this study.

Interviews

Open-ended semi-structured interviews were conducted in person, mainly in the participants' homes. The interviews at the first time point concerned topics related to the interviewees' childhood, flight, present situation, and hopes for the future. The same topics were covered during the second interview but with a stronger focus on the interviewees' experiences of living in Norway and their present situation, friendships, aspirations, social support, well-being, agency, daily stressors, and identity. All 48 interviews were audio-recorded and transcribed verbatim. All of the youth were offered a translator, but all chose to conduct the interviews in Norwegian.

Thematic analysis

To investigate the two research questions two different analytical steps were taken. First the interviews were analyzed according to thematic analysis and next using interpretive phenomenological analysis. To explore how the youth themselves understood and described the culture and society of Norway, interview transcripts with all 48 youth from both time points were analyzed using thematic analysis. Thematic analysis is a reflexive method that seeks to develop patterns (themes and categories) across cases. It is suitable for research on understudied topics and populations (Braun and Clarke, 2006; Braun and Clarke, 2021). To the best of our knowledge, few studies have included specific cultural characteristics when studying acculturation processes amongst refugee youth. Furthermore, although some literature has described the Nordic culture, few studies have explored how immigrants experience this culture and society. Subsequently, the thematic analysis helped us to capture the range of themes that the participants raised without limiting them to a particular theoretical perspective.

Both authors separately read and re-read all interviews and assigned codes to the transcripts. A search for patterns among the codes resulted in initial themes. These were refined through discussion, resulting in themes that presented similar topics, each of which contained several subthemes. The interviews from both time points were analyzed separately, making it possible to distinguish any potential differences due to the time in Norway. Furthermore, the numbers of youth reporting each theme and subtheme were also noted.

Interpretative phenomenological analysis

The results of the first analysis provided us with an understanding of the societal and cultural landscape that the youth had to relate to during resettlement, as seen from their own perspectives. Considering that individual acculturation is a process executed by an agentic individual (Chirkov, 2009), our second research aim was to understand more about how the youth navigated within this landscape. Navigation, as understood by Ungar (2008, 2011), implies personal agency and motivation, as well as movement toward psychological, social, cultural, and physical resources that are required and are made

available and accessible by those in power to those who are disadvantaged. The transcripts of the interviews with all 48 youth at the second time point were analyzed according to the traditional steps in interpretative phenomenological analysis (IPA) (Smith et al., 2009). At this second time point, 5 years after arrival, the youth had the possibility to look back at their time in Norway and reflect upon the process. IPA is a qualitative analysis method that examines how people make sense of major life experiences by exploring them. The researcher attempts to make sense of how the participants have made sense of their experiences, which is called the double hermeneutic (Smith et al., 2009). The second analysis aimed to grasp the participants' own understanding and meaning making of how they navigated during resettlement. In line with this, the use of the double hermeneutic and interpretation according to IPA were considered useful for reaching, hearing, and understanding the experiences of participants, but without directly asking them about navigation among their host country's features.

The first author took the lead in this analysis. Each transcript was read and re-read while descriptive and interpretative notes were made. Each reading focused on exploring and identifying how the youth navigated among the societal and cultural features identified in the first analysis. In this regard, the results of the thematic analysis were used as a framework of the particular cultural society that the youth had to relate to during resettlement. The interviews were first analyzed vertically one at a time, followed by horizontally across interviews. The notes taken were developed into emerging themes for each participant before patterns and connections were searched for across all participants. The final themes were named to reflect their conceptual nature and mirror the youth' words and thoughts as well as the researchers' interpretations. The first author analyzed all of the interviews. The second author read all of the interviews and analyzed randomly selected ones to reduce interpretative bias in the analysis (Hill et al., 2005). The analyses were then compared, any disagreements were discussed, and a consensus was reached.

Ethics statement

This study was approved by the Regional Committees for Medical and Health Research Ethics and has therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. All youth gave their informed written consent prior to their inclusion in the study. For those under the age of 16, written informed consent was also provided by their legal guardian. All audio recordings and transcriptions were stored in a secure data storage system only accessible to the researchers. Direct quotations were translated and used as examples to illustrate the participants' perspectives. All names were altered and details that might disclose the identity of the subjects under study have been omitted to ensure confidentiality.

Results

How do the youth understand the Norwegian society and culture?

The first analysis, which explored how the youth understood the culture and society of Norway, resulted in the following four themes: *Children's Rights, Political Principles, Family Relations & Development,* and *Attitudes*. Each theme contained several subthemes. All themes and subthemes present at the first interview were also present at the second interview, whereas some subthemes were only present at the later time point. The findings for each theme are presented in the following subsections. See Figure 1 for a graphical presentation of the themes and subthemes along with quotations for each subtheme.

Children's Rights

The two subthemes of *Right to Attend School & Leisure Activities*, and *Physical Punishment Being Illegal* constituted the main theme of *Children's Rights*. Regarding *Right to Attend School & Leisure Activities*, a majority of the youth at both time points highlighted that attending school was not only possible but also mandatory. This was often discussed in contrast to the situation in their countries of origin, where school access was highly limited. Those youth who at the second interview had finished high school talked in hindsight about how important it had been to receive an education and what opportunities it had given them. The youth also highlighted their right to participate in leisure activities, and in that regard being children. In regard to *Physical Punishment Being Illegal*, a majority of the youth described experiencing violence from caregivers and/or teachers in their country of origin. After arrival in Norway, the youth expressed that they had felt disbelief but also a great relief that no physically punishment was allowed.

Political Principles

The theme *Political Principles* entailed the two subthemes of *Democracy & Equality* and *The Welfare State*, both of which were present at the first and second interviews. A few youth in the first interview elaborated on what they experienced as democratic values, such as equal rights and that the state and politicians can be trusted. In the second interview, even more youth described their experiences with democratic values in Norway. Features such as individual freedom, human rights, political and religious freedom, as well as equal rights independent of gender, ethnicity, and sexual orientation were highlighted.

Included in the subtheme of *The Welfare State* were the youth' descriptions of their basic needs, such as clothes, food, housing, and access to health care services, being provided and facilitated by the state. Receiving so many benefits seemingly out of nowhere created a sense of being valued and cared for. However, bureaucratic processes were also described as exhausting and frustrating. A few youth had experienced how crucial decisions were made without them having a say or that their wishes had not been heard or respected, such as where to live and who to live with. Others had experienced responses to their applications, such as residence permit, financial help or a place to stay, taking a very long time, leaving them to agonize over time.

Family Relations and Development

The following three subthemes were included in the theme *Family Relations and Development*: *Follow-up*, *Expectancy of Independency*, and *Low Responsibility for Extended Family*. The subtheme of *Follow-up* was present in the interviews at both time points, although more youth talked about it during their second interview. Social workers and foster parents were described as providing comfort, help, support, and guidance toward managing daily life, but also as setting strict rules and limits. Setting limits was often frustrating for those youth who had lived very independent lives. A majority of the youth had to take care of themselves for a long time during their escape, and/

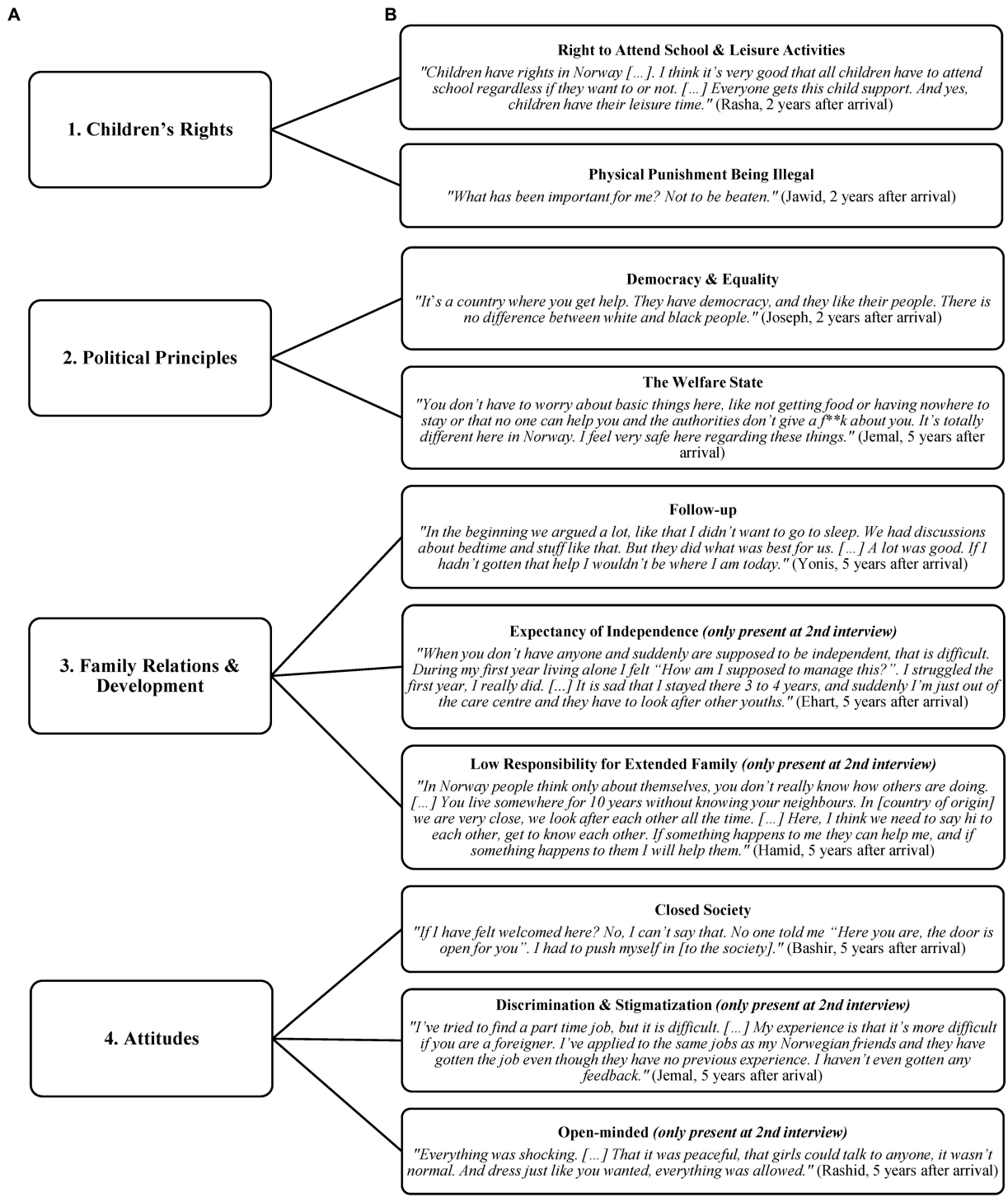

FIGURE 1
A graphical presentation of the results from the thematic analysis which explored how the youth understood the Norwegian society and culture. The four themes **(A)** are presented to the left and the subthemes **(B)** to the right along with quotations for each subtheme.

or they were given greater responsibility in their countries of origin, such as working to help provide for their families or looking after younger siblings.

Descriptions related to the subtheme of *Expectancy of Independency* were primarily present in the second interviews. Five years after arrival, a majority of the youth described having experienced a strong expectancy of being independent when they reached their legal age. The youth described how they went from receiving much help to almost none, and also how difficult it was to suddenly manage everything by themselves. However, a few youth talked with pride about how they had learned everything they needed to be independent and able to fend for themselves.

The subtheme of *Low Responsibility for Extended Family* was only present in the youth' stories in the second interviews. This subtheme entailed the youth' experiences with people in Norway having scant responsibility for other people in their local community, such as family, extended family, and neighbors. These youth missed and longed for a sense of belonging to a greater network with those closest around them, where people looked after and helped each other if required.

Attitudes

The following three subthemes were included in the theme of *Attitudes*: *Closed Society*, *Discrimination & Stigmatization*, and *Open-mindedness*. In regard to the subtheme of *Closed Society*, youth at both time points reported how they experienced Norwegians as closed in regard to being hesitant or not interested in interacting and establishing new relations. This made it difficult for the youth to make friends and create a network.

In regard to the next subtheme, it was primarily during the second interviews that the youth described both indirect and direct experiences related to being discriminated against and stigmatized. A few youth reported receiving racist verbal abuse in public or being treated differently by public officials such as health workers and the police. A majority of the youth described that they had experienced a general skepticism toward immigrants, resulting in them experiencing difficulties in obtaining a job, for example.

The subtheme of *Open-mindedness* entailed the youth' experiences with Norwegians being more liberal, primarily in regard to relationships, showing affection in public, gender roles, and codes of dress and behavior. In particular, women were described as being freer to dress and behave as they wanted, but men also experienced more freedom in regard to choosing their own clothes and hairstyles.

How did the youth navigate in this landscape during their first 5 years in their host country?

The participants in this study were young adolescents when they came to Norway. It was this particular cultural society, as presented in the first analysis, that they had to relate to during resettlement and their critical period of transition between childhood and adulthood. In line with the idea that individual acculturation is a process executed by an agentic individual after meeting and entering a new and different cultural community, we asked the question: *How did the youth navigate in this landscape during their first 5 years in their host country?* The analysis resulted in the following three themes that were all keys to a fruitful acculturation process during these first years: *Succeeding by Understanding and Adapting*, *The Importance of Contributing*, and *Balancing Between Expectations*. In the following subsections are the findings for each theme presented along with selected quotes.

Succeeding by Understanding and Adapting

A majority of the youth expressed being overwhelmed by the huge differences between their original and host country culture upon arrival, and many struggled with this cross-cultural transition. Despite this, all of the youth in this study were set on succeeding, which ultimately meant being a part of the society in terms of having friends and being self-supportive through work. These ambitions were a significant driving force when navigating during resettlement. A majority of the youth, such as Akmal, soon realized that understanding and adapting to the culture was crucial for achieving their goals:

> "You need to understand the society and walk that path. If you behave just like in [country of origin], that doesn't work in Norway. It's very important to understand the Norwegian culture." (Akmal, 5 years after arrival)

In this study, the youth described several features of their host country's society that aided them in achieving their goals. For example, being provided with basic needs such as housing, food and clothing as well as free schooling meant that they could focus on their education instead of having to work (subthemes *Welfare State* and *Right to Attend School & Leisure Activities*). Receiving an education was critical for all of the youth, who viewed it as the primary gateway to their goal of succeeding through work. However, attending school was not always that easy. Upon arrival, none of the youth knew the local language and a majority had scant schooling, making attending the same classes as their peers challenging. Furthermore, a majority of the youth had experienced violence from teachers prior to their arrival. A few youth said that initially upon arrival they did not want to attend school as they were scared of being hit. Reassurance that they would not receive physical punishment helped them to acquire a sense of safety in school (subtheme *Physical Punishment Being Illegal*). Furthermore, hard work was crucial for achieving their goals, as was their willingness to use the opportunities and help provided by those around them (subtheme *Follow-up*).

On their way to becoming adults in Norway, the youth leaned on the systems of care and legal rights for children. However, they described some features of their host country's society as making the achievement of their goals more difficult. A majority of the youth reported that it was especially crucial to understand and navigate prejudices, discrimination, and Norwegians being careful in establishing new relations (subthemes *Closed Society* and *Discrimination & Stigmatization*). For example, understanding this hesitancy as a cultural feature made it easier to not take it personally. It was also helpful in realizing how to navigate this, as Asiba described:

> "I thought in the beginning that people were really ignorant. Because where I'm from, if you are new, people will come to you and talk to you so you won't feel alone. […]. But here, you need to do it yourself, no one will come to you." (Asiba, 5 years after arrival)

Like Asiba, other youth realized that they themselves needed to engage and take the initiative to get in contact with people and make new friends. However, part of their navigation also involved realizing the right balance between initiating contact and appearing too pushy, as was exemplified by Akmal as follows:

> "I've changed a lot. I used to be very open, just talking about anything. But you can't do that in Norway. For example, once when I was out with friends I said hi to someone. He got really angry: "Do you know me?". I didn't mean anything bad, I just like to talk to people. […] But I learned and I've changed, I've become

> Norwegian. I've become integrated and I understand the society. I adapt, but the old personality is still there inside me." (Akmal, 5 years after arrival)

As portrayed by Asiba and Akmal, these youth needed to tread carefully to fit in, taking initiative but not being overly assertive. Finding the right balance and adapting their behavior accordingly made it easier to make friends. Making local friends was nevertheless still described as challenging.

In addition, the youth reported being treated negatively and differently because they were foreigners (subtheme *Discrimination & Stigmatization*). The most common events reported were being met with a general skepticism and prejudices because of their ethnicity, having more difficulties gaining a job compared with their local peers, and receiving stigmatizing comments. A few youth even reported having racist abuse yelled at them in public. These experiences made it challenging for them to make friends as well as to find a job. A majority of the youth discussed how they navigated these situations by trying not to care, being like those around them to fit in better, and working very hard and not giving up until they had reached their goals. Faraz described how getting a job had been very difficult for him compared with his local friends, but how he had continued trying until he achieved his goal:

> "I think that when I want something, I'll never give up. […] I remember the first time I applied for a job. It was really difficult, and I had to continue trying. Every day after school, I asked to talk to the manager if there were an opening. And when you show a lot of interest, you will eventually succeed." (Faraz, 5 years after arrival)

After gaining cultural competence and adapting to the majority's behavior, a majority of the youth reported experiencing greater possibilities to make friends and find a job. However, adjusting their ways of being was for some youth inevitably followed by having to repress their own cultural identity more than they actually wished to.

The Importance of Contributing

A wish to help other people and contribute to society was evident in a majority of the youth' stories. Throughout their flight and resettlement, all youth had experienced being in a vulnerable position. Upon arrival in Norway, the youth were provided with basic needs such as food and housing, free schooling, as well as help and support from social workers (subthemes *Right to Attend School & Leisure Activities*, *Follow-up*, and *Welfare State*). Receiving all of these goods for free, without people knowing them or wanting something back, was surprising and strange, and they could almost not believe it. Furthermore, with time in Norway, the youth experienced the government as trustworthy and aiming to help the country's inhabitants (subtheme *Democracy & Equality*). In the analysis, it became evident how much the youth appreciated and were grateful for these things. In their efforts to be part of the society, they worked hard to find ways to give back and help others. As exemplified by Ahmed, one way of doing this was to focus on working and paying taxes so that others would have the same benefits as he had been given:

> "My goal is to help those that helped me. I'm thinking, they paid taxes so that I could go to school, see the doctor and everything like that. So now, those who paid taxes will get help from me." (Ahmed, 5 years after arrival)

Other youth engaged in volunteer work. Thabo was only 19 years old when he applied to the local firefighter team, and to date he remains the youngest member to be recruited:

> "I like contributing to society. I volunteer to coach children soccer in [town]. Now, I also volunteer at the local fire station since they needed people. I was thinking, I live here, I play soccer here, my friends are here, so why not?" (Thabo, 5 years after arrival)

By paying taxes and participating in voluntary work, the youth experienced that they were appreciated and an important part of society. Navigating toward giving back to society and helping others turned out to be crucial keys into the Norwegian society. Moreover, being able to also contribute was critical for the youth' own sense of agency.

Balancing Between Expectations

The third theme that evolved during the analysis of how the youth navigated in the described landscape during resettlement was how to balance between different expectations, both within and between their original and host country cultures. As presented in the first theme, gaining cultural competence and adapting their ways of being were not only crucial to succeed but also important keys for gaining access to the society. However, when adapting, the youth risked negative reactions from people from their culture of origin. Maher described how he had experienced this balancing struggle:

> "The way of living in [country of origin] and in Norway, which should I choose? How should I balance it? […] If you do something typically Norwegian, people from [country of origin] will say "Oh, so he has become Norwegian?" At the same time, Norwegians wants us to adapt to Norway. If you do like Norwegians wants, people in [country of origin] will be dissatisfied. Now I'm thinking, I don't belong anywhere. […] I've become in between." (Maher, 5 years after arrival)

As exemplified in Maher's story, a majority of the youth needed to navigate the different – and often conflicting – expectations from their original and host country cultures, but it was often impossible to satisfy both. On the one hand, adaptations seemed to be necessary to function in their everyday lives in Norway. On the other hand, adjusting their ways of being inevitably led to moving away from their culture of origin and risking being rejected. As a result, the youth found themselves being pulled in two different directions simultaneously and they struggled to find a balance between these two positions. At worst, this led to a feeling of not belonging anywhere. Although a majority of the youth did not report feeling totally excluded from both cultures, all of them had to reflect upon how to navigate between the expectations of their society and culture of origin and their host country's culture and society. While some youth felt a greater belonging to their culture of origin, others felt that Norway had become their home country. Like Ehart, some resolved this dilemma of navigating between two different cultures by combining them to create their own culture:

> "There are many good things in the Norwegian culture. And then I have my own culture as a role model. I pick some things and put in the Norwegian culture, mixing them for myself." (Ehart, 5 years after arrival)

As reflected in Ehart's story, a critical part of this process all youth had to go through was to reflect upon which behaviors, values, and norms to keep; which to let go of; and which to embrace; and ultimately how to combine them. Some societal and cultural features in Norway, such as school being accessible for all, no physical punishment, and everyone having equal rights (subthemes *Right to Attend School & Leisure Activities*, *Physical Punishment Being Illegal*, *Democracy & Equality*, and *The Welfare State*) were embraced by a majority of the youth. However, in contrast to the subtheme *Low Responsibility for Extended Family*, most youth worked hard to keep and create a sense of mutual responsibility toward those around them. These efforts could entail maintaining close contact with and feeling responsibility toward their family and/or working to establish a sense of mutual responsibility in their local area with friends and neighbors.

Moreover, a majority of the youth reported being exposed to violence at home and/or in school before arrival (Jensen et al., 2019). Arriving in Norway, they learned that hitting children and youth is harmful and thus illegal, which brought a sense of relief (subtheme *Physical Punishment Being Illegal*). However, this knowledge also created a discrepancy for those youth who described receiving love from their parents despite being physically punished. They experienced that it was done with the best of intentions, specifically to teach them the difference between right and wrong. In light of this knowledge, these youth needed to make sense of their previous experiences. In Samir's meaning-making process, he compared the conditions for raising children in his culture of origin with those in his host country's culture:

> "In Norway, you grow up the right way, learning what to do and not without being beaten. But it wasn't like that where I am from. […] They don't have the education to teach children the right way, so they use the knowledge they have, and that is physical punishment. […] I try to explain that they shouldn't do that […] that there is other ways than beating […] I try to show the right way." (Samir, 5 years after arrival)

While acknowledging that what his parents did was wrong, Samir also acknowledged that they had the best of intentions and did the best they could based on their knowledge at the time. Furthermore, he described how he attempts to pass his new knowledge along to his parents in an effort to ensure that his siblings do not have to experience what he did.

Another issue during resettlement that the youth highlighted was navigating between close help and support for children and adolescents and the expectation of managing by oneself after becoming an adult (subthemes *Follow-up* and *Expectancy of Independency*). As the youth arrived in Norway in their early adolescent years, the cultural features making sure they had close help and support were often described as vital for being able to re-establish and succeed in their host country. However, the type and degree of help and support that they received, and especially all the rules and limits, were to some extent also experienced as frustrating and making no sense. Thus, navigating such situations often ended in arguments and fights, as depicted by Arman as follows:

> "I argued a lot with them over everything they said no to. I thought they were mean. […] I thought, I've managed to get through so many countries on my own, and today he says I can't be out until 11 pm. Then I thought he was just being mean." (Arman, 5 years after arrival)

Instead of feeling supported and cared for, some youths felt mistrusted and mistreated, which induced a feeling of lost agency among the youths. Many struggled with balancing between both wanting and needing close follow-up to be able to move forward with their lives and at the same time experience some of it as excessive and belittling. In some ways, navigating this type of close follow-up goes hand in hand with the expectation of being independent once one becomes an adult (subtheme *Expectancy of Independency*). The transition from adolescence to adulthood was sometimes described as challenging and characterized by a sudden shift from much help and support to suddenly having to manage on one's own. In addition, the youth experienced little help or support from their local communities (subtheme *Low Responsibility for Extended Family*), leaving them with a feeling of being on their own. Jawid described how he navigated this situation:

> "I need to work hard, I can't go to school just for fun. I need to study and move forward, because they will eventually say goodbye. And that is what I did. I did my homework, exercised to be healthy, and asked a lot about rules and the system. Learned as much as possible from them." (Jawid, 5 years after arrival)

As exemplified by Jawid here, by using the help and support provided (subtheme *Follow-up*), the youth navigated these circumstances by working hard to prepare for this transition by gaining sufficient knowledge and acquire the skills and knowledge necessary to manage everyday life on his own.

Discussion

With this study, our aim was to obtain an enhanced understanding of URMs' acculturation processes during resettlement from the youth' own perspectives. This was done by first analyzing interviews with URMs on how they understood the Norwegian society and culture and thereafter how the youth navigated within this cultural and societal landscape.

Norway is one of five countries in the Nordic region. Often highlighted as core elements in these countries are a universal welfare state, egalitarian values, a strong and liberal democracy with strong civilian, and especially children, rights (Hvinden, 2009; Doksheim, 2011; Doksheim, 2017). Several of the themes and subthemes highlighted in the youth' descriptions of Norway were in line with research describing the Nordic countries. In that regard, they were not surprising. However, culture is not a single thing, and people within the same society can experience different cultural characteristics (Gamsakhurdia, 2019). In line with this, the themes and subthemes presented in the first analysis can be regarded as representing how these particular youth as URMs in transition from adolescence to

adulthood experienced their host country culture and society during their first years of resettlement. Considering that being a part of a culture and a society is based on each individual's understanding of that culture, these results were an important foundation for the second analysis, which focused on how the youth navigated within this particular landscape.

In the second analysis, it became evident that *how* the youth in this study navigated during resettlement in some ways was reliant upon specific features in their host country culture. For example, finding the right balance between taking initiative to contact and not being too outgoing seemed to be critical behavioral adjustments for making friends. However, this particular balance would probably not be a crucial adjustment in countries where being careful about establishing new relations is not such a strong norm. Furthermore, the youth experienced that navigating toward paying taxes and volunteer work were keys into the Norwegian society. This is in line with the long tradition in the Nordic countries of a welfare state and a high degree of trust that paying taxes will benefit the inhabitants (Doksheim, 2011; Andreasson, 2017).

Together, the two analyses in this study provided an impression of these particular youth' acculturation processes, considering their subjective experiences regarding specific host country societal and cultural features as well as the youth' experiences with navigating among them. According to the results, the youth' acculturation process entailed both possibilities in the form of heightened safety, work, and education, but also challenges such as how to become a part of the society and where to belong. In light of this, this section further elaborates on the youth' experiences regarding integration and agency during their resettlement.

Integration and acculturation

As became evident in the second analysis, a majority of the youth experienced that seeking involvement with the Norwegian society by gaining cultural competence, adapting, and contributing made it easier to gain access to the society and succeed. The youth' aspiration toward gaining cultural competence and engaging in activities that facilitated opportunities for work and a better future is in line with research literature. Both youth and adult immigrants, also URMs, have expressed the importance of engaging to understand and gain knowledge about their host country's culture (Luster et al., 2010; Oppedal and Idsoe, 2015; Fedi et al., 2019; EL-Awad et al., 2021; Woodgate and Busolo, 2021). Andreouli (2013) reported that cultural competence and adjusting their behavior, among other things, increased immigrants' chances to participate in the society, thus facilitating opportunities for work and a better future. In this study, the youth strive toward and, at least for many, succeeding in being part of the society by adjusting and contributing is contradictory to how immigrants and refugees, and especially non-Western migrants, often are portrayed in the media. Media news on immigration is often negative, focusing on immigrant and refugees physical, economic and cultural threats to host societies and how their values and norms are incongruous with their host societies (Esses et al., 2013; Eberl et al., 2018; Cengiz and Eklund Karlsson, 2021). The findings in this study seems to support the notion that non-European immigrants can integrate well into Western cultures. Although the youth repeated efforts to gain access to the Norwegian society should not be underestimated, cultural adaptation can in some ways be easier for youth, considering that their identities are not so established and that they have more educational and socialization opportunities (Pumariega and Rothe, 2010; Cheung et al., 2011). Integration, seeking both cultural maintenance and involvement with the larger society, is the official political aim in the Nordic countries when receiving migrants and refugees (Nordisk Ministerråd, 2020; IMDI, 2022; Nordic Co-operation, n.d.). This is also the acculturation strategy associated with the best psychological outcomes (Berry et al., 2006). By contrast, the youth in this study occasionally experienced little room for actual cultural maintenance due to some societal and cultural features in Norway. Furthermore, they experienced that integration according to the society of Norway is to a large extent conditional on their ability or willingness to adjust their ways of being. Other studies have reported similar experiences of adjustment expectations, with immigrants sometimes having to adjust to such an extent that it is difficult to hold on to their original identity and culture (Fedi et al., 2019; Brook and Ottemöller, 2020; Woodgate and Busolo, 2021). In this regard, the expectation of a high degree of adjustment might be present across different host countries and immigrant age groups, not only in Norway. However, having to adjust to such an extent that one must let go of one's original culture is not in accordance with the concept of integration, which entails both cultural maintenance and involvement with the larger society. This seems rather more like being pushed into the acculturation strategy of assimilation, which includes seeking belonging to the majority culture without maintaining one's original cultural identity (Berry et al., 2006).

In addition to the necessity to adjust and adapt, the youth had to relate to expectations of holding on to their culture of origin, as was evident in the theme *Balancing Between Expectations*. Consequently, they struggled to find a balance between expectations from their original and resettlement societies. This is in line with several studies that have described immigrant youth experiencing tension from conflicting demands from their original and host country cultures, resulting in a sense of pull and push (Ryan et al., 2008; Brook and Ottemöller, 2020; Woodgate and Busolo, 2021). Wanting to please both resulted for some of the participants in this study in not knowing whether they should keep their culture of origin, adopt that of their host country, or develop their own, which is in line with (Woodgate and Busolo, 2021). That the youth had to struggle – and sometimes choose – between these two cultures is not in accordance with the concept of integration. Furthermore, the youth experiencing these conflicting demands is concerning considering that research has indicated that host-culture competence together with maintenance of one's culture of origin and support from family abroad are associated with fewer mental health problems and less post-migration stress (Oppedal and Idsoe, 2015; EL-Awad et al., 2021). Discussions about resettlement and integration are most often held from the host country's perspective. However, the youth experiences with adapting, integrating and balancing between expectations highlights the importance of also including immigrants' perspectives and experiences in such discussions. Doing so will provide valuable information regarding the possibilities and limitations in acculturation processes as well as the host country's responsibilities.

As presented, the youth' stories also highlighted features that made integrating more difficult. For example, they experienced getting in contact with locals as more difficult and they were exposed to prejudices and rejection due to their race and ethnicity (subthemes

Closed Society and *Discrimination & Stigmatization*). The youth' experiences with discrimination were only present in the second analysis. This may be related to individual challenges they faced as they grew older in combination with different social and cultural features in Norway becoming more or less salient depending on their age. For instance, in Norway, there is a strong cultural ideal that children and youth should be protected and taken care of (Hvinden, 2009, Doksheim, 2011, 2017). Providing refugee children education and safe housing, preferable in a stable home, does thus not create discussions or protests in Norway because it is seen as a child's rights. Although being minor at the time of the first interview, most participants had by the time of the second interview, 5 years after arrival, reached legal age and were thus considered as adults. Many had finished mandatory schooling and were applying for jobs. In other words, they were in the midst of transitioning into adulthood. It was at this time in their life and while facing these new life circumstances many of them reported experiencing discrimination. Adult refugees in Norway are not as protected by the social and cultural features of children's rights as minor refugees are. For the youth in this study, it seems like they, 5 years after arrival, were confronted with prejudices and stereotypes as other adult migrants in Norway. Although structural racism is present in Norway as in many other European countries, it seems as if minor refugees, and maybe unaccompanied in particular, have a window of opportunity when they first arrive and (still) are protected by the strong cultural ideal of children having rights of their own and needing protection. If they during this time learn important keys to become a part of the society, integration may become easier than for adult refugees. However, this does not mean that minor refugees do not face racism and discrimination. For example, the youth in this study reported already at the first interview that they experienced Norway as a closed society, and subsequently that it was difficult to get Norwegian friends. As they grow older they may understand and interpret this as a form of racism. While acculturation-specific hassles such as discrimination are associated with mental health problems among URMs is increased host country cultural competence associated with less discrimination (Keles et al., 2016; Jensen et al., 2019; Jore et al., 2020). For the youth in this study, this is an indication of the potential consequences of experiencing and navigating features in the subthemes of *Closed Society* and *Discrimination & Stigmatization,* and the importance of understanding and adapting. Furthermore, closely linked to the issue of discrimination as well as to class and gender, is the issue of race. Considering that the type of racial discrimination an immigrant experiences depends on an interaction between their different social identities, Ball et al. (2022) suggests that an intersectional approach is important to fully understand the complexity of discrimination against minority persons. With this perspective, one might capture the complexity of how racism is intertwined with other forms of discrimination such as gender, age, class, sexual orientation and origin. In future studies, an intersectional approach would be fruitful to even better capture the complexity of types of discrimination URMs experiences.

In sum, the youth reported several societal and cultural features that made integrating more difficult, but also features in Norway that made resettlement easier (e.g., features present in the subthemes *Right to Attend School & Leisure Activities*, *The Welfare State*, and *Follow-up*). It might be that some societal and cultural features in Norway facilitate integration on a structural level while some hinder it on a more interpersonal level. In light of this, it is evident that these youth' acculturation processes occurred in the context of both their original and host country societies and cultures and the possibilities and limitations imposed by these surroundings. In this regard, the type of acculturation strategy and being integrated are not only up to the youth themselves. This supports the notion that acculturation processes are context- and culture-dependent, as has been argued by Bhatia and Ram (2009) and Ward (2008). Furthermore, the youth' understanding of Norway changed with time. In light of this, it seems as these processes are ongoing and to some extent change with time and developmental needs, which indicates that acculturation processes are dynamic (Ward, 2008; Bhatia and Ram, 2009). However, acculturation processes also seemed to a large extent to be affected by the youth themselves, their needs, and their wishes. The youth' agency during transition is discussed in the next section.

Agency in transition

In line with research literature, a majority of the youth in this study reported how they upon arrival struggled with the cross-cultural transition and the huge societal and cultural differences (Ryan et al., 2008; Andreouli, 2013; Jore et al., 2020; EL-Awad et al., 2021). In spite of this, agency and creativity were evident throughout the youth' acculturation processes when they navigated the Norwegian societal and cultural landscape. For example, they repeatedly observed, imitated and would not give up until succeeding in their efforts to gain access to the society through contributing, understanding and adapting.

Furthermore, as presented, the youth needed to balance between expectations from their original culture and host country cultures. Several studies indicate that immigrants, particularly youth, face this balancing with agency and creativity; for example, they change between positions, combine identities, or create new ones (Andreouli, 2013; Fedi et al., 2019). This is in line with the youth in this study. Although challenging, a majority faced this sense of pull and push between the two cultures with agency, hard work, and creativity, finding a way to be a part of both cultures. In accordance with Belford (2017), they re-evaluated cultural norms, belief systems, and habits, and tried to combine different parts of the cultures, making their own (Belford, 2017). Creating their own culture is in line with the study of Luster et al. (2010), in which URMs in the United States reported combining the best aspects from their Sudanese culture with the best of American culture. These processes were nonetheless described as challenging, and a feeling of never being good enough for both cultures sometimes emerged. These experiences are in line with relevant literature. Ethnic identity confusion and a sense of being in between have been described as common during acculturation, resulting in immigrants often having to renegotiate their identities (Bhatia and Ram, 2001; Ryan et al., 2008; Märtsin and Mahmoud, 2012; Andreouli, 2013). Evidently, this was also a critical theme in the acculturation processes for the majority of youth in this study.

In addition, there were situations during resettlement where the youth experienced that their sense of agency was inhibited. In Norway, the youth sensed a strong cultural ideal that children and youth should be protected and taken care of (as was evident in themes and subthemes such as *The Welfare State*, *Children's Rights*, and *Follow-up*). In Norway, caregivers closely monitoring and implementing rules and limits during children and youths' upbringing, such as curfew, bedtime, and restricting

time spent on the Internet, is common and deemed responsible caregiving. However, the youths in this study were raised in societies with less close follow-up and had to a large extent managed themselves during their flight through many countries. In light of this, this type of follow up made no sense. Rather than feeling cared for, some felt mistrusted or mistreated and with a diminished sense of agency. The conflicts and frustrations that these situations created can thus be understood as the youth' way of enhancing their sense of agency. On the one hand, URMs have the right to the same follow-up as their peers in Norway. On the other hand, it might be that these youth have a greater need to be understood through their previous experiences. If the type of care, support, and follow-up to some degree were adjusted to fit these particular youth and their previous experiences, this might reduce friction and conflicts as well as help the youth to feel empowered rather than like they have lost agency.

In the Nordic countries, learning autonomy and self-determination is considered necessary to develop into independent adults (Hellevik, 2005; Nordisk Ministerråd, 2020; Skivenes, 2020). This ideal was reflected in the youth' descriptions of having to be independent when becoming an adult, which affected the youth' sense of agency in different ways. The youth who learned necessary skills and knowledge described a sense of thriving once becoming independent. However, others experienced a sudden loss of help without being ready, thus experiencing a loss of agency. This sudden loss of support might be a result of growing up in institutional care, where the state is no longer responsible for follow-up when one becomes an adult. By contrast, most youth born and raised in Norway experience a "transition phase," where caregivers gradually decrease their involvement and follow-up from adolescence into adulthood (Hellevik, 2005). Furthermore, youth' experiences of being on their own might be reinforced by their experiences of low involvement with their local communities, such as neighbors and family (subtheme *Low Responsibility for Extended Family*). This is in accordance with relevant literature that has described a strong tendency of defamiliarization in the Nordic countries. Accordingly, it is the state, not one's family, who is considered to have provider responsibility. This diminished private responsibility has been criticized for resulting in, for example, too little responsibility for those around you and family members (Hellevik, 2005; Doksheim, 2011; Doksheim, 2017). It seems that many youth in this study were used to a greater sense of belonging and responsibility toward those around them. Not having their family or childhood friends around, many expressed a longing to receive this kind of support, but also the opportunity to be there for others and help others.

The framework for this study involved the assumption that individual acculturation is a process executed by an agentic individual. Clearly, the youth showed a lot of agency during their resettlement, which affected their own acculturation process. There also seemed to be several features that facilitated or limited their sense of and possibility to influence these processes.

Conclusion and implications

As URMs are an especially vulnerable group of refugees, enhanced knowledge about their acculturation processes might make it easier to more effectively facilitate their resettlement in their host country. By analyzing interviews with URMs, it became clear that they navigated the Norwegian cultural and societal landscape by working hard to understand and adapt, to contribute to the society, and balance between different cultural expectations. The youth' acculturation processes seemed to be the result of both their own needs, wishes and behavior as well as specific features in their host country culture, which supports the notion that acculturation processes to some degree are context- and culture-dependent. This highlight the importance of considering specific cultural and societal features when grasping acculturation processes. Subsequently, knowledge regarding the cultural and societal framework that these youth face and how they navigate within it during resettlement is crucial for identifying possible cross-cultural challenges and promoting positive developmental tracks.

For those working closely with immigrant youth in their daily lives, such as social workers, legal guardians and foster parents, it is crucial to take these experiences seriously. At arrival, it is important to provide children and youth with information regarding their host country culture and facilitate reflections regarding differences and similarities between their original and host country cultures. Doing so might help the youth to deal with culture shock and provide them with valuable information about how to navigate during resettlement. For example, information that Norwegians tend to be hesitant in interacting and establishing new relations is a cultural trait may be important for the youth to know when trying to establish new relationships. Furthermore, to make it easier for the youth to make friends and create a sense of community, it is important that social workers facilitate participation in arenas such as school and leisure activities.

To increase the youth' chances for employment when becoming an adult, it is essential they receive help to do well in school. With time, it is important to facilitate for more work-related measures, such as helping them to get a drivers license or a part-time job. On a societal level, the Norwegian society may mitigate work-related discrimination by increase research on racism and discrimination on the grounds of ethnicity and religion. More knowledge on the complexity of discrimination will make it easier to develop specific interventions. Furthermore, campaigns to combat hate and harassment in the workplace, strengthening the equality and anti-discrimination commissioner as well as campaigns on how to file complaints about discrimination based on ethnicity and religion may be effective. Considering that discussions about resettlement, integration and discrimination are most often held from the host country perspective, this study points to the importance of also including immigrants' perspectives and experiences in such discussions.

The youth in this study reported struggling with, often conflicting, expectations from their original and host country societies. In light of this, it is crucial that adults close to these youth help them to elaborate on how they can relate to and be part of both cultures. For example, older URMs or other migrants, who themselves have gone through a similar process, can provide the youth with examples of how they have dealt with this. This is especially important considering that the possibility to engage in both original and host country culture is associated with fewer mental health problems and less post-migration stress. However, just as important is that the youths are encourage to reflect upon how *they* want to relate to these different cultures, and what they want to embrace and possibly let go of.

Data availability statement

The datasets presented in this article are not readily available because of the sensitivity of the material and the impossibility of

anonymization. Requests to access the datasets should be directed to e.s.andersson@nkvts.no.

Ethics statement

The participants gave their informed written consent prior to their inclusion in the study. For those under the age of 16, written informed consent was also provided by their legal guardian.

Author contributions

EA conceived the idea for this study. EA and CØ performed the first analysis together and contributed to the interpretation of the results. EA took the lead in the second analysis with support and input from CØ. EA wrote the manuscript with feedback from CØ. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Andersson, E. S., Skar, A.-M. S., and Jensen, T. K. (2021). Unaccompanied refugee minors and resettlement: turning points towards integration. *Eur. J. Soc. Psychol.* 51, 1–13. doi: 10.1002/ejsp.2761

Andreasson, U. (2017). *Tillit – det nordiska guldet*. Denmark: Nordiska Ministerrådet.

Andreouli, E. (2013). Identity and acculturation: the case of naturalised citizens in Britain. *Cult. Psychol.* 19, 165–183. doi: 10.1177/1354067X13478984

Ball, E., Steffens, M. C., and Niedlich, C. (2022). Racism in Europe: characteristics and Intersections With Other Social Categories. *Front. Psychol.* 13:789661. doi: 10.3389/fpsyg.2022.789661

Bean, T., Derluyn, I., Eurelings-Bontekoe, E., Broekaert, E., and Spinhoven, P. (2007). Comparing psychological distress, traumatic stress reactions, and experiences of unaccompanied refugee minors with experiences of adolescents accompanied by parents. *J. Nerv. Ment. Dis.* 195, 288–297. doi: 10.1097/01.nmd.0000243751.49499.93

Belford, N. (2017). International students from Melbourne describing their cross-cultural transitions experiences: culture shock, social interaction, and friendship development. *J. Int. Stud.* 7, 499–521. doi: 10.32674/jis.v7i3.206

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Appl. Psychol. Int. Rev.* 46, 5–34.

Berry, J. W., Phinney, J. S., Sam, D. L., and Vedder, P. (2006). Immigrant youth: acculturation, identity, and adaptation. *Appl. Psychol. Int. Rev.* 55, 303–332. doi: 10.1111/j.1464-0597.2006.00256.x

Bhatia, S., and Ram, A. (2001). Rethinking 'acculturation' in relation to diasporic cultures and postcolonial identities. *Hum. Dev.* 44, 1–18. doi: 10.1159/000057036

Bhatia, S., and Ram, A. (2009). Theorizing identity in transnational and diaspora cultures: a critical approach to acculturation. *Int. J. Intercult. Relat.* 33, 140–149. doi: 10.1016/j.ijintrel.2008.12.009

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qual. Res. Psychol.* 3, 77–101. doi: 10.1191/1478088706qp063oa

Braun, V., and Clarke, V. (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Couns. Psychother. Res.* 21, 37–47. doi: 10.1002/capr.12360

Brook, M. I., and Ottemöller, F. G. (2020). A new life in Norway: the adaptation experiences of unaccompanied refugee minor girls. *Child Youth Serv. Rev.* 117:105287. doi: 10.1016/j.childyouth.2020.105287

Cengiz, P.-M., and Eklund Karlsson, L. (2021). Portrayal of immigrants in danish media—a qualitative content analysis. *Societies* 11:45. doi: 10.3390/soc11020045

Cheung, B. Y., Chudek, M., and Heine, S. J. (2011). Evidence for a sensitive period for acculturation: younger immigrants report acculturating at a faster rate. *Psychol. Sci.* 22, 147–152. doi: 10.1177/0956797610394661

Chirkov, V. (2009). Critical psychology of acculturation: what do we study and how do we study it, when we investigate acculturation? *Int. J. Intercult. Relat.* 33, 94–105. doi: 10.1016/j.ijintrel.2008.12.004

Derluyn, I., Lippens, V. L., Verachtert, T., Bruggeman, W., and Broekaert, E. (2010). Minors travelling alone: a risk group for human trafficking? *Int. Migr.* 48, 164–185. doi: 10.1111/j.1468-2435.2009.00548.x

Doksheim, M. (2011). Den nordiske modellen [Online]. www.civita.no: Civita. Available at: https://civita.no/notat/nr-7-2011-den-nordiske-modellen/ (Accessed January 7, 2021).

Doksheim, M. (2017). Den nordiske modellen [Online]. www.civita.no: Civita. Available at: https://civita.no/politisk-ordbok/hva-er-den-nordiske-modellen/ (Accessed January 7, 2021).

Eberl, J.-M., Meltzer, C. E., Heidenreich, T., Herrero, B., Theorin, N., Lind, F., et al. (2018). The European media discourse on immigration and its effects: a literature review. *Ann. Int. Commun. Assoc.* 42, 207–223. doi: 10.1080/23808985.2018.1497452

EL-Awad, U., Fathi, A., Vasileva, M., Petermann, F., and Reinelt, T. (2021). Acculturation orientations and mental health when facing post-migration stress: differences between unaccompanied and accompanied male Middle Eastern refugee adolescents, first- and second-generation immigrant and native peers in Germany. *Int. J. Intercult. Relat.* 82, 232–246. doi: 10.1016/j.ijintrel.2021.04.002

Esses, V. M., Medianu, S., and Lawson, A. S. (2013). Uncertainty, threat, and the role of the media in promoting the dehumanization of immigrants and refugees. *J. Soc. Issues* 69, 518–536. doi: 10.1111/josi.12027

Fedi, A., Mannarini, T., Brodsky, A., Rochira, A., Buckingham, S., Emery, L., et al. (2019). Acculturation in the discourse of immigrants and receiving community members: results from a cross-national qualitative study. *Am. J. Orthopsychiatry* 89, 1–15. doi: 10.1037/ort0000325

Gamsakhurdia, V. (2018). Adaptation in a dialogical perspective - From acculturation to proculturation. *Cult. Psychol.* 24, 545–559. doi: 10.1177/1354067X18791977

Gamsakhurdia, V. (2019). Proculturation: self-reconstruction by making fusion cocktails of alien and familiar meanings. *Cult. Psychol.* 25, 161–177. doi: 10.1177/1354067X19829020

Hellevik, T. (2005). Ungdom, etablering og ulike velferdsregimer. *Tidskrift for Ungdomsforskning* 5, 89–110.

Hill, C. E., Knox, S., ThompSON, B. J., Williams, E. N., Hess, S. A., and Ladany, N. (2005). Consensual qualitative research: an update. *J. Couns. Psychol.* 52, 196–205. doi: 10.1037/0022-0167.52.2.196

Hvinden, B. (2009). Den nordiske velferdsmodellen: likhet, trygghet - og marginalisering? *Sosiologi i dag* 39, 11–36.

IMDI (2022). Ny integreringspakke vedtatt [Online]. Available at: https://www.imdi.no/om-imdi/aktuelt-na/ny-integreringspakke-vedtatt--videreforing-av-utvidet-introduksjonsprogram-og-utvidet-norskopplaring/?utm_source=IMDI+-+Nyhetsbrev&utm_campaign=49e53e5557-m_COPY_01&utm_medium=email&utm_term=0_d03f2a9490-49e53e5557-153943253 (accessed July 8, 2022).

Jensen, T. K., Fjermestad, K. W., Granly, L., and Wilhelmsen, N. H. (2015). Stressful life experiences and mental health problems among unaccompanied asylum-seeking children. *Clin. Child Psychol. Psychiatry* 20, 106–116. doi: 10.1177/1359104513499356

Jensen, T. K., Skar, A.-M. S., Andersson, E. S., and Birkeland, M. (2019). Long-term mental health in unaccompanied refugee minors: pre- and post-flight predictors. *Eur. Child Adolesc. Psychiatry* 28, 1671–1682. doi: 10.1007/s00787-019-01340-6

Jore, T., Oppedal, B., and Biele, G. (2020). Social anxiety among unaccompanied minor refugees in Norway. The association with pre-migration trauma and post-migration acculturation related factors. *J. Psychosom. Res.* 136:110175. doi: 10.1016/j.jpsychores.2020.110175

Keles, S., Friborg, O., Idsøe, T., Sirin, S., and Oppedal, B. (2016). Depression among unaccompanied minor refugees: the relative contribution of general and acculturation-specific daily hassles. *Ethn. Health* 21, 300–317. doi: 10.1080/13557858.2015.1065310

Luster, T., Qin, D., Bates, L., Rana, M., and Jung, A. L. (2010). Successful adaptation among Sudanese unaccompanied minors: perspectives of youth and foster parents. *Childhood* 17, 197–211. doi: 10.1177/0907568210365664

Märtsin, M., and Mahmoud, H. W. (2012). "Never at-Home?: migrants between Societies" in *The Oxford Handbook of Culture and Psychology*. ed. J. Valsiner (New York: Oxford University Press)

Müller, L. R. F., Büter, K. P., Rosner, R., and Unterhitzenberger, J. (2019). Mental health and associated stress factors in accompanied and unaccompanied refugee minors resettled in Germany: a cross-sectional study. *Child Adolesc. Psychiatry Ment. Health* 13:8. doi: 10.1186/s13034-019-0268-1

Nordic Co-operation. (n.d.). Nordic co-operation on integration [Online]. Nordisk ministerråd. Available at: https://www.norden.org/en/information/nordic-co-operation-integration (Accessed July 8, 2022).

Nordisk Ministerråd (2020). *Norden som verdens mest bærekraftige og integrerte region - Handlingsplan 2021–2024* Danmark: Nordisk Ministerråd.

Norredam, M., Nellums, L., Nielsen, R. S., Byberg, S., and Petersen, J. H. (2018). Incidence of psychiatric disorders among accompanied and unaccompanied asylum-seeking children in Denmark: a nation-wide register-based cohort study. *Eur. Child Adolesc. Psychiatry* 27, 439–446. doi: 10.1007/s00787-018-1122-3

Oppedal, B., and Idsoe, T. (2015). The role of social support in the acculturation and mental health of unaccompanied minor asylum seekers. *Scand. J. Psychol.* 56, 203–211. doi: 10.1111/sjop.12194

Pfeiffer, E., Behrendt, M., Adeyinka, S., Devlieger, I., Rota, M., Uzureau, O., et al. (2022). Traumatic events, daily stressors and posttraumatic stress in unaccompanied young refugees during their flight: a longitudinal cross-country study, 26. *Child Adolesc. Psychiatry Ment. Health* 16. doi: 10.1186/s13034-022-00461-2

Pumariega, A. J., and Rothe, E. (2010). Leaving no children or families outside: the challenges of immigration. *Am. J. Orthopsychiatry* 80, 505–515. doi: 10.1111/j.1939-0025.2010.01053.x

Ryan, D., Dooley, B., and Benson, C. (2008). Theoretical perspectives on post-migration adaptation and psychological well-being among refugees: towards a resource-based model. *J. Refug. Stud.* 21, 1–18. doi: 10.1093/jrs/fem047

Skivenes, M. (2020). Ta barns rettigheter på alvor [Online]. Forskning. Available at: https://blogg.forskning.no/blogg-stat-og-individ/ta-barns-rettigheter-pa-alvor/1650716.

Smith, J. A., Flowers, P., and Larkin, M. (2009). *Interpretative phenomenological analysis*. London, SAGE Publications.

Ungar, M. (2008). Resilience across Cultures. *Br. J. Soc. Work* 38, 218–235. doi: 10.1093/bjsw/bcl343

Ungar, M. (2011). The social ecology of resilience: addressing contextual and cultural ambiguity of a nascent construct. *Am. J. Orthopsychiatry* 81, 1–17. doi: 10.1111/j.1939-0025.2010.01067.x

UNICEF. (2022). Child displacement [Online]. Available at: https://data.unicef.org/topic/child-migration-and-displacement/displacement/ (Accessed July 12, 2022).

Vervliet, M., Lammertyn, J., Broekaert, E., and Derluyn, I. (2014). Longitudinal follow-up of the mental health of unaccompanied refugee minors. *Eur. Child Adolesc. Psychiatry* 23, 337–346. doi: 10.1007/s00787-013-0463-1

Ward, C. (2008). Thinking outside the Berry boxes: new perspectives on identity, acculturation and intercultural relations. *Int. J. Intercult. Relat.* 32, 105–114. doi: 10.1016/j.ijintrel.2007.11.002

Woodgate, R. L., and Busolo, D. S. (2021). African refugee youth's experiences of navigating different cultures in canada: a push and pull experience. *Int. J. Environ. Res. Public Health* 18:2063. doi: 10.3390/ijerph18042063

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EDITED BY
Elisa Pfeiffer,
Ulm University Medical Center, Germany

REVIEWED BY
Siaw Leng Chan,
Universiti Putra Malaysia Bintulu Sarawak Campus, Malaysia
Solvig Ekblad,
Karolinska Institutet (KI), Sweden
Lauritz Müller,
Catholic University of Eichstätt-Ingolstadt, Germany

*CORRESPONDENCE
Anna Swantje van der Meer
✉ anna.vandermeer@staff.uni-marburg.de

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"I can't describe how I could get better, but I would like to" - Conception of health and illness of refugee youth in Germany

Anna Swantje van der Meer*, Friederike Durlach, Katharina Szota and Hanna Christiansen

Department of Child and Adolescent Psychology, Philipps-University of Marburg, Marburg, Germany

Introduction and objective: Almost half of all the people displaced worldwide are children and adolescents. Many refugee children, adolescents, and young adults suffer from psychological stress. However, their utilization of (mental) health services is low, probably due to a lack of knowledge about (mental) health and (mental) health care. The current study aimed to explore concepts of (mental) health and illness of refugee youth as well as assess their mental health literacy (MHL) to arrive at conclusions for improving mental health care access and use.

Method: From April 2019 to October 2020, we conducted 24 face-to-face interviews with refugee children and adolescents in an outpatient clinic (n=8), in youth welfare facilities (n=10), and at a middle school (n=6). A semi-structured interview was used to assess knowledge about mental and somatic health and illness as well as corresponding health strategies and care options. The material was evaluated using qualitative content analysis.

Results: Participants (N=24) were between 11 and 21years old (M=17.9, SD=2.4). The coded material was assigned to four thematic main areas: (1) conception of illness, (2) conception of health, (3) knowledge about health care structures in their country of origin, and (4) perceptions of mental health care structures in Germany. Compared to somatic health, the interviewed refugee children and adolescents knew little about mental health. Furthermore, respondents were more aware of opportunities of somatic health promotion, but almost none knew how to promote their mental health. In our group-comparative analysis we observed that younger children possess little knowledge about mental health-related topics.

Conclusion: Our results show that refugee youth have more knowledge about somatic health and somatic health care than about mental health (care). Accordingly, interventions to promote the MHL of refugee youth are necessary to improve their utilization of mental health services and to provide adequate mental health care.

KEYWORDS

children and adolescents, mental health literacy, qualitative research, psychotherapy, refugee, refugee mental health

Introduction

Existing, resurgent, and escalating armed conflicts, as well as the consequences of global warming as results of climate change, are creating continuous dynamic refugee movements worldwide. By October 2022, the United Nations High Commissioner for Refugees [United Nations High Commissioner for Refugees (UNHCR), 2022] estimates that around 14.6 million people have crossed the Ukrainian border because of attacks by the Russian military in the country. The number of internally displaced people (IDP) in Afghanistan rose for the 15th year in a row. Also due to the Taliban's return to power in August 2021, 900,000 people were displaced within that country or to neighboring countries. The Internal Displacement Monitoring Center assumes that around 23.7 million people were displaced within their own countries because of extreme weather occurrences like storms, droughts, and floods in 2021 [United Nations High Commissioner for Refugees (UNHCR), 2022].

At the end of 2012, 42.7 million people were forcibly displaced. By the end of 2021, the number of people forcibly displaced had already grown worldwide to 89.3 million [United Nations High Commissioner for Refugees (UNHCR), 2022]. More than 69% of the refugee population originated from the Syrian Arab Republic (6.8 million), Venezuela (4.6 million), Afghanistan (2.7 million), South Sudan (2.4 million), and Myanmar (1.1 million). The largest number of hosted refugees is in Turkey, reported to be 3.8 million, followed by Colombia hosting over 1.8 million people. Germany hosted the fifth largest number of people with almost 1.25 million people, with Syrian refugees constituting the largest group [United Nations High Commissioner for Refugees (UNHCR), 2022].

Between 2018 and 2021, 1.5 million children were born as refugees [United Nations High Commissioner for Refugees (UNHCR), 2022]. Furthermore, over 41% of the forcibly displaced people worldwide were minors. From January to September 2022, a total of 56,562 children and adolescents under the age of 18 applied for asylum in Germany according to the Federal Office for Migration and Refugees [Bundesamt für Migration und Flüchtlinge (BAMF), 2022]. In 2021, nearly half (41.9%) of 148,200 asylum seekers were minors according to the Federal Office for [Bundesamt für Migration und Flüchtlinge (BAMF), 2022]; [United Nations High Commissioner for Refugees (UNHCR), 2022]. Among these, 3,249 asylum seekers were unaccompanied and separated children (UASC) according to the Association for Unaccompanied Refugee [Bundesfachverband unbegleitete minderjährige Flüchtlinge (BumF), 2021].

An unaccompanied child is a child or adolescent separated from both parents and other relatives not being cared for by any other adult, by law or custom. A separated child is a child or adolescent disconnected from both parents or from his/her previous legal or customary primary caregiver, but not necessarily from other relatives (International Committee of the Red Cross, 2004). Most UASC living in Germany are male and originate primarily from Afghanistan and the African countries of Somalia, Guinea and Eritrea [German Youth Institute/Deutsches Jugendinstitut e.V. (DJI), 2020]. UASC are taken into care by youth services and are mainly placed in youth welfare facilities (YWF). Since 2010 there has been a sharp increase in the number of cases in this regard, with a particularly high growth dynamic observed for the period between 2014 and 2016 [Deutsches Jugendinstitut e.V. (DJI), 2020].

Refugee children and adolescents have fled war, persecution and violence with their families or by themselves. Due to post-migration stressors like discrimination, uncertain residence, lack of perspectives or psychological stress caused by migration-related traumatic life events, the psychological burden of refugees in the country of arrival is persistently high (Höhne et al., 2020). Reviews further indicate high rates of mental illness among refugee children and adolescents. Particularly high prevalence rates are reported for posttraumatic stress disorder (PTSD) (22.71%), depression (13.81%) and anxiety disorders (15.77%) (Blackmore et al., 2020). There is also evidence that prevalence rates of anxiety, depression, and PTSD in children, adolescents, and adults are significantly higher in refugee populations than those reported in non-refugee populations over the globe (Henkelmann et al., 2020).

Despite the high prevalence rates of mental illnesses in refugee populations described above, studies show lower utilization rates of mental health care system structures by refugee youths (Bean et al., 2006; Colucci et al., 2014). A Swedish long-term study reported that migrant people, irrespective of age, use mental health services less often than their Swedish peers.

One reason for refugees' low-frequency use of the mental health care system is the fear of stigmatization (by peers and society) originating from a mental-illness diagnosis (Fazel and Betancourt, 2018). Qualitative studies report an association between mental illness and negative and stigmatizing terms such as "crazy" or "wacky" which might result in young refugees' low use of such service (Majumder et al., 2015). Another result from a qualitative analysis addressing the perspective on mental health care is that refugee children and adolescents often do not trust mental health care professionals and feel pressured by them (Jarlby et al., 2018). Not getting adequate help for their mental health problems results in them feeling poorly understood (Jarlby et al., 2018). Other barriers to access were divergent explanatory models and culturally influenced concepts of mental health and mental health care, limited access to mental health services, and the need to work with interpreters (Colucci et al., 2015). Furthermore, poor health literacy (HL) can be a reason for low frequency use of health care structures by refugees (Colucci et al., 2015).

HL is defined by "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Kindig et al., 2004). Studies indicate lower HL and knowledge of illness among refugees (McKeary and Newbold, 2010; Khuu et al., 2016). This might be due to various biographical factors. Refugees are exposed to higher rates of interrupted schooling because of war or lacking educational structures. Furthermore, less host-language literacy, and resettlement into areas with few people who share cultural, or religious backgrounds, lead to less social cohesion and low awareness of local health systems (McKeary and Newbold, 2010). Poor HL can lead to harmful health behaviors such as non-adherence, as well as ineffective health care system navigation, resulting in a poor health outcome even while increasingly utilizing health care structures (Fox et al., 2021).

Mental health literacy (MHL) is an extension of the HL concept and is defined as "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm et al., 1997). It includes the ability to recognize mental illness, knowing how to collect mental health information; knowledge about risk factors and causes, and about self-treatments and professional help available (Jorm, 2012). There is also evidence that different levels of knowledge

and beliefs about the nature and management of mental health problems may act as barriers to help-seeking behavior in e.g., Arabic-speaking groups (Slewa-Younan et al., 2014). Following this, some MHL researchers argue that also stigma, positive mental health, and help-seeking efficacy should be added to the MHL definition (Kutcher et al., 2019; Spiker and Hammer, 2019).

Although conceptions health and illness have such a significant influence on help-seeking behavior and thus also on the health of children and young people, few studies have sought the perspectives and expectations of refugee children and adolescents on the issues of mental illness, mental health, and psychotherapy. Existing research has focused particularly on the perspective of UASC. A qualitative interview study from Denmark with ten unaccompanied refugee youths aged 17–18 years reported that respondents defined mental health as the ability to function well in and be part of a community. One possible strategy to promote this is social activities and social support (Jarlby et al., 2018). Furthermore, qualitative research showed that refugee adolescents and young adults were more receptive and able to engage in discourse on the subject of mental health when alternative terms such as "stress" were used. By using alternative words, the authors sought to prevent stigma-induced reactions that they feared would occur if they had used the term "mental health." By using non-stigma related terms, perceptions and knowledge of respondents regarding influencing factors on mental health could be revealed (Filler et al., 2021). In contrast, a UK study demonstrated that also unaccompanied refugee youth showed very heterogeneous knowledge regarding mental illness and health in general. Their results indicated that some respondents revealed constructs of mental illness resembling those in the West, others cited physical causes mental illness, and others denied mental health problems (Demazure et al., 2021). To improve care, a more detailed understanding of the use of alternative support strategies of refugee children and young people is necessary. A systematic review on the psychosocial needs of refugee children and youth identified social support, security, culture and education as important factors (Nakeyar et al., 2018). Similarly, there is evidence that young refugees are more likely to seek out other support structures such as friends, religious or school-based services than mental-health care structures (De Anstiss et al., 2009; Ellis et al., 2010). Furthermore, prayer as well as sleeping, reading, talking to friends, exercising or watching television have been reported as means to alleviate levels of psychological distress (Halcón et al., 2004; Ellis et al., 2010; Jarlby et al., 2018).

Taking cues from the latest international research, our aim was to analyze the conceptions of (mental) health and (mental) illness of refugee children, adolescents, and young adults in Germany. We also analyzed differences between age groups and between refugee adolescents with and without mental disorders. Based on our findings, we will derive implications for psychotherapeutic practice and research as well as the state of MHL in refugee youth.

Materials and methods

Participants

Our sample is a consecutive convenience sample. Participants were recruited from a psychotherapeutic outpatient clinic in Germany which they visited for diagnostic assessment and psychotherapeutic treatment (study population 1 = S1), from a middle school (study population 2 = S2) and from YWF (study population 3 = S3). Participants from S2 fled accompanied by their families, participants from S1 and S3 fled to Germany unaccompanied. A total of 24 ($N = 24$) refugee children, adolescents and young adults participated in this study. In S1, eight (n = 8) patients, in S2, six (n = 6) pupils and in S3 ten (n = 10) adolescents and young adults attended the interview. Respondents met inclusion criteria if they were between 10 and 21 years old and had fled to Germany. Respondents were excluded if they had already completed or were currently undergoing psychological, psychiatric, or psychotherapeutic treatment. For respondents from the outpatient clinic, interviews had to be conducted during the diagnostic assessment and before the start of treatment. The characteristics of our study samples are summarized in Table 1.

Data collection

The interviews were based on a semi-structured interview guideline and conducted in face-to-face sessions. We generated the interview guideline based on an extensive literature research and on the issue of interest to this project, to examine conceptions of health and illness of refugee youth, knowledge about personal (mental) health care strategies, knowledge about (mental) health care structures in the countries of origin and perceptions regarding psychotherapy in Germany. We posed several initial questions (full guidelines can

TABLE 1 Study sample: demographic data ($N = 24$).

	S1 ($n = 8$)	S2 ($n = 6$)	S3 ($n = 10$)
Age in years: *M* (*SD*)	19.0 (1.0)	13.3 (1.0)	20.2 (1.5)
Gender			
M	8	3	10
W		3	
SDQ			
Normal		6	10
Borderline	5		
Clinically relevant	1		
Accommodation			
Independent	4		3
With parents		6	
Residential group	4		7
Interview length			
M (*SD*)	18:38 (05:25)	08:26 (01:18)	15:45 (03:14)
Country of origin			
Afghanistan	2		4
Somalia	2		2
Pakistan	2	1	
Iran	1		
Syria	1	3	
Eritrea		2	3
Sudan			1

be found in Supplementary material) to evoke concepts of health and illness, and then followed up with more specific prompts (e. g. regarding mental illness or personal attitudes of interviewees) at the discretion of the interviewers.

Procedures

Participants were informed in advance *via* an information letter about our research objectives and handling of the collected data. If desired by the participants, they had the option of getting help from an interpreter. After clarification of open questions about the procedure, participants were asked to sign a consent form for the use of their data. If participants were younger than 18 years at the time of the interview, additional written informed consent from a parent or a guardian with custody was obtained. The interviews took place face-to-face in the participating outpatient clinic, in a middle school or in the YWF where the participating respondents resided. All interviews were recorded by audio equipment and stored securely in accordance with data protection requirements. Ethics approval was granted by the Ethics Committee of the Department of Psychology of Philipps University Marburg (approval number: 2020-05k). Afterwards, the interview atmosphere, general conditions, and special incidents during the interview were noted, according to the quality criteria of documentation of qualitative research (Kruse, 2015; Mayring, 2015). The interviews were conducted from April 2019 to October 2020. Details about the length of the interviews are also shown in Table 1.

Analyses

The audio material was transcribed using the F4 transcription software and applying transcription rules according to Dresing and Pehl (2018). The participants were pseudonymized by assigning them a code containing information about the sample affiliation (S1, S2, S3) and a consecutive numbering (e.g., S1_R1 = Respondent 1 of S1).

The data evaluation of the transcribed material relied on the content structuring qualitative content analysis according to Kuckartz (2016) and was carried out with the help of analysis software MAXQDA, 2020. The aim of content structuring qualitative content analysis is to identify, categorize and systematically describe the material relevant to the research question with regard to the research aim. The qualitative content analysis according to Kuckartz (2016) is formed *via* a seven-step process.

Step 1: Initiating text work, marking important text passages and writing memos. The transcribed interviews were read, relevant passages marked and comments in the form of memos on the existing content were made. To conclude the first phase of the analysis process, case summaries of each interview were prepared (Kuckartz, 2016). **Step 2**: Main categories were developed for the category system. Main categories can be built inductively (out of data) or deductively. Deductively created categories had already been created independently of the interview material, based either on the interview guidelines or a previous literature search. However, the generating of categories need not be exclusively inductive or deductive; a deductive-inductive mixed form of category formation is also possible and was applied in the present research project (Kuckartz, 2016). The possibility of a mixed form of category generating is particularly suitable here, since on the one hand, due to the structuring of the interview guideline, main and partial Sub-categories already exist before the first material pass, and on the other hand, due to the material, some Sub-categories had to be added during further passes. The category system we created was tested on the basis of four interviews (15% of the total material) and its applicability was checked by coding the material from the four interviews with the main categories already generated. The material from the four interviews could be assigned to the main categories, so it was not necessary to add new main categories to the category system. **Phase 3**: First coding process, coding of the entire material along the main categories. Corresponding text sections were assigned to the different categories. Since a text section and a single sentence can contain several topics, coding with several categories is possible and sensible (Kuckartz, 2016). After **Phase 4**: Once all text passages coded with the same category were compiled, we differentiated the categories further in **Phase 5**: Inductive determination of subcategories on the material. For this purpose, a tabular overview of the main categories with the respective Sub-categories was created and the assigned material examined. Missing subcategories were added. **Phase 6**: Second coding process: the complete material with the differentiated category system was coded. The assignment of the text passages was checked again and previously unassigned material then assigned to the newly added subcategories. **Phase 7**: Category-based evaluation and presentation of results, an attempt was made to use the category system to seek patterns in the collected material providing information about the field under investigation concerning the research questions (Kuckartz, 2016). In the present work, the material was evaluated using the category-based evaluation of the main categories. In doing so, the composition of the main category was presented according to its subcategories. For this purpose, we did not only mention frequencies, but also arrived at results in terms of content and presented those based on quotations from the texts (see Figure 1).

Quality criteria

In this study, the quality criteria we applied were rule guidance, procedural documentation, and interpretation assurance (Mayring, 2015). The analysis units were edited sequentially and systematically according to pre-defined rules. All analyses steps were documented in writing. Inter-rater reliability was assessed in two stages. To prove the first rater's (ASvdM) coding, the established category system and (randomly selected) 25% of the data material was made available for the second rater (FD). After a communicated validation of the coding manual, the category system was revised and the entire data material independently coded by both raters (ASvdM; FD) to verify the quality of the category system. Inter-rater reliability was established with Kappa coefficients according to Cohen (κ) using the corresponding function in MAXQDA, 2020. An adjustment is made for the probability of random matches. A check was made at segment level to ensure that the codes match. Our aim was to achieve a code overlap of at least 60% at segment level. Inter-rater reliability was calculated separately for each group (S1; S2; S3). The Kappa coefficient calculation resulted in $\kappa = 0.69$ for interview material of S1, $\kappa = 0.74$ for interview material of S2 and $\kappa = 0.62$ of interview material

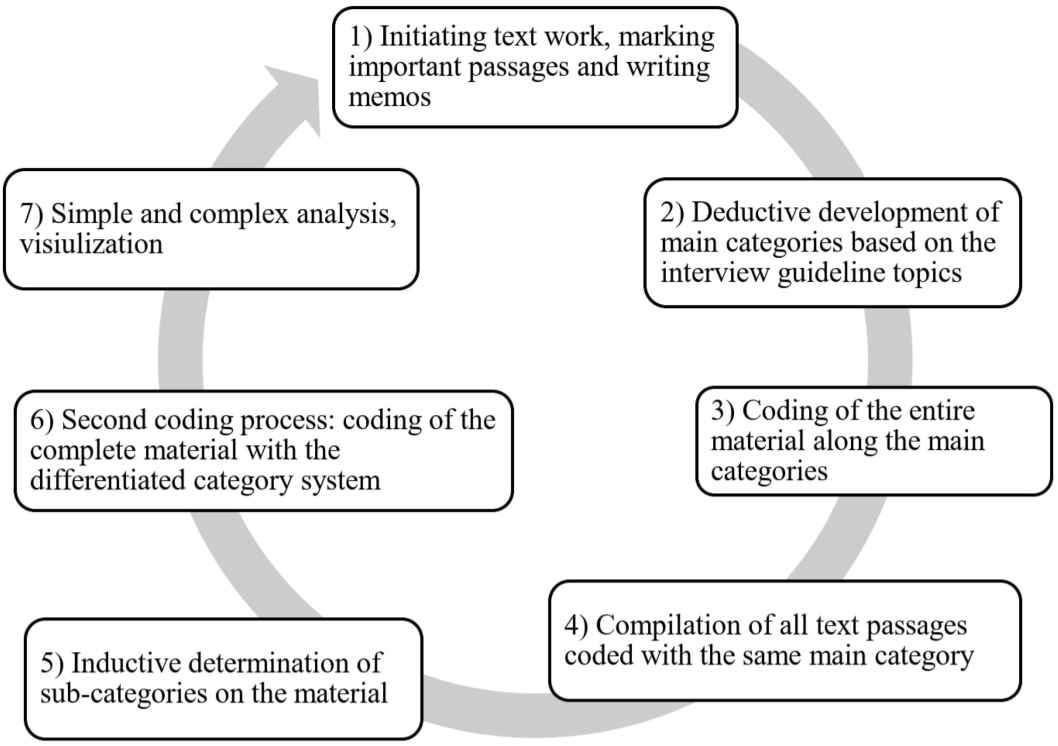

FIGURE 1
Flowchart qualitative content analysis according to Kuckartz (2016).

of S3, indicating good inter-rater reliability (Greve and Wentura, 1997). The calculation of inter-rater reliability is shown in detail in Figure 2.

Results

The main categories deductively formed along the structured guideline, as well as the subcategories inductively formed on the material, were assigned to these four topics:

(1) Conception of illness.
(2) Conception of health.
(3) Knowledge about health care structures in the country of origin.
(4) Perceptions regarding mental health care structures in Germany.

Twelve main categories in all were generated. The main categories are composed by the contents of the subcategories. Together with concise excerpts of the interviews, these are explained below.

Conception of illness

Five main categories, abbreviated in the following headings as MC, were assigned to the topic *Conception of illness*. Detailed information on the configuration of the main and subcategories is presented in Table 2. Considering the number of codes of the main categories, it is noticeable that the main category *Somatic illness* has more codes (107) than the main category *Mental illness* (73). Likewise, more codes were assigned to the main category *Known somatic health interventions* (58) than to the main category *Known mental health interventions* (15).

MC: somatic illness

Our respondents described somatic-illness symptoms as having no appetite, being very tired, and having less energy. Furthermore, different types of pain, such as abdominal pain, headache or back pain were mentioned. Named diseases, apart from colds and coughs, were AIDS, Ebola, cancer, diabetes, and Covid-19. Respondents described mood and associated emotions during somatic illness as dissatisfaction, sadness, and tiredness. One respondent also reported worrying about dying through illness:

> 'When I get sick and am afraid I'll die, I pray.' (S3_R9)

Respondents appraised somatic illness as something negative. One respondent (S3_R2) stated:

> 'Yes, in my opinion, illness is like that - when you can't walk or whatever, when you're in a wheelchair or something, that's the worst, (...) for me of course. If you always, always need help and you always have to ask somebody, personally, I'd rather die than be in a situation like that. I think that's better.'

Eight of the respondents did not describe expressions of illness or potential manifestations. The respondents named

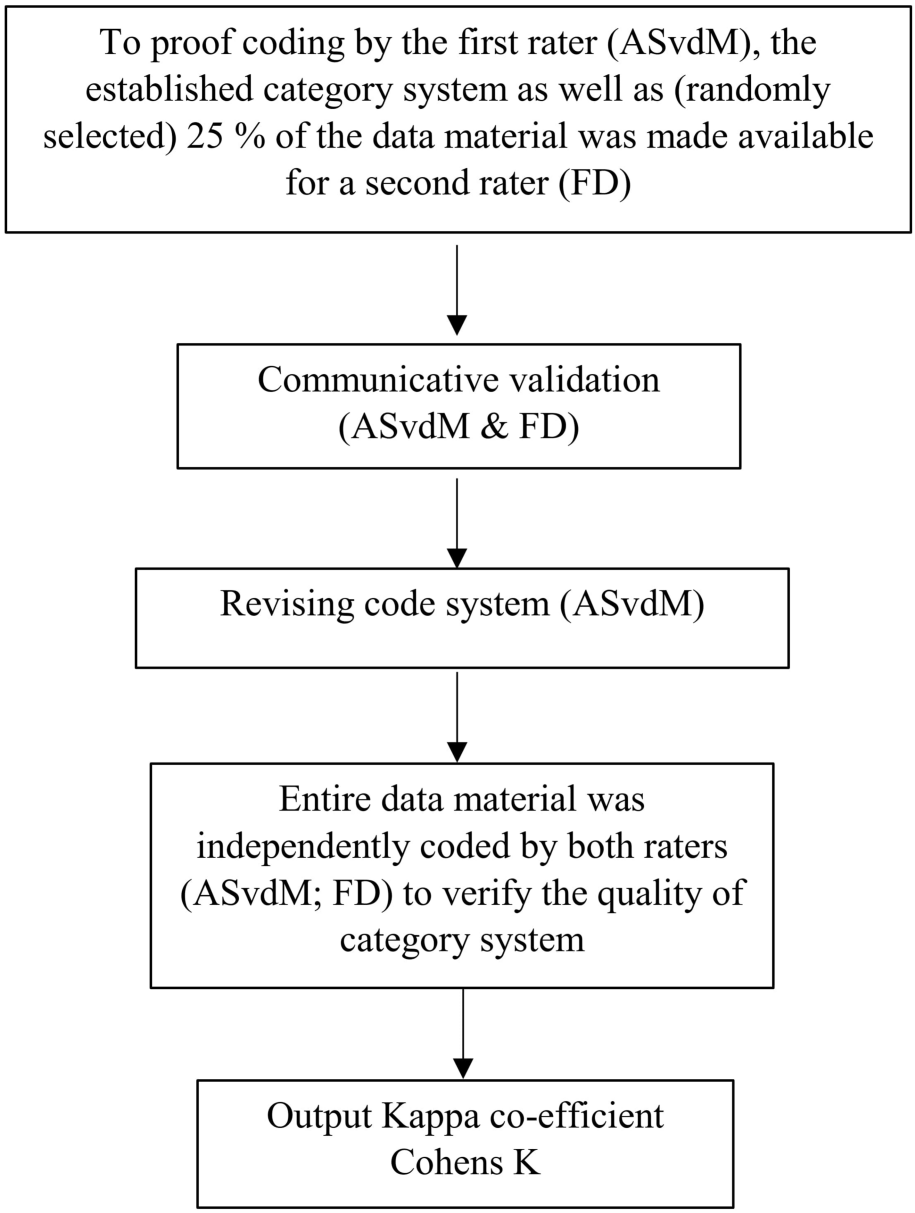

FIGURE 2
Calculation of inter-rater reliability.

smoking, drug and alcohol consumption, unhealthy food, lack of cleanliness, not enough sleep and bad weather as causes for getting a somatic disease.

MC: mental illness

The respondents described mental illness by naming depression, addiction, traumatization, severe anxiety, nightmares, soliloquies, lack of motivation, social withdrawal, fanatical beliefs or "forces of nature that have occupied the mind." One respondent defined an abscess as an expression of mental illness. Another respondent defined cognitive disability as a mental disease. The term 'sick in the head' was also used by some respondents to describe mental illness.

> S1_R6: 'And if you are sick in your head, you do not notice it (laughs).
>
> Interviewer: 'You do not notice?'
>
> S1_R6: 'No, then the others notice (laughs).'

Nine respondents stated that they did not know what mental illness is. Eight respondents said that they knew that mental illness exists but could not describe it. Respondents named poor sleep, disputes, traumatic experiences, stress, experiences of fleeing and the absence of parents as potential causes of mental illness. Only two segments could be coded, where respondents described the mood during mental illness. One respondent (S3_R9) said:

> 'But when you are mentally ill, you want to protect yourself, to survive somehow. Experience nothing, just survive.'

TABLE 2 Generated categories for the topic conception of illness.

Main category	Subcategories	Codes total	Amount of documents	Findings in study population
Somatic illness	5	107	24	S1; S2; S3
	Described symptoms of somatic illness	59	24	S1; S2; S3
	Described mood during somatic illness	24	18	S1; S2; S3
	Appraisal of somatic illness	8	6	S1; S2; S3
	Unclear description of somatic illness	8	6	S1; S3
	Described causes of somatic illness	8	5	S2; S3
Mental illness	6	73	23	S1; S2; S3
	Described symptoms of mental illness	32	15	S1; S2; S3
	Appraisal	16	10	S1; S2; S3
	No knowledge	9	9	S2; S3
	Unclear description	8	7	S1; S2; S3
	Named causes	5	4	S1; S3
	Described mood	3	2	S3
Known somatic health interventions	7	58	23	S1; S2; S3
	Medical consultation	23	16	S1; S2; S3
	Medication	14	11	S1; S2; S3
	Self-care	9	7	S1; S2; S3
	Activity	4	3	S3
	Praying	4	2	S3
	Believing in recovery	3	2	S3
	No rumination	1	1	S1
Known mental health interventions	5	15	8	S1; S2; S3
	Psychotherapy	4	4	S1; S3
	Being active	4	2	S2; S3
	Conversation with friends or caregivers	2	1	S3
	Sports	2	2	S1
	Knowledge about mental illness	1	1	S1
	Self-care	1	1	S3
	Medical consultation	1	1	S1
Changed concept of illness	4	33	19	S1; S2; S3
	Increased HL	15	12	S1; S3
	No significant modification	9	7	S1; S2; S3
	Detachment from religious concepts of illness	5	3	S1; S3
	Now more often or more seriously ill	4	4	S1; S3

Coded document = one respondent; maximum of coded documents = 24.

MC: known somatic health interventions

Respondents named medical treatment and medication as a known somatic health intervention. In the subcategory *self-care* segments were coded with answers of the respondents that included self-care strategies like avoiding stress, drinking a lot and staying in bed when you are ill. Furthermore, respondents named healthy nutrition, praying and to believe in your own recovery as a possible intervention for somatic illness.

MC: known mental health interventions

The interventions mentioned by the respondents were psychotherapy, social activities, sports, self-care, medical consultation

and knowledge about mental illness. Respondents also named talking to friends or caregivers as a helpful strategy.

MC: changed concept of illness

Twelve respondents stated that their knowledge about disease and how to deal with it had improved since coming to Germany. On the one hand, they had learned more about the causes and ways in which diseases spread since their arrival. On the other hand, they had gained knowledge about disease prevention, compared to the time before coming to Germany. Three respondents stated that they did not know the difference between mental and somatic illnesses before coming to Germany.

> '(...) Before/when I was a child, I didn't exactly know what mental and somatic illness is. But in Germany, of course, it became clearer to me, and now as you're an adult, you discuss things more.' (S3_R7)

One respondent reported that his own mental illness had increased his knowledge and dealing with it.

> 'Well, I used to be like that, all childish. Okay, I had no idea what to do, whenever I got sick, I went to the doctor and stuff. Otherwise, not at all, well, I didn't know what to do when you get crazy, what to do when you are sick in the head, (...). But then I came here [Germany], I experienced it myself, and I learned what to do.' (S1_R6)

Other respondents named that they have now a greater knowledge about health-promoting behaviors, such as drinking water, doing sports and paying attention to nutrition. The respondents also cited the transfer of knowledge by doctors, caregivers and school as the cause for their increase in knowledge and competence. Seven respondents said that their concept of illness had not changed in recent years and months. Three respondents said that their approach to illness and knowledge of illness had changed because they had distanced themselves from religious concepts of illness.

> 'It used to be like that (...) I was also 13 years old at the time. Being ill was for me, so it had something to do with God a bit. That God can help me.' (S3_R9)

Four respondents also mentioned that they now pay more attention to disease-related topics since their arrival in Germany because they are now more often ill. Causes named were more stress through work and school, and more infections or injuries through activities like playing soccer.

Conception of health

Three main categories were assigned to the topic *Conception of health*. Detailed information on the configuration of the main and subcategories is presented in Table 3.

MC: described aspects of health

Respondents associated health with happiness, satisfaction, and gratitude. They said through health, one can take care of oneself and go to work. Furthermore, respondents defined health by having a healthy body and an active lifestyle, expressed in regular school attendance, doing sports and social activities. Health was also described as the absence of pain, illness, and problems. One respondent said that is it normal to have worries, but if they are not excessive, you are healthy. Four respondents described a healthy mind as a health aspect. They defined a healthy mind as possessing good ability to concentrate, have clear thoughts and being brave enough to go out without your friends.

MC: personal health care strategies

Most respondents highlighted the importance of healthy food for personal health care. One respondent (S3_R1) said:

> 'Um, eating the wrong food, for example: If you cook something, if the window is open, then a lot of bacteria (.) gets on it, then you eat, then you don't see, then you get sick (..). Or the food sticks, I don't know, two three days outside, not in the refrigerator, if you eat then you get sick.'

The respondents mentioned sugary foods, strongly spiced foods or raw meat as unhealthy. One respondent said that it is unhealthy to eat ice cream or cold food in winter, as these would make you sick. Furthermore, aspects of self-care, like doing things that make you happy, living moderately, taking care of yourself, being outdoors and dressing according to the weather were mentioned as health-promoting behavior. Four respondents said it is important to think positively to stay healthy. Furthermore, good body hygiene and cleanness were mentioned as relevant for health care. Regarding alcohol and nicotine consumption, one respondent said that it is important to consume moderately and not exaggerate.

MC: changed concept of health

The respondents were asked if they noticed any modifications in their concepts of health compared to the time before fleeing to Germany. Eight respondents reported a higher level of knowledge, e.g., the necessity of regular medical appointments or which medical services are offered and accepted. Furthermore, they mentioned better accessibility to natural resources like water for regular body hygiene. Access to preventive medical check-ups were cited as a further gain in resources, too, bringing the issue of health maintenance into closer focus for the respondents. Some respondents stated that a change in their attitude toward life had also altered their perception of health. One respondent (S3_R9) said:

> B: At the beginning I thought, heh, why are they acting so childish, even though they're grown up having fun. With us, all adults are just adults. And here, when you see an adult caretaker having fun, I thought, hey, she's a woman, not a child, why she have fun? (...) she was actually healthy, I was sick then, maybe, I don't know. Maybe I'm still sick, but now it's completely changed. For me, anyone who has fun in life is healthy, anyone who takes life too seriously is not healthy for me.
>
> I: And how did you get this attitude?
>
> B: By seeing so many other people. For example, the adults who are having fun (...). There is no such thing that an adult must act

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TABLE 3 Generated categories for the topic conception of health.

Main category	Subcategories	Codes total	Amount of documents	Findings in study population
Described aspects of health	6	90	24	S1; S2; S3
	Happiness	25	18	S1; S2; S3
	Healthy and active body	25	16	S1; S2; S3
	Health as a high value	22	20	S1; S2; S3
	Absence of illness, pain and problems	10	10	S1; S2; S3
	Healthy mind	6	4	S1; S3
	Unclear description of health	2	2	S2; S3
Personal health care strategies	10	82	22	S1; S2; S3
	Nutrition	30	19	S1; S2; S3
	Self-care	15	13	S1; S2; S3
	Sports	11	9	S1; S3
	Social activities	7	6	S1; S3
	Room cleanliness	4	4	S1; S3
	Positive thinking	4	4	S1; S2; S3
	Unclear description	4	3	S1; S2
	Body hygiene	3	3	S1; S3
	Moderate consumption of alcohol and nicotine	3	2	S3
	Sleep	1	1	S3
Modifications in concept of health	5	24	16	S1; S3
	Increased HL	10	8	S1; S3
	Changed attitude to life	4	4	S1; S3
	More focus on health	4	4	S1; S3
	Changed eating habits	3	3	S1; S3
	No noticed modification	3	3	S1; S3

Coded document = one respondent; maximum of coded documents = 24.

> like this, a doctor must act like that, with us it's highly structured, you know, children must act like that, a 15-year-old must act like that.

Knowledge about health care structures in the country of origin

Three main categories were assigned to the topic *Knowledge about health care structures in the country of origin*. Detailed information on the configuration of the main and subcategories is presented in Table 4.

MC: knowledge about mental health care structures

Most respondents stated, that there were no or rare offers for mental health care in their country of origin. Some respondents were unsure about the existence of care services and said that if they did exist, they were more likely to be in large cities. Some respondents talked about inpatient psychiatric care:

> 'But I know something about the capital, because I read it on the internet, Damascus, Syria. Because if you have something in your brain or something like that, you are sent straight to a locked hospital. Then you go crazy. That's what they call crazy.' (S1_R8)

Six respondents could not provide any information on mental-health care structures in their country of origin. Furthermore respondents stated that if someone is mentally ill, the family must care for that person. Religious practices like praying, reading the Quran, or contacts like the imam or a priest were named as mental-health care structures by six respondents as possibilities in case of mental illness. Also, spiritual ceremonies were reported by the respondents:

> 'There is still this water, as I said, this healing water. If they are aggressive, you can let the [people] in there. They have to go in there twice a week to wash, but I don't know much about it.' (S3_R9)

One respondent said that although such services exist, they are not used as often in Germany, because people are worried about basic supplies:

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TABLE 4 Generated categories for the topic knowledge about health care structures in the country of origin.

Main category	Subcategories	Codes total	Amount of documents	Findings in study population
Knowledge about mental health care structures	8	62	23	S1; S2; S3
	No or rare offers	14	12	S1; S2; S3
	Inpatient psychiatric care	12	7	S1; S2; S3
	No knowledge about mental health care	8	6	S2: S3
	Family care	6	5	S1; S2; S3
	Religious care and habits	10	6	S1; S2; S3
	Outpatient medical care	5	4	S1; S2
	Spiritual ceremonies	4	3	S2; S3
	Psychotherapeutic care	3	3	S1; S3
Knowledge about somatic health care structures	4	11	6	S2; S3
	In- or outpatient medical care	6	5	S2; S3
	Spiritual ceremonies	2	2	S2; S3
	Religious care and habits	2	2	S3
	Family care	1	1	S3
Known concepts of illness	5	9	5	S1; S3
	Illness as a 'work of god'	3	1	S3
	Illness as 'problem with the head'	2	2	S1
	Illness 'through ghosts'	2	1	S1
	Mental illness as 'untreatable illness'	1	1	S1
	Illness as madness	1	1	S1

Coded document = one respondent; maximum of coded documents = 24.

> 'Because everywhere is, um, mental illness is everywhere is, but the problem is really a completely different one. In Germany, you have dinner, a roof over your head, food and money in your pocket at least as much as you need. Yes, in another country, the two countries I was allowed to experience, we didn't think about psychology or whatever, because we had so many other serious problems (…).' (S3_R7)

Psychotherapeutic care was named by three respondents as a known care structure for mental health in their country of origin.

MC: knowledge about somatic health care structures

Similar to the main category *mental health care structures*, inpatient and outpatient medical care, family care and healing through religious or spiritual acts were named as care structures by the respondents. Respondents emphasized the scarcity of medical care and its exorbitant costs.

MC: known concepts of illness

Five respondents reported being aware of mental-illness concepts from their country of origin that they do not share themselves. They stated that sometimes mental illness is seen as 'work of God', who determines the health or illness of people. According to other concepts, respondents stated that if someone is mentally ill, they must be possessed by a spirit and can only be treated by a healer. They also mentioned that mental illness is defined as a 'problem of the head' and that some mental illnesses are 'untreatable'.

Perceptions regarding mental health care structures in Germany

Only one main category was assigned to the topic *Perceptions regarding mental health care structures in Germany*. Detailed information on the configuration of the main category is presented in Table 5.

MC: understanding of psychotherapeutic care

Respondents of S1 and S3 mentioned in particular biographical and solution-oriented conversations as a part of psychotherapeutic care. One respondent said:

> 'That you [psychotherapist] guide me like a little child and guide me back into life and I get along again. And those topics I never wanted to talk about with normal people/You are like mirror for me, for these things where my compatriots look at me so strangely, you are always open. Then you're a good mirror.' (S3_R9)

Furthermore, four respondents also named support for problems as a psychotherapeutic scope. Three respondents could not describe aspects of psychotherapeutic care.

TABLE 5 Generated categories for the topic perceptions regarding mental health care structures in Germany.

Main category	Subcategories	Codes total	Amount of documents	Findings in study population
Understanding of psychotherapeutic care	5	39	18	S1; S3
	As biographical and solution-oriented conversations	27	15	S1; S3
	As support for problem solving	5	4	S1
	Unclear perception of psychotherapeutic care	4	3	S1; S3
	As prescription of medication	2	2	S1; S3
	As intelligence diagnostics testing	1	1	S3

Coded document = one respondent; maximum of coded documents = 24.

> 'Therapist? I don't know, I didn't study. (..). That's different, that's not like family doctor (...). Therapist? That's a much different thing. I don't know that.' (S3_R5)

Coding comparison among the samples

After presenting our total sample's results along the main categories and their subcategories, sample differences are presented below alongside the comparison of the subcategories' code segment sizes. This analysis of coding at the sample level enables an exploratory comparison of participants considering age differences, effects due to the different types of housing and clinical to non-clinical problems. The main categories *mental illness*, *personal health care strategies* and *known mental health interventions* were selected for further analysis, based on their relevance for psychotherapeutic practice, research and MHL.

Comparing sizes of code segments in subcategories of the main category mental illness

Considering the coded segment sizes of the subcategory *Described symptoms*, we observed more coding in the interview material of S1 (55.2%) and S3 (42.9%), i.e., adolescent participants, than in the younger S2 material (11.1%). Compared to the interview material of S1 (24.1%) and S3 (22.9%), fewer coding of the subcategory *Appraisal* (of mental illness) could be made in the material of S2. Furthermore, we coded the *No knowledge* subcategory with a segment size covering 55.6% in S2. 11.4% of coded segments were assigned to the subcategory *No knowledge* also in S3's data. In comparison, no coding was undertaken in S1's data, which discloses knowledge about mental illness in the group with clinical problems. The highest percentage of code segments regarding the *Unclear description* subcategory was also made in S2's interview material (22.9%), a finding in line with our analysis' previous outcomes showing that younger respondents could not at all or just barely define mental illness or aspects thereof. In the older S1 and S3 samples, we coded segments for this subcategory, thus indicating some concepts of mental illness among some respondents. S2's data enabled no coding for the *Named Causes* subcategories; however, this subcategory yielded a similar amount of code-able material for S1 and S3, namely with 6.9% in S1 and 8.6% in S3. Detailed information on our comparison of code segment size of subcategories of the main category mental illness is found in Figure 3.

Comparing sizes of code segments in subcategories of the main category personal health care strategies

The coded segments of the main category *Personal health care strategies* were almost equal in size. The exception here was subcategory *Nutrition's* segment coding in S2 material. Compared to the material from S1 (30%) and S3 (35.7%), we found that a total of 60% coded segments were retrievable from S2 material that were assignable to this subcategory. In the material from all samples, we coded similarly sized segments assigned to the *Self-care* subcategory. Relatively medium-sized segments, were found in the material of S1 (13.3%) and S3 (16.7%) for the subcategory *Sports* and in the material of S1 for the subcategory *Social activities* with a segment coverage of 16.7%. Again, we detected fewer coded segments across subcategories in S2 material than in S1 and S3 material. S1 and S3 participants' responses to health promotion strategies were similar, evident in their segment coverage across subcategories. S1 material only enabled more codes regarding the *Social Activities*, *Body Hygiene* and *Unclear Description* subcategories. Our illustration of the comparison of coded segment sizes can be seen in Figure 4.

Comparing sizes of code segments in subcategories of the main category known mental health intervention

After comparing the segment sizes of subcategories of the main category *Known mental health interventions*, we found that all segments in S2 interview material were coded in the *Being active* subcategory. The remaining interview material from S2 yielded no coded segments. In S1's interview material the *Psychotherapy* subcategory was the one with the most frequently coded interview material (42.9%), followed by *Sports* (28.6%) and *Medical Consultation* (14.3%) in terms of segment size. When considering the S3 interview material's coded segment sizes, the *Being Active* subcategory also proved to be the subcategory with the largest coded area (42.9%), as was the case in S2's interview material. In this analysis of the main category, our sample comparison shows that the younger S2 participants were least able to provide information on known mental health interventions. Compared to S1, S3 participants mentioned

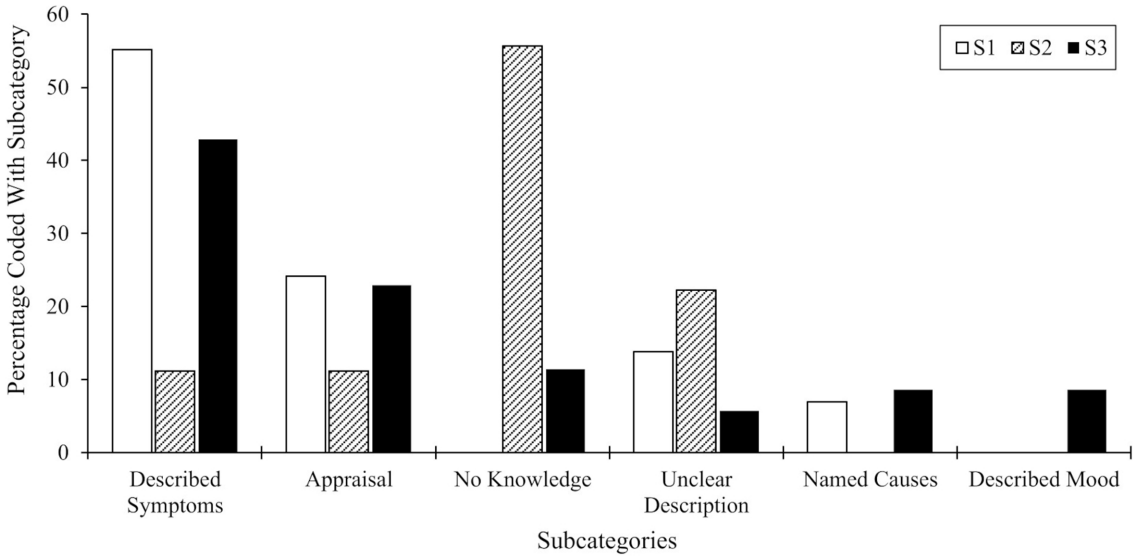

FIGURE 3
Comparison of code segment size of subcategories of the main category mental illness.

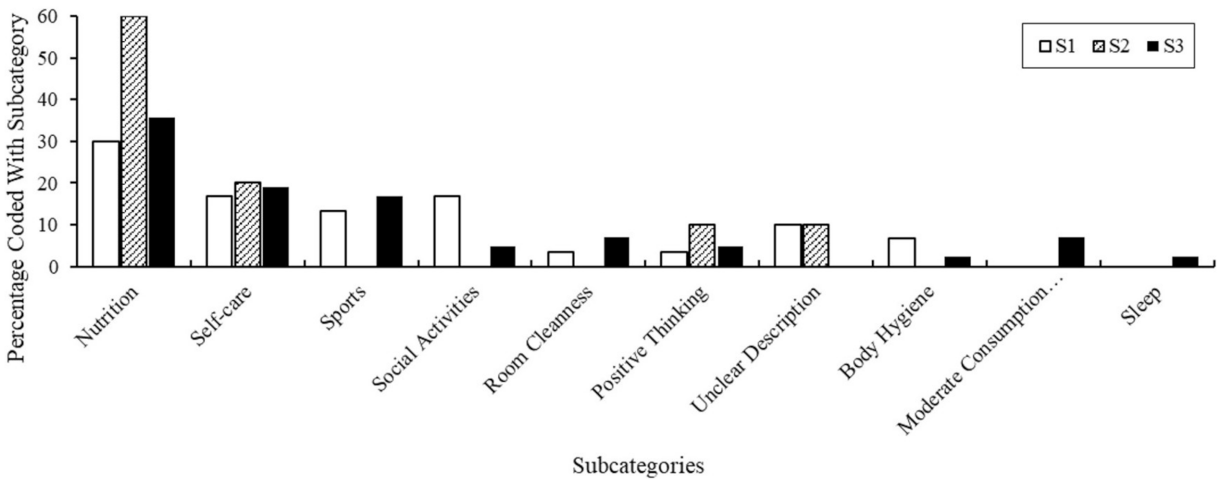

FIGURE 4
Comparison of code segment size of subcategories of the main category personal health care strategies.

social and active mental health interventions (*Being active*; *Conversations with friends and caregivers*). Our diagram of the comparison of coded segment sizes is in Figure 5.

Discussion

To assess conceptions of illness and health in refugee youths, we conducted a semi-structured interview. To classify our results, we examined their knowledge on both mental as well as somatic illness and health. Below we discuss our study results in the context of prior research, and implications for psychotherapeutic practice, research and MHL.

Differences in the extent and quality of knowledge

The subcategories of the main category *Somatic illness* were coded more frequently than the subcategories *Mental illness* while analyzing our interview material. Due to this we conclude, that the extent of knowledge about somatic illnesses is greater than that of mental illnesses in refugee youth. However, the interview excerpts suggest some misconceptions about potential health hazards, e.g., for example, that eating ice cream leads to a cold. Little knowledge and difficulties in understanding the term *mental health* of refugee youth are factors already reported in previous studies where Syrian refugee adolescents were interviewed (Filler et al., 2021). This is also reflected by the fact our respondents revealed next to

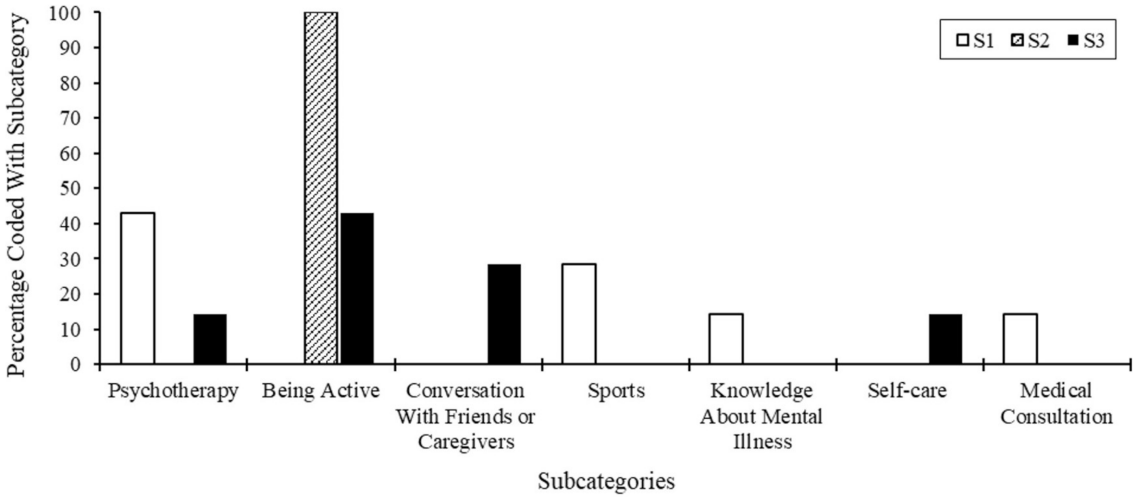

FIGURE 5
Comparison of code segment size of subcategories of the main category known mental health intervention.

no knowledge about or any awareness of psychotherapy in Germany. Based on this result we suggest to impart basic, age-appropriate knowledge about illness concepts at the beginning of therapy to facilitate disorder-specific psychoeducation. However, individual and religious concepts of health and illness should also be taken into account, to prevent them from becoming barriers in psychotherapeutic work (Ellis et al., 2010; Colucci et al., 2015).

A mandatory questionnaire introduced at the beginning of therapeutic contact to capture personal (mental) health-related concepts of children and adolescents would help to meet this need. Concerning knowledge about health care treatments, our respondents knew more about treatment options for somatic than for mental health. One potential reason for this is the higher utilization of somatic health care services and comparatively low utilization of mental health care services by refugee youth (Barghadouch et al., 2016). Furthermore, in our study respondents that are living in YWF possessed more knowledge about health care structures, than respondents living with their families, stating that they had been introduced to the German health care system by staff at their YWF and were thus in contact with various health care services. To counteract the barriers identified in our and previous studies concerning the utilization of mental health services in particular, detailed information should be made available to refugee families regarding local health structures. Information should include details regarding the accessibility of specific health care offer, the kind of offer (outpatient or inpatient) and the scope of the offer (which health sector is addressed?). Therefore, future research should focus on the analysis of (M)HL of families in order to create offers that meet the needs of families. Research on the transgenerational transmission of health-related knowledge in refugee families, before and after flight, would also be relevant to capture external factors that threaten or promote the transmission of MHL.

Differences in appraising somatic and mental illness

Our study's respondents revealed more negative attitudes toward mental illnesses than toward somatic illnesses. This finding of ours is also in line with previous research in which UASC in particular were interviewed (Byrow et al., 2020). Our participants' impressions of psychiatric admissions in their country of origin were mainly negative. Negative beliefs and assumptions about mental illness and care (like fearing stigmatization) can impede further engagement with mental health issues (Majumder et al., 2015; Aguirre Velasco et al., 2020). Young people may avoid attending informational or educational services on mental health topics, thus preventing any improvement in MHL, which in turn would hinder the utilization of mental health care among young refugees (Filler et al., 2021). To counter this, refugee children and young people in particular should have access to low-threshold information services to be accessed without the help of third parties such as interpreters. Previous studies have shown that working with interpreters can discourage young refugees from speaking openly about their mental health issues if they fear the interpreter might know someone in the refugee's family or if they differ greatly in age, dialect, or ethnicity (Colucci et al., 2015).

Such services could be information websites or apps configured in different languages not requiring that users provide personal data. Another possible way to promote MHL while addressing stigma concerns might be the implementation of health-related knowledge in school curricula. This might make it easier for (refugee) students to engage with and learn about mental health content within their peer group. In psychotherapeutic settings, data protection should be considered and sufficiently explained to refugee patients. All persons involved in therapy, e.g., youth welfare workers, should also be informed in this regard and be asked to respect confidentiality.

Factors promoting MHL

The respondents describe health as an important value, which goes hand in hand with an active and healthy lifestyle and body. Given the importance of health, the associated feeling of happiness, and taking into account that attitudes regarding mental health facilitate recognizing and seeking help (Jorm, 2012), this can be seen as a MHL promoting factor. Also, the amount of known health promoting strategies described by the interviewed children, adolescents and young adults demonstrates that they have knowledge of

health-promoting behaviors, however mostly regarding somatic health. One exception were social activities as a mental health-promoting strategy, which follows research findings that have identified social contact as a protective factor with respect to mental illness (Höhne et al., 2020).

Despite language barriers, psychological stress, and living alone and away from their families, it was our older S1 andS3 respondents who demonstrated more knowledge about health and illnesses. Further research should therefore explore the MHL of refugee children and adolescents growing up in families longitudinally to examine the influence of age, length of residence, and family factors on MHL. Our research suggests that growing up in YWF might be an MHL-promoting factor for some of the respondents, as the knowledge of staff and compulsory involvement with the healthcare system leads to knowledge regarding the use of healthcare services. On the other hand, considering that the majority of refugee youths placed in youth welfare in Germany are unaccompanied refugees and live in Germany without close relatives, it is possible that fleeing unaccompanied as well as the unaccompanied stay of the youth may be associated with greater independence, and a greater need of self-care, which may positively influence MHL. Future research should therefore investigate whether unaccompanied status is a factor promoting MHL. There is evidence of high psychological stress among refugee children and adolescents (Blackmore et al., 2020). As we expected, our study indicated that patient sample S1 participants had more knowledge about mental illness and its treatment options than the S2 and S3 respondents with no reported mental burden, as they were already involved in the diagnostic process at a psychotherapeutic outpatient clinic when they were interviewed. However, this result not necessarily implies that MHL is related to psychological stress, since a number of confounding factors (e.g., selection bias) might influence this association. Again, longitudinal studies could shed light on whether and how mental illness influences MHL in refugee children and adolescents.

Conclusion

Our research revealed that refugee youth show more knowledge regarding somatic than mental illness and their respective treatment. Our findings reveal the need to improve the MHL of refugee children, adolescents and young adults, since low MHL can lead to low utilization of mental health services and associated chronicity of disorders. To help alleviate the known stigmatization fears of respondents, low-threshold services would be a means through which such populations could gain knowledge about mental illnesses and their treatments. Finally, our study also revealed MHL-facilitating factors such as living in YWF. To verify these results, longitudinal studies that also compare refugee and non-refugee populations should be pursued.

Study limitations

A limitation of our study is a missing comparison group of non-refugee youths. This limits the interpretation of our results in the sense that we have no norm values to compare the responses of our participants to. As this is a major issue for many refugee-related MHL projects, we are currently conducting a qualitative study of MHL in German adolescents (Durlach et al., in preparation)[1]. An additional limitation is our sample's composition. We included more male adolescents and young adults than children or female adolescents or young adults in our research. Also, the majority of respondents were unaccompanied refugees. Recruitment of participating youth and young adults stopped when content saturation was reached. Unfortunately, due to the outbreak of the COVID-19 pandemic was not possible to recruit further refugee children at schools, even though a larger number of participants would have been desirable here. On the one hand, the heterogeneity of the sample in total and in terms of the broad age range and the diversity of settings from which the participants, children, adolescents, and young adults, were recruited, can be seen as a strength of the study. On the other hand, this heterogeneity of our groups also limits conclusions regarding group differences. Further studies should, as already mentioned, target refugee families and especially female children and adolescents. Furthermore, when considering the results, it must be taken into account that only patients who feel comfortable in the outpatient therapeutic setting agreed to take part in the study. Therefore, it cannot be ruled out that their response behavior was influenced by a basically positive attitude toward health care. As some of these interviews were conducted with help from interpreters, we cannot rule out that some statements from the interviewees were incompletely or incorrectly conveyed. The translation of the interview material from German into English may also have led to data imprecision. To counter this, we conducted our analysis on the German material and only translated it into English afterwards. The aspect of potential data loss due to inaccurate translations should be considered in future qualitative interview designs involving multilingual samples when conceiving the research design.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Ethics Committee of the Department of Psychology of Philipps University Marburg. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

AvdM, FD, and HC were responsible for the conception and design of work. AvdM was responsible for conducting the

1 Durlach, F., van der Meer, A.S., Stracke, M., and Christiansen, H. (in preparation). "I don't know what it means, because otherwise I would do it better." Mental health literacy of children and adolescents with mental illnesses. A qualitative content analysis.

interviews, data collection, and the initial qualitative data analysis, and responsible for drafting the article. AvdM, KS, and FD were involved in the data interpretation. HC was responsible for supervision of the research study and the article. KS, FD, and HC provided critical feedback and helped shape the research, analysis, and manuscript and gave final approval of the version to be published.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1107889/full#supplementary-material

References

Aguirre Velasco, A., Cruz, I. S. S., Billings, J., Jimenez, M., and Rowe, S. (2020). What are the barriers, facilitators and interventions targeting help-seeking behaviours for common mental health problems in adolescents? A systematic review. *BMC Psychiatry* 20:293. doi: 10.1186/s12888-020-02659-0

Barghadouch, A., Kristiansen, M., Jervelund, S. S., Hjern, A., Montgomery, E., and Norredam, M. (2016). Refugee children have fewer contacts to psychiatric healthcare services: an analysis of a subset of refugee children compared to Danish-born peers. *Soc. Psychiatry Psychiatr. Epidemiol.* 51, 1125–1136. doi: 10.1007/s00127-016-1260-1

Bean, T., Eurelings-Bontekoe, E., Mooijaart, A., and Spinhoven, P. (2006). Factors associated with mental health service need and utilization among unaccompanied refugee adolescents. *Adm. Policy Ment. Health Ment. Health Serv. Res.* 33, 342–355. doi: 10.1007/s10488-006-0046-2

Blackmore, R., Gray, K. M., Boyle, J. A., Fazel, M., Ranasinha, S., Fitzgerald, G., et al. (2020). Systematic review and meta-analysis. The prevalence of mental illness in child and adolescent refugees and asylum seekers. *J. Am. Acad. Child Adolesc. Psychiatry* 59, 705–714. doi: 10.1016/j.jaac.2019.11.011

Bundesamt für Migration und Flüchtlinge (BAMF) (2022). "Aktuelle Zahlen,". Available at: https://www.bamf.de/DE/Themen/Statistik/Asylzahlen/AktuelleZahlen/aktuellezahlen-node.html (accessed November 17, 2022).

Bundesfachverband unbegleitete minderjährige Flüchtlinge (BumF) (2021). "Die Situation junger geflüchteter Menschen in Deutschland – Auswertung der Online-Umfrage 2021,". Available at: https://b-umf.de/material/umfrage-2021/ (accessed November 17, 2022).

Byrow, Y., Pajak, R., Specker, P., and Nickerson, A. (2020). Perceptions of mental health and perceived barriers to mental health help-seeking amongst refugees: a systematic review. *Clin. Psychol. Rev.* 75:101812. doi: 10.1016/j.cpr.2019.101812

Colucci, E., Minas, H., Szwarc, J., Guerra, C., and Paxton, G. (2015). In or out? Barriers and facilitators to refugee-background young people accessing mental health services. *Transcult. Psychiatry* 52, 766–790. doi: 10.1177/1363461515571624

Colucci, E., Szwarc, J., Minas, H., Paxton, G., and Guerra, C. (2014). The utilisation of mental health services by children and young people from a refugee background: a systematic literature review. *Int. J. Cult. Ment. Health* 7, 86–108. doi: 10.1080/17542863.2012.713371

De Anstiss, H., Ziaian, T., Procter, N., Warland, J., and Baghurst, P. (2009). Help-seeking for mental health problems in young refugees. A review of the literature with implications for policy, practice, and research. *Transcult. Psychiatry* 46, 584–607. doi: 10.1177/1363461509351363

Demazure, G., Baeyens, C., and Pinsault, N. (2021). Review. Unaccompanied refugee minors' perception of mental health services and professionals: a systematic review of qualitative studies. *Child Adolesc. Mental Health* 27, 268–280. doi: 10.1111/camh.12486

Deutsches Jugendinstitut e.V. (DJI) (2020). DJI-Kinder- und Jugendmigrationsreport 2020. Datenanalyse zur Situation junger Menschen in Deutschland.

Dresing, T., and Pehl, T. (2018). *Praxisbuch Interview, Transkription & Analyse: Anleitungen und Regelsysteme für qualitativ Forschende. 8. Auflage*. Marburg: Eigenverlag.

Ellis, B. H., Lincoln, A. K., Charney, M. E., Ford-Paz, R., Benson, M., and Strunin, L. (2010). Mental health service utilization of Somali adolescents. Religion, community, and school as gateways to healing. *Transcult. Psychiatry* 47, 789–811. doi: 10.1177/1363461510379933

Fazel, M., and Betancourt, T. S. (2018). Preventive mental health interventions for refugee children and adolescents in high-income settings. *Lancet Child Adolesc. Health* 2, 121–132. doi: 10.1016/S2352-4642(17)30147-5

Filler, T., Georgiades, K., Khanlou, N., and Wahoush, O. (2021). Understanding mental health and identity from Syrian refugee adolescents' perspectives. *Int. J. Ment. Health Addict.* 19, 764–777. doi: 10.1007/s11469-019-00185-z

Fox, S., Kramer, E., Agrawal, P., and Aniyizhai, A. (2021). Refugee and migrant health literacy interventions in high-income countries a systematic review. *J. Immigr. Minor. Health* 24, 207–236. doi: 10.1007/s10903-021-01152-4

Greve, W., and Wentura, D. (1997). *Wissenschaftliche Beobachtung: Eine Einführung*. Weinheim: PVU/Beltz.

Halcón, L. L., Robertson, C. L., Savik, K., Johnson, D. R., Spring, M. A., Butcher, J. N., et al. (2004). Trauma and coping in Somali and Oromo refugee youth. *J. Adolesc. Health* 35, 17–25. doi: 10.1016/j.jadohealth.2003.08.005

Henkelmann, J.-R., de Best, S., Deckers, C., Jensen, K., Shahab, M., Elzinga, B., et al. (2020). Anxiety, depression and post-traumatic stress disorder in refugees resettling in high-income countries. *Syst. Rev. Anal. BJPsych Open* 6:e68. doi: 10.1192/bjo.2020.54

Höhne, E., van der Meer, A. S., Kamp-Becker, I., and Christiansen, H. (2020). A systematic review of risk and protective factors of mental health in unaccompanied minor refugees. *Eur. Child Adolesc. Psychiatry* 31, 1–15. doi: 10.1007/s00787-020-01678-2

International Committee of the Red Cross (2004). "*Inter-agency Principles on Unaccompanied and Seperated Children*,". Oxford: Oxford bibliographies.

Jarlby, F., Goosen, S., Derluyn, I., Vitus, K., and Jervelund, S. S. (2018). What can we learn from unaccompanied refugee adolescents' perspectives on mental health care in exile? *Eur. J. Pediatr.* 177, 1767–1774. doi: 10.1007/s00431-018-3249-0

Jorm, A. F. (2012). Mental health literacy. Empowering the community to take action for better mental health. *Am. Psychol.* 67, 231–243. doi: 10.1037/a0025957

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., and Pollitt, P. (1997). "Mental health literacy". A survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Med. J. Aust.* 166, 182–186. doi: 10.5694/j.1326-5377.1997.tb140071.x

Khuu, B. P., Lee, H. Y., Zhou, A. Q., Shin, J., and Lee, R. M. (2016). Healthcare providers' perspectives on parental health literacy and child health outcomes among Southeast Asian American immigrants and refugees. *Child Youth Serv. Rev.* 67, 220–229. doi: 10.1016/j.childyouth.2016.06.006

Kindig, D. A., Panzer, A. M., and Nielsen-Bohlman, L. (2004) *Health literacy: a prescription to end confusion*. Washington, DC: National Academies Press.

Kruse, J. (2015). *Qualitative Interviewforschung. Ein integrativer Ansatz. 2, überarbeitete Auflage*. Weinheim, Basel: Beltz.

Kuckartz, U. (2016). *Qualitative Inhaltsanalyse: Methoden, Praxis, Computerunterstützung. 3., überarbeitete Auflage, Online-ausgabe*. Weinheim, Basel: Beltz Juventa.

Kutcher, S., Wei, Y., and Coniglio, C. (2019). Mental health literacy: past present, and future. *Can. J. Psychiatry* 61, 154–158. doi: 10.1177/0706743715616609

Majumder, P., O'Reilly, M., Karim, K., and Vostanis, P. (2015). This doctor, I not trust him, I'm not safe'. The perceptions of mental health and services by unaccompanied refugee adolescents. *Int. J. Soc. Psychiatry* 61, 129–136. doi: 10.1177/0020764014537236

Mayring, P. (2015). *Einführung in die Qualitative Sozialforschung. 5 überarbeitete Auflage*. Weinheim, Basel: Beltz Juventa.

McKeary, M., and Newbold, B. (2010). Barriers to Care. The Challenges for Canadian Refugees and their Health Care Providers. *J. Refug. Stud.* 23, 523–545. doi: 10.1093/jrs/feq038

Nakeyar, C., Esses, V., and Reid, G. J. (2018). The psychosocial needs of refugee children and youth and best practices for filling these needs. A systematic review. *Clin. Child Psychol. Psychiatry* 23, 186–208. doi: 10.1177/1359104517742188

Slewa-Younan, S., Mond, J., Bussion, E., Mohammad, Y., Uribe Guajardo, M. G., Smith, M., et al. (2014). Mental health literacy of resettled Iraqi refugees in Australia. Knowledge about posttraumatic stress disorder and beliefs about helpfulness of interventions. *BMC Psychiatry* 14:320. doi: 10.1186/s12888-014-0320-x

Spiker, D. A., and Hammer, J. H. (2019). Mental health literacy as theory: current challenges and future directions. *J. Mental Health* 28, 238–242. doi: 10.1080/09638237.2018.1437613

United Nations High Commissioner for Refugees (UNHCR) (2022). "Ukraine Refugee Situation,". Available at: https://data.unhcr.org/en/situations/ukraine (accessed November 17, 2022).

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Elisa Pfeiffer,
Ulm University Medical Center, Germany

REVIEWED BY
Fabienne Hornfeck,
Deutsches Jugendinstitut, Germany
Weili Lu,
Rutgers, The State University of New Jersey, United States

*CORRESPONDENCE
Carlijn Maria Van Es
✉ c.van.es@arq.org

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Trauma-focused treatment for traumatic stress symptoms in unaccompanied refugee minors: a multiple baseline case series

Carlijn Maria Van Es[1,2]*, Merel E. Velu[1,2], Marieke Sleijpen[2], Niels van der Aa[2], Paul A. Boelen[1,2] and Trudy Mooren[1,2]

[1]Department of Clinical Psychology, Utrecht University, Utrecht, Netherlands, [2]ARQ Centrum'45, ARQ National Psychotrauma Centre, Diemen, Netherlands

Introduction: Unaccompanied refugee minors (URMs) are at increased risk of developing mental health problems, such as symptoms of posttraumatic stress disorder (PTSD) and depression. In addition, URMs face several barriers to mental health care. Few studies have evaluated trauma-focused interventions for URMs that target these issues. The current study evaluated a multimodal trauma-focused treatment approach for URMs. It aimed to provide an initial indication of the effectiveness of this treatment approach and to provide a qualitative evaluation assessing treatment satisfaction of the participating URMs.

Methods: A mixed-methods study was conducted among ten URMs, combining quantitative data with qualitative data through triangulation. Quantitative data were collected using a non-concurrent multiple baseline design in which repeated, weekly assessments were carried out during a randomized baseline period, during treatment, and during a 4-week follow-up period. Questionnaires assessing PTSD (Children's Revised Impact of Event Scale) and symptoms of depression (The Patient Health Questionnaire-9, modified for adolescents) were used. In addition, treatment satisfaction was measured post-treatment using a semi-structured interview.

Results: During the qualitative evaluation, all but one URM noted they found the trauma-focused treatment approach useful and felt the treatment had positively impacted their wellbeing. However, the results of the quantitative evaluation did not show clinically reliable symptom reductions at posttest or follow-up. Implications for clinical practice and research are discussed.

Discussion: The current study presents our search in developing a treatment approach for URMs. It adds to the current knowledge about methodological considerations in evaluating treatments for URMs, the potential effects of trauma-focused treatments on URMs, and the implementation of treatments for URMs.

Clinical trial registration: The study was registered in the Netherlands Trial Register (NL8519), 10 April 2020.

KEYWORDS

unaccompanied refugee minors, trauma-focused treatment approach, multiple baseline, mixed-methods, posttraumatic stress disorder, depression

1. Introduction

In 2019, approximately 40% of all refugees in the world were minors (The UN Refugee Agency, 2020). About 7% of the minors applying for asylum in the European Union that year arrived without a primary caregiver (European Migration Network, 2020). These unaccompanied refugee minors (URMs) are more vulnerable to develop psychological complaints than accompanied minors arriving in the country of resettlement with a parent or primary caregiver (Huemer et al., 2009; Vervliet et al., 2014a,b). For example, Derluyn and Broekaert (2008) found that URMs in Belgium were five times more likely to develop severe symptoms of anxiety, depression, and posttraumatic stress disorder (PTSD) than accompanied refugee minors. (Comorbid) PTSD, depression, and anxiety are the most prevalent disorders amongst URMs in Europe (Bamford et al., 2021; Daniel-Calveras et al., 2022). The increased vulnerability to developing mental health problems is assumed to be due to several risk factors, including the separation from their parents, a high exposure to potentially traumatic events, and the loss of their familiar environment and support system, whilst being faced with the continuous stressors associated with migration (McKelvey and Webb, 1995; Derluyn and Broekaert, 2008; Demazure et al., 2018).

URMs in the Netherlands go through the same asylum procedure as adult asylum seekers, but have additional rights to education and guidance. URMs get appointed a guardian by Nidos, a family guardian organization. They receive free housing and education. In addition, URMs without asylum status receive free health care and URMs with asylum status receive health care insurance. URMs in the Netherlands report several daily stressors, including worries about legal status, family reunification, and finances (van Es et al., 2019).

Research shows that certain trauma-focused interventions, including trauma-focused cognitive behavioral therapy (TF-CBT) and Eye Movement Desensitization and Reprocessing (EMDR) adequately address trauma-related complaints in traumatized children without flight experiences (Rodenburg et al., 2009; Goldbeck et al., 2016). In addition, TF-CBT, Narrative Exposure Therapy for children (KIDNET), and EMDR are proven to be promising treatments for traumatized refugee children (Oras et al., 2004; Ehntholt et al., 2005; Onyut et al., 2005; Wadaa et al., 2010; Said and King, 2020; Velu et al., 2022). However, little is known about optimal approaches to diminish distress in URMs (Unterhitzenberger et al., 2015; Demazure et al., 2018). Few studies on psychotherapeutic interventions addressing the specific problems and challenges URMs encounter have been performed. The majority of these studies is solely qualitative or based on case descriptions (Demazure et al., 2018; Unterhitzenberger et al., 2019). This gap in knowledge on interventions might, in part, be due to the barriers faced when offering interventions to URMs. For example, URMs are often preoccupied with continuous daily stressors, such as worries about the wellbeing of their family members and a complex family reunification procedure (Nickerson et al., 2011; van Es et al., 2019). Other barriers include difficulties in establishing a trusting relationship with adults, linguistic and cultural differences, and poor access to services (Bean et al., 2006; Derluyn and Broekaert, 2008; Ni Raghallaigh, 2013; Demazure et al., 2018). As a result, URMs may not receive the help they need. Diminishing these barriers and offering culturally sensitive and accessible interventions to this group of minors are key public health challenges (Ehntholt and Yule, 2006).

To overcome the aforementioned barriers, a culturally-sensitive, multimodal trauma-focused treatment approach specifically for URMs in The Netherlands was developed (Van Es et al., 2021). The multimodal trauma-focused treatment approach aims to diminish and overcome the aforementioned barriers and to address the specific, individual needs of traumatized URMs. The approach is described in more detail in Van Es et al. (2021). Although the approach is trauma-focused, URMs do not have to talk extensively about their traumatic experiences which may help to overcome reluctance to disclose negative experiences. The therapist collaborates with an Intercultural Mediator (ICM) prior to and during each session to further reduce cultural and language difficulties. ICMs are close to the URMs in cultural background and experience. They aim to facilitate communication between the therapist and the URM, as they interpret language and offer knowledge on the cultural background of the URMs. Collaborative work with an ICM is assumed to help in building a trusting relationship and making interventions culturally sensitive. Finally, care is offered at or near the living environment of URMs to allow them to receive the intervention in a familiar environment, to save them the effort of traveling, and to prevent them from feeling different from others because they have to go to a mental health institution. Moreover, as the URMs do not have any travel time, they do not miss so many school hours.

Based on the findings of a feasibility trial (Van Es et al., 2021), it was suggested that the approach partly overcomes barriers to mental health care. To further evaluate the treatment approach, we designed the present study, using a mixed methods, non-concurrent multiple baseline design with ten participants with elevated symptoms of depression and/or PTSD. Although randomized controlled trials (RCTs) are considered the golden standard when evaluating the effectiveness of a program, Demazure et al. (2018) stated that the feasibility of conducting an RCT with URMs is limited. Therefore, Demazure et al. (2018) propose using alternative methods, including small-N designs. An advantage of multiple baseline designs is that they require smaller samples than an RCT, as statistical power is generated by within subject evaluation and participants serve as their own control. A multiple baseline design allows us to distinguish the effect of treatment from that of time and allows for more causal interpretations than an open trial (Arntz et al., 2013; Renner et al., 2016). The aims of the current study were: (1) to provide an initial indication of the effectiveness of this multimodal trauma-focused approach for traumatized URMs and (2) to provide a qualitative evaluation assessing treatment satisfaction of the participating URMs. As this is one of the first studies to examine the effectiveness of this treatment, this study can also inform future research efforts on how to conduct research among URMs.

2. Materials and methods

2.1. Procedure

This study was a collaboration between ARQ Centrum'45 (a specialized mental health care institute for the treatment of complex psychotrauma complaints) and Nidos (a guardianship institution for unaccompanied and separated children under the age of 18). ICMs were employed by Nidos and guardians were informed about the trauma-focused treatment approach by youth care professionals

working at (Nidos). Nidos guardians who observed symptoms of PTSD and/or depression among URMs and barriers to regular mental health care were informed of the possibility to refer URMs to ARQ Centrum'45, in consultation with the minors. All patients who were consecutively referred to ARQ Centrum'45 for the trauma-focused treatment approach between June 2019 and December 2020 and who received the trauma-focused treatment from one of the participating therapists were invited to take part in the study. This time period is equivalent to the study period of the 10 participants. The intervention took 10.5 weeks on average. Because of the COVID-pandemic the study was paused between February 2020 and November 2020 as outreach care could not be offered.

Guardians were informed about the study *via* telephone. Subsequently, the URMs were invited for an intake. A therapist, a researcher from ARQ Centrum'45, an ICM, and -in most instances- the guardian were present during the intake interview. In addition to the intake interview, the researcher and the ICM offered the URMs verbal information about the nature of the study, its purpose, procedures, expected duration, and the possible benefits and risks involved in participation. An information letter and informed consent form were handed out to the URM and, if necessary, translated by the ICM. URMs signed the written informed consent form. For URMs under the age of 16, the legal guardian also signed the written informed consent. The first 10 consecutive eligible participants who agreed to take part in the study were included in the present study.

In this non-concurrent multiple baseline study, we randomized participants over five different baseline (waitlist) periods of 4, 5, 6, 7, and 8 weeks, respectively. A random sequence of 10 different baseline periods was generated using the software package Random Allocation Software (Random Allocation Software, 2004) by an independent researcher NA. The sequence was generated such that each baseline period appeared twice in the sequence. The independent researcher was contacted in order to obtain the baseline period once a new participant was included in the study. During the baseline period, participants did not undergo any intervention.

During this study, the first and last assessments of the URMs were conducted by an independent researcher MV with the help from an ICM. Information on demographic variables and requests for help were collected during the intake interview. Questionnaires measuring symptoms of PTSD (Children's Revised Impact of Event Scale; CRIES-13) and symptoms of depression (The Patient Health Questionnaire-9, modified for adolescents; PHQ-A) were administered weekly during the baseline period, treatment period, and a 4-week follow-up period. These measurements were conducted *via* the telephone by the ICMs. In addition, during this phone call, the ICM asked the following questions: (1) How are you doing? and (2) Do you have any questions? Finally, after the 4-week follow-up period participants were invited for an individual interview conducted by a researcher and ICM to evaluate the trauma-focused treatment. The study was approved by the Medical Ethical Committee of ARQ Centrum'45.

2.1.1. Therapists

The trauma-focused treatment was offered by therapists working at ARQ Centrum'45. Therapists were licensed mental health care workers and trained EMDR and NET-therapists, with multiple years of experience working with refugee minors from different cultural backgrounds. Therapists took part in a one-day training, multidisciplinary consultation, and supervision offered by the study center ARQ Centrum'45. Supervision was organized in team meetings where cases, based on self-reports of therapists, were discussed. Therapists discussed which modules would suit which minor and request for help during multidisciplinary consultation and supervision.

2.1.2. Participants

Ten consecutive patients referred to the trauma-focused treatment approach by their legal guardian or general practitioner were included in this study. Participants were URMs with elevated symptoms of PTSD and/or depression, living in the Netherlands, referred to ARQ Centrum'45, and who received treatment from one of the four participating therapists. In order to be eligible to participate in this study, participants had to meet all of the following criteria: (1) being a URM under the guardianship of Nidos, (2) aged up to 19 (as some URMs may receive extended youth care after turning 18, minors up to 19 years old could be referred for treatment), (3) presenting symptoms of PTSD and/or depression based on psychological evaluation, and (4) with consent to participate in the study from the URM and her/his guardian. Potential participants meeting any of the following criteria were excluded from participation in this study: (1) acute suicidality, (2) acute psychosis, and (3) if there was a need to consult or involve a psychiatrist, for example, when medication or crisis intervention was required. Clinicians checked the criteria based on information from the referral and/or intake interview.

The flowchart can be found in Figure 1. Three participants prematurely terminated treatment. One participant dropped out because outreach care could not be offered because of restrictions due to COVID-19. One participant heard their asylum application was refused and moved to another country. Lastly, one participant reported no complaints after a few sessions and stated she wanted to stop treatment to focus on her daily life.

2.1.3. Treatment approach

The treatment approach consists of approximately eight, 80-min face-to-face sessions targeting ongoing stressors and symptoms of depression and (traumatic) stress. During the first session, a clinical intake interview takes place. In the following sessions, psychoeducation is offered and the treatment rationale is explained. Then, the URMs' lifeline (as derived from KIDNET) is laid out. Next, it is decided during multidisciplinary consultation which treatment modules suited the request for help of the URMs best. The multimodal approach includes cognitive behavioral interventions, i.e., KIDNET, EMDR, activation, and cognitive restructuring and exposure. Treatment modules were chosen based on the request for help and complaints reported by the minor. The approach and the procedure is described in more detail in Van Es et al. (2021).

2.2. Instruments

2.2.1. Symptoms of posttraumatic stress

The CRIES-13 (Children and War Foundation, 1998) was administered to measure posttraumatic stress symptoms. The CRIES-13 is available in several languages (www.childrenandwar.org). The questionnaires were translated to Arabic and Tigrinya by ICMs prior to initiation of the study. The 13-item scale includes three subscales: intrusion, avoidance, and arousal. The subscales are based

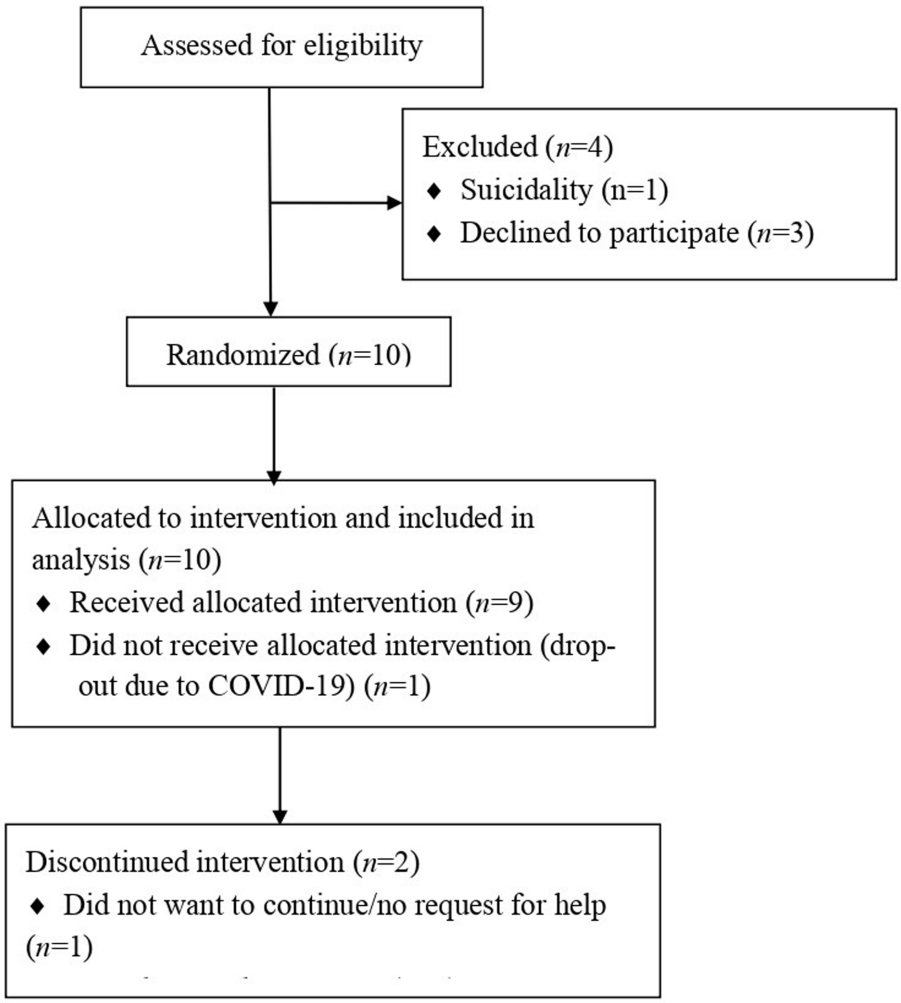

FIGURE 1
Flowchart of participants.

on the Impact of Events Scale (IES; Horowitz et al., 1979) and the DSM-IV. Items are rated on a 4-point scale with anchors 0 = *not at all,* 1 = *rarely,* 3 = *sometimes,* and 5 = *often* with a time period of the past seven days. A PTSD score is calculated by summing all item scores. In line with Verlinden et al. (2015), data from the CRIES-13 were counted as missing if more than one item on a subscale was missing. If a maximum of one item per subscale was missing on the CRIES-13, missing values were replaced by the mean of the completed items on the same subscale, following the method presented by Kocalevent et al. (2013). Higher scores indicate more severe PTSD symptoms. A score ≥ 30 suggests an increased risk of PTSD (Perrin et al., 2005). Good psychometric properties have been reported for the CRIES-13 and it has been used extensively among children exposed to war and with different cultural backgrounds (Smith et al., 2003; Perrin et al., 2005; Verlinden et al., 2014).

2.2.2. Symptoms of depression

To measure symptoms of depression, the PHQ-A (the Patient Health Questionnaire-9, modified for adolescents; Johnson et al., 2002) was used. This measure is adapted from the Patient Health Questionnaire-9. The PHQ-A is available in English and was translated to Arabic and Tigrinya by an ICM prior to initiation of the study. It includes nine items rated on a 4-point scale ranging from 0 (*not at all*) to 3 (*nearly every day*) with a time period of the past 7 days. A total score was computed by summing all individual item scores with higher scores reflecting more severe depressive symptoms. In line with prior studies on the PHQ-9 (Kroenke et al., 2010), data were counted as missing if more than two items were missing. If two or less items were missing on the PHQ-A, missing values were replaced by the mean of the completed items (Kocalevent et al., 2013). Following research on the PHQ-9, a total score ≥ 10 was considered as the cut-off score for detecting depression (Manea et al., 2012). Despite a few differences, the PHQ-9 is mostly consistent with DSM-5 criteria for a major depressive disorder (Kroenke et al., 2001). The PHQ-9 is widely used in studies among adolescents and good psychometric properties have been reported (Kroenke et al., 2001; Richardson et al., 2010). Although psychometric properties of the PHQ-A for refugee minors from different (cultural) backgrounds have, to our knowledge, not yet been studied, the PHQ-A has been shown to have acceptable psychometric properties when completed by Arabic refugee minors (Al-Amer et al., 2020).

2.2.3. Evaluation of treatment

Finally, a semi-structured qualitative interview was conducted by an independent researcher at the follow-up to qualitatively evaluate the treatment and assess treatment satisfaction according to the URMs. The qualitative interview consisted of questions about usefulness ("Was the treatment helpful, and if so, in what way?"; "Is there anything else you need?"), (emotional) change ("If you look back upon how you were feeling/functioning before you received this therapy and how you are doing now – what are the biggest changes?"), satisfaction ("What did you like/dislike about the treatment?"; "Would you recommend the treatment to someone with similar experiences?"), and questions concerning specific treatment components ("What did you think of the number of sessions?"; "Would you have minded traveling to receive treatment sessions?").

2.3. Statistical analysis

2.3.1. Quantitative analysis

First, visual inspection of the data was carried out in order to provide insight in the individual course of PTSD and depressive symptom severity during the baseline, intervention, and post-intervention period. Weekly obtained assessment data of the CRIES-13 and PHQ-A collected during the baseline, intervention, and post-intervention period were plotted in separate graphs for each participant. In order to establish whether observed intraindividual changes in PTSD and depressive symptom severity reflected statistically reliable changes, the Reliable Change Index (RCI) procedure as described by Jacobson and Truax (1992), was used. The RCI is calculated as the ratio between the difference between two test scores obtained at two measurement occasions and the standard error of the difference score (SED). The SED was calculated based on baseline standard deviations derived from the study sample and test–retest reliability coefficients (0.85 and 0.84 for the CRIES-13 and PHQ-9, respectively) reported by studies on the psychometric properties regarding the CRIES-13 and PHQ-9 (Kroenke et al., 2001; Verlinden et al., 2014). Baseline standard deviations in the current sample were comparable to those reported in studies on psychometric properties of the PHQ-A and CRIES-13 (Kroenke et al., 2001; van der Kooij et al., 2013; Verlinden et al., 2014). RCI values larger than 1.96 (or smaller than −1.96) indicate that there is a statistical reliable intraindividual difference between two test scores, i.e., with 95% certainty, the difference between the test scores is due to actual change (improvement or deterioration) rather than measurement error. RCIs were calculated for the difference in PTSD and depressive symptom severity during baseline (t_1–t_2), treatment (t_2–t_3), and follow-up (t_3–t_4). t_1 refers to the first baseline assessment, t_2 to the last baseline assessment, t_3 to the first follow-up assessment, and t_4 to the last follow-up assessment.

Missing data points were left out of the visual graphs. For the RCI of the CRIES-13, respectively one, two, one, and one data points were missing for baseline, pre-treatment, post-treatment and follow-up. For the RCI of the PHQ-A, respectively none, none, one, and one data point was missing for baseline, pre-treatment, post-treatment, and follow-up. Missing data points for the RCI were handled using next observation carried backwards/forwards. Specifically, missing baseline data points were imputed using the first available data point from the baseline period. Missing data points during the pre-treatment period were imputed using the last available data point from the baseline period. If post-treatment data points were missing, these were imputed using the first available data point from the follow-up period. If follow-up data points were missing, these were imputed using the last available data point from the follow-up period.

2.3.2. Qualitative analysis

Minutes taken during the qualitative evaluation interviews were analyzed using MAXQDA 10 (VERBI). The data were then analyzed using the General Inductive Approach (Thomas, 2003). In this approach, data analysis is guided by the evaluation objectives. First, the texts were read thoroughly. Second, specific text fragments that were linked to the research questions were identified. Third, fragments were labelled to create categories. These steps were conducted independently by two researchers CE And MV. During the fourth step, the overlap and redundancy of the categories were reduced. Finally, the most important categories were described. Both researchers discussed the categories until they reached a consensus. These five steps resulted in outcome categories that represented the most important themes.

2.3.3. Integrating data

We conducted a non-concurrent mixed methods study, using a triangulation design (Creswell and Plano Clark, 2011). The aim of this design is to improve our understanding of a specific topic by obtaining complementary data. Using this design, quantitative and qualitative data are collected simultaneously. After data collection, one researcher CE combined, compared, and contrasted the quantitative results and qualitative results. The integrated results are presented, describing whether the qualitative and quantitative data resulted in similar findings as well as highlighting different findings.

3. Results

The average age of participants was 16.5 (SD = 1.08; range 15–18) years. Nine participants (90%) came from Eritrea and one from Syria (10%). Two participants were female (20%). Table 1 summarizes participant's main problems, the main focus of the sessions, no-show/drop-out, and additional comments. Missing data points of participants A, F, and G were due to drop-out. Other missing data points were mostly related to a participant (C) not being able to get out of bed; a participant (E) who experienced too much stress concerning family reunification to continue with the assessments; and a participant (H) did not want to continue with the questionnaires as she found it took too much time.

3.1. Symptoms of PTSD and depression

The baseline, pre-treatment, post-treatment, and follow-up measures are presented in Table 2. Weekly assessments of PTSD and depressive symptom severity are presented in Figure 2. Visual inspection suggests a decrease in symptoms of depression during the baseline period, but negligible change during treatment and follow-up. Moreover, fluctuations in symptoms can be seen in several participants during the baseline period (e.g., in participant B, I, and J).

TABLE 1 Treatment overview per participant.

Participant	Number of sessions	Main problem/ request for help	Treatment module	No-show/ drop-out	Comments	Qualitative/Quantitative Results
A	4	Forgetfulness, sleeping, nightmares	Intake, lifeline, and psychoeducation	Drop-out: did not want to continue, no request for help and too many daily stressors	Difficulties with foster mother.	*Quantitative.* Decrease in symptoms of depression during baseline. *Qualitative.* Did not take part in the interview.
B	11	Feeling down/ insecure	Intake, lifeline, EMDR	Cancelled twice because of school activities and father passing away	Father passed away during treatment.	*Quantitative.* Decrease in symptoms of depression during baseline, increase in symptoms of depression during treatment, no change from start of treatment to follow-up. *Qualitative.* Increased focus, self-care, being proud of themselves talking to other about the past.
C	9	Feeling tired	Intake, lifeline	-	Received news that his father was not his biological father; is lying in bed for days; worries about asylum status; physical complaints; focus on establishing social network and activation.	*Quantitative.* A decrease in symptoms of depression during baseline and treatment, an increase in symptoms of depression during follow-up, no change from start of treatment to follow-up. *Qualitative.* Less physical aches, came out of bed more often, started remembering appointments.
D	7	Questions concerning identity, worries about physical health	Intake, lifeline, EMDR	-	Stress concerning relationship with family; worries about physical health and family reunification; questions concerning identity.	*Quantitative.* An increase in symptoms of depression from start treatment to follow-up, no other changes. *Qualitative.* Improved relationship with loved ones, still experiencing worries about family reunification
E	7	Sleeping, concentration, stress	Intake, lifeline, EMDR	-	Worries about family reunification; discussed sleeping hygiene.	*Quantitative.* An increase in symptoms of PTSD during baseline, a decrease in symptoms of PTSD during treatment, and an increase in symptoms of PTSD during follow-up, no change from start treatment to follow-up. An increase in symptoms of depression during baseline, follow-up and from start treatment to follow-up. *Qualitative.* An improvement in sleep and concentration, new problems in Eritrea and in school after treatment caused feelings of depression.
F	0	Feeling down, suicidal thoughts	Intake	No-show twice during intake, drop-out after moving country	Declared age of majority/ illegal; moved to another country.	*Quantitative.* No changes during baseline. *Qualitative.* Did not take part in the interview.
G	0	Sleeping, concentration, overthinking	-	Drop-out because of COVID-19	-	*Quantitative.* No changes during baseline. *Qualitative.* Did not take part in the interview.

(Continued)

TABLE 1 (Continued)

Participant	Number of sessions	Main problem/ request for help	Treatment module	No-show/ drop-out	Comments	Qualitative/Quantitative Results
H	8	Stress, sleeping, avoiding contacts because of memories	Intake, lifeline, EMDR	-	Worries about family and friends in Eritrea; positive news concerning family reunification.	*Quantitative.* A decrease in symptoms of depression and PTSD during baseline. No change from start treatment to follow-up. *Qualitative.* Thinking more about positive memories, feeling 'less bad' about the negative memories.
I	9	Sleeping, feeling more calm, concentration	Intake, lifeline, EMDR	Cancelled twice because of quarantine due to COVID-19	Bad news concerning family reunification; difficulties with peers.	*Quantitative.* A decrease in symptoms of depression during baseline, no other changes. *Qualitative.* Forgot negative memories, no other effects, prefers focusing on the future.
J	9	Stress and difficulties sleeping	Intake, lifeline	-	Worries about family members and family reunification.	*Quantitative.* A decrease in symptoms of depression and PTSD, no other changes. *Qualitative.* The treatment helped with practical issues, more keen to go to appointments

EMDR, Eye Movement Desensitization and Reprocessing; PTSD, posttraumatic stress disorder.

Table 3 presents the RCI scores during baseline (t_1–t_2), treatment (t_2–t_3), follow-up (t_3–t_4), and between the start of treatment and end of follow-up (t_2–t_4). During the baseline period, two participants improved with regard to PTSD symptom severity, one worsened, and six remained unchanged. During treatment, only one participant improved with regard to PTSD symptom severity. However, this participant deteriorated during follow-up and overall, remained unchanged. The other participants ($n = 5$) remained unchanged with regard to PTSD symptom severity during treatment. Overall, none of the participants evidenced statistically significant changes from the beginning of treatment to follow-up.

Six participants improved with regard to depressive symptom severity during baseline, one deteriorated, and three remained unchanged. During treatment, one improved, one worsened, and four remained unchanged. During follow-up, two deteriorated, and four remained unchanged. From start of treatment to follow-up two worsened and five remained unchanged.

3.2. Evaluation by participants

Participants who completed the study protocol from baseline to follow-up ($n = 7$) took part in the qualitative evaluation of the multimodal trauma-focused treatment. Most participants ($n = 6$) found the treatment helpful and would recommend it to others. They appreciated the outreach work, as five participants stated they would not have participated if they had to travel to a mental health institution. Moreover, three participants valued the occasional informal, personal nature of the contact. Some explained that they appreciated that the ICM sometimes stayed after a session to talk, walk, or cook together. For example, one URM said drinking coffee and walking with the ICM helped her after a difficult session, explaining: "[*After coffee*] *I walked home as a new person.*" Four participants reported that a useful aspect of the treatment was talking about their experiences with the therapists and ICMs. URMs explained they felt free to share their experiences, were relieved after talking, and felt space to discuss subjects they would not address with others. One URM added:

> "They come back, and again, they don't give up. I'm starting to think: can I share my problems with these people? And then I started sharing. […] Sometimes I was tired and wanted to sleep and did not want to talk, but they came back and helped me and little by little, I started talking."

Finally, two participants stated they found the lifeline helpful. One added:

> "Now I have a chance to see all different parts of my life, the good and the bad. […] This offers me balance."

All but one participant noticed an impact of the treatment. For example, some ($n = 3$) noted they could address difficult topics with loved ones and experienced an improved relationship with friends and family. Other benefits included an improved ability to concentrate, feeling proud of themselves, improved self-care, and experiencing improved sleep. The one URM who did not notice an impact explained that although negative experiences did not bother him so much anymore, the treatment did not impact his life. He would rather focus on his future, such as his education or social network. Another URM stated:

TABLE 2 Baseline, pre-treatment, post-treatment, and follow-up measurements.

Measure	Baseline			Pre-treatment			Post-treatment			Follow-up		
	n	M	SD	*n*	M	SD	*n*	M	SD	*n*	M	SD
CRIES-13	10	29.8	13.3	9	23.2	20.6	6	17.3	17.6	7	19.9	26.2
PHQ-A	10	12.2	4.4	10	7.1	6.4	6	8.2	6.6	7	10.1	9.2

CRIES-13, Children's Revised Impact of Event Scale; PHQ-A, The Patient Health Questionnaire-9, modified for adolescents.

> "The biggest difference between before and after? Before I wasn't interested, I didn't feel like doing anything. I didn't want to go to school. Or didn't go to appointments. Sleeping was also difficult. After and during the treatment, I feel like I'm more keen, I go to school and to the appointments."

Notably, most URMs ($n = 5$) spoke about the daily stressors they continued to experience, including worries about the future, anxiety concerning family reunification, troubles with peers, and worries about the lives and wellbeing of family members. For example, the father of a URM passed away, another URM received the news that his father was not his biological father, and yet another URM was declared illegal during the treatment. In addition, most URMs came from Eritrea, and during this study there was turmoil in their country of origin, leaving them worried about the lives of their families. Some explained that their complaints increased due to these issues.

> "Now there is a new problem concerning school and my family in Eritrea. […] Right after the treatment I had less difficulties sleeping and concentrating. So now, after this situation I have nightmares and I am sleepwalking again. Because of these problems I'm depressed. Sometimes I contemplate suicide. I have a lot of problems now."

3.3. Integrating qualitative and quantitative data

In the qualitative evaluation, all but one URM noted they found the treatment useful and felt the treatment had positively impacted their wellbeing. However, this impact was not visible in the quantitative evaluation. The qualitative evaluation included results, such as improved sleep and improved ability to concentrate, that would be expected to manifest in the quantitative evaluation. However, other qualitative findings, including being able to address difficult topics with loved ones, are not expected to be reflected directly in the questionnaires measuring PTSD and depression. For example, participant B reported no change from start of treatment to follow-up on symptoms of depression and PTSD, but did report increased self-care and being proud of herself.

The impact of continuous stressors was sometimes reflected in both the quantitative as well as the qualitative data. For example, participant E reported an increase in symptoms of PTSD and depression during follow-up. The qualitative data indicated that this might have resulted from new problems that occurred at school and the tumultuous circumstances in Eritrea, where his family resided. Notably, most changes in symptoms of PTSD and depression were observed during the baseline period. No qualitative data on this time period were collected.

4. Discussion

The current study explored the potential effectiveness and treatment satisfaction of a trauma-focused treatment approach in a small sample of URMs, suffering from symptoms of PTSD and/or depression. In addition, we aimed to provide implications for future research on how to conduct research among URMs. Although URMs are among the most vulnerable groups of refugees, studies evaluating the effectiveness of trauma-focused treatments for URMs remain scarce. We expected to find a decrease in symptoms of PTSD and depression considering that our modular treatment included promising treatment interventions, including EMDR and KIDNET. Notably, the baseline period was associated with a larger decrease of mental health issues than the treatment period. The results of our quantitative evaluation do not show clinically reliable symptom reductions at posttest or follow-up.

A question that arises is whether the offered treatment approach suited the current needs of the URMs. Potentially, another treatment, such as culturally adapted cognitive behavioral therapy (CBT) with attention for emotion-regulation and continuous stressors, might have been more suitable (Hinton et al., 2012). In addition, the limited number of sessions focused on EMDR or CBT might not have been enough to cause a significant change in symptoms of PTSD or depression. Another possibility is that the questionnaires do not reflect the actual impact of the treatment approach. For instance, the main problem reported by the URMs was not always related to PTSD and depression, but more often to psychosocial functioning. Consequently, the treatment approach might have focused more on, and consequently affected, the psychosocial functioning and/or quality of life of the URMs. As suggested by the qualitative findings, the treatment might have had a positive impact on the URMs that is not directly related to symptoms of PTSD and depression, as some URMs, for example, indicated that they noticed an improvement in selfcare and in the will to discuss difficult topics with loved ones.

In line with previous studies, we found an indication that the treatment effect was impacted by continuous stressors (Unterhitzenberger et al., 2019; Van Es et al., 2021). URMs were faced with a wide range of strenuous daily stressors during treatment, including the passing of a father and bad news concerning family reunification. Additionally, during the time of this study there was turmoil in the border region of Ethiopia and Eritrea, an area where many Eritrean refugees reside (British Broadcasting Corporation, 2021). This resulted in major worries concerning family reunion procedures as well as the lives and wellbeing of friends and family residing in Eritrea and Ethiopia. The impact of current stressors on mental health has been shown in several studies

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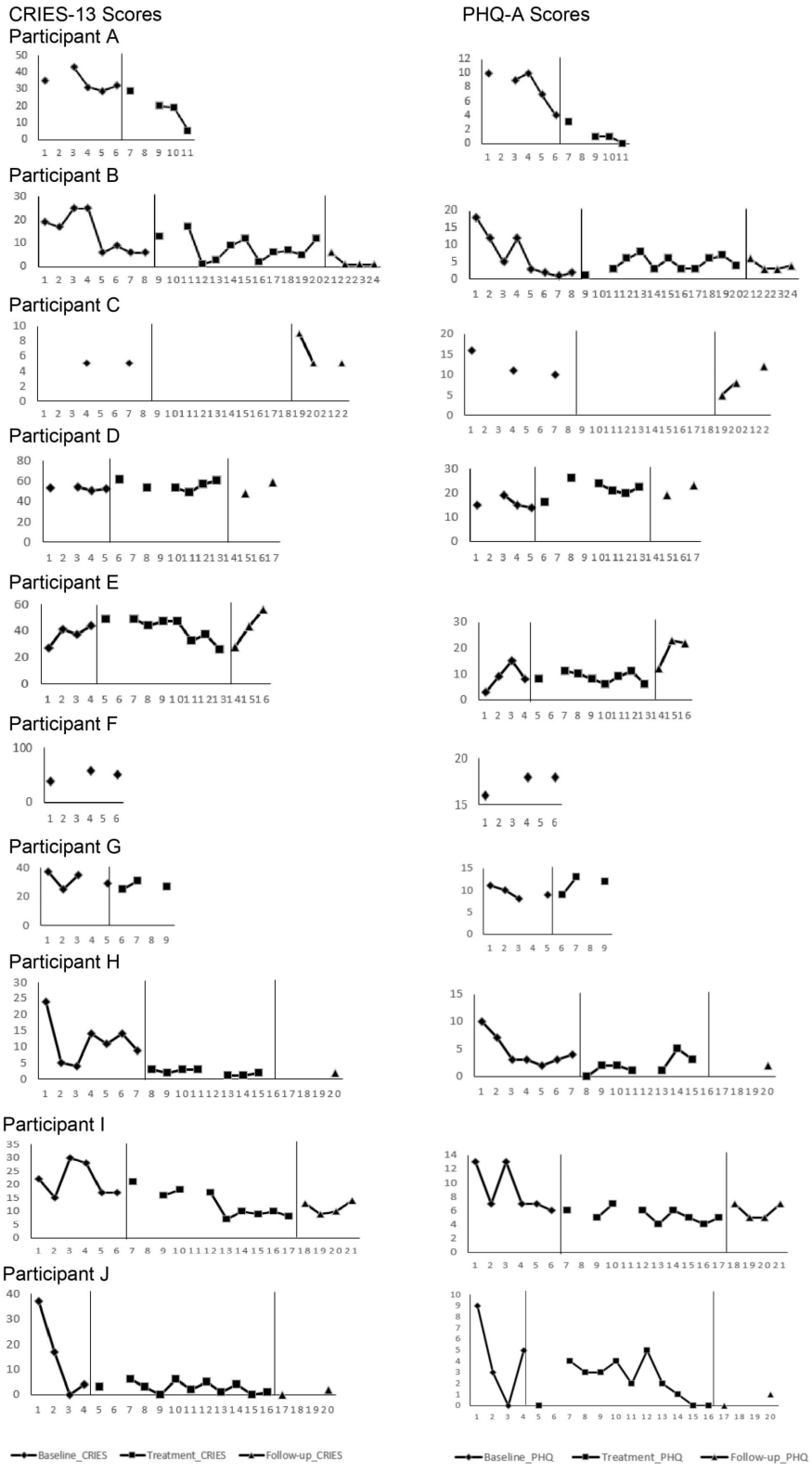

Note. CRIES-13 = Children's Revised Impact of Events Scale; PHQ-A = Patient Health Questionnaire for Adolescents.

FIGURE 2
Individual scores on the PHQ-A and CRIES-13 over time. CRIES-13=Children's Revised Impact of Events Scales; PHQ-A=Patient Health Questionnaire for Adolescents.

TABLE 3 RCI of symptoms of PTSD and depression.

Participant	RCI t_1–t_2 CRIES-13	RCI t_2–t_3 CRIES-13	RCI t_3–t_4 CRIES-13	RCI t_2–t_4 CRIES-13	RCI t_1–t_2 PHQ-A	RCI t_2–t_3 PHQ-A	RCI t_3–t_4 PHQ-A	RCI t_2–t_4 PHQ-A
A	−0.83	–	–	–	−2.79*	–	–	–
B	−0.83	−0.96	−0.69	−1.65	−6.77*	1.99*	−0.80	1.20
C	0.00	0.55	−0.55	0.00	−2.39*	−1.99*	2.79*	0.80
D	1.10	−1.83	1.56	−0.28	0.40	1.25	1.54	2.79*
E	3.03*	−2.87*	3.87*	1.01	1.99*	1.59	3.98*	5.58*
F	1.65	–	–	–	0.80	–	–	–
G	−1.65	–	–	–	−0.80	–	–	–
H	−2.89*	–	–	−0.14	−3.98*	–	–	0.80
I	−0.14	−1.10	0.14	−0.96	−2.79*	0.40	0.00	0.40
J	−4.68*	−0.41	0.28	−0.14	−3.59*	0.00	0.40	0.40

*Reliable change in symptoms.
CRIES-13, Children's Revised Impact of Event Scale; PHQ-A, The Patient Health Questionnaire-9, modified for adolescents; PTSD, posttraumatic stress disorder; RCI, Reliable Change Index; t_1, first baseline assessment; t_2, last baseline assessment; t_3, first follow-up assessment; t_4, last follow-up assessment. Negative numbers refer to decreases in symptoms, whereas positive numbers refer to increases in symptoms.

(Laban et al., 2005; Drožđek et al., 2014; Unterhitzenberger et al., 2019). Although we did not systematically evaluate the impact of current stressors on PTSD and depression, or the impact of mental health problems on current stressors, some URMs indeed communicated that their mental health was impacted by continuous stressors. When offering trauma-focused treatment for URMs, it is of great importance to pay attention to reducing stressors resulting from the past as well as continuous stressors. This is not only of relevance because URMs report the impact of both stressors, but also because PTSD symptoms can maintain and provoke further daily stressors and vice versa. For example, school problems can be a result of the lack of concentration and conflicts with peers can be a result of hyperarousal (Neuner et al., 2010).

All but one participant came from Eritrea. In Eritrea, talking about psychological problems is often seen as shameful and giving voice to dissatisfaction is often seen as being ungrateful. As a result, URMs taking part in the interviews may have been hesitant to answer questions about their current psychological wellbeing and satisfaction with the treatment, which may have resulted in socially desirable answers (Nidos, 2018).

Most changes in symptoms were observed during the baseline period. This suggests that the symptoms of PTSD and depression were not stable in this sample during this period of time. The changes during baseline might have been due to events in the lives of these URMs (e.g., news concerning family reunification). Another explanation might be that the weekly contact with the ICM, who conducted the questionnaires and assessed how the URM was doing, positively impacted the wellbeing of the URMs. However, as we did not systematically assess events or other factors that may have impacted the mental health of URMs during the baseline period this limits our ability to make any statements on the cause of the changes during this period. Arntz et al. (2013) suggested the multiple baseline design might be more suited for stable problems without a large time effect during the baseline period. As the baseline periods were unstable, it was more difficult to distinguish the effect of treatment from that of time. Using a longer baseline period in future studies might result in a more stable baseline.

The feasibility of the current study was influenced by factors related to the setting and population, including news concerning asylum status and family reunification. In our earlier study, we found that the feasibility of the assessments was low, possibly as a result of therapists conducting the assessments (Van Es et al., 2021). Although the involvement of ICMs in the assessments increased response rates, some URMs did not complete all questionnaires. Most participants who refused to fill in questionnaires did so because they were experiencing (too much) stress. Missing questionnaires and drop-out did not seem to be related to the nature of the treatment.

4.1. Strengths and limitations

Strengths concerning the study include that it is one of the first to evaluate the effectiveness of a trauma-focused treatment approach specifically for URMs. Moreover, the study is conducted in a clinical, naturalistic setting. Another strength is that, in contrast to our feasibility study (Van Es et al., 2021), the assessments were not conducted by the therapist. However, the ICM conducting the questionnaires was also involved in the treatment and both the ICM and researcher were aware of the treatment status and -condition. Finally, an important strength of the current study is the combination of quantitative and qualitative methods. This mixed methods approach has helped us in broadening our understanding of the needs of the participants as well as their experiences with the treatment approach.

Limitations include the restricted generalizability of the current findings. Firstly, all but one URM came from Eritrea. Secondly, the substantial number of drop-outs and missing data might have affected study outcomes. Thirdly, the generalizability is affected by the small sample size. Another limitation is the use of the CRIES-13 to measure symptoms of PTSD, as the questionnaire is not in line with the contemporary DSM-5 or ICD-11. Moreover, the questionnaire could possibly be filled in with a continuous stressor in mind instead of a prior traumatic event, as it was not combined with a questionnaire assessing stressors (Criterion A).

Furthermore, the questionnaires used in this study were not validated for an Eritrean population. In addition, the translations aimed to provide a direct translation of the questionnaires and did not account for cultural appropriateness of questions or translation of cultural concepts (Pernice, 1994; Robila and Akinsulure-Smith, 2012).

However, a study amongst traumatized refugees in the Netherlands suggested that local idioms of distress may not play a major role when assessing PTSD, anxiety, and depression (Wind et al., 2017). Although we aimed to overcome the aforementioned challenges by collaborating with ICMs in the assessments and combining qualitative data with quantitative data, we should be aware that the background and culture of these URMs might have affected the results of the current study.

4.2. Scientific implications

It must be stressed that the challenges we faced during this study should not discourage future research, as these URMs deserve specialized treatment, adapted to their specific needs. The findings of this study have several possible scientific implications. First, future research is needed to broaden our understanding of the acceptability and effectiveness of the presented trauma-focused treatment approach. It was difficult to establish the effectiveness of the current treatment approach as the treatment approach was offered in a flexible manner and therapists were free to choose modules that best suited the needs of the URMs. This resulted in a wide variety of subjects addressed during the treatment sessions, again resulting in difficulties in drawing conclusions about the effectiveness of the treatment approach. We found that the treatment approach partly overcomes barriers to treatment in a highly specialized population that is not motivated for treatment. In addition, most URMs evaluated the approach positively and stated it had positively impacted their wellbeing. More research is needed to further understand which treatment components were helpful, and which components did not contribute to the acceptability and effectiveness of the treatment approach. Until further examination of this treatments is conducted, preliminary implementation is cautioned.

Second, future research efforts might focus on other promising treatments for URMs. For example, Unterhitzenberger et al. (2019) painted a promising picture, indicating that TF-CBT is feasible and possibly effective in diminishing symptoms of PTSD in URMs. In addition, a research protocol was recently published, describing a RCTs comparing stepped-care models to care as usual for URMs (Rosner et al., 2020).

One of the aims of the current study was to inform future research efforts. One important lesson learned during this study is that it is important to look beyond clinical measures of symptoms of PTSD and depression. Such assessments may not capture the potential effect of programs offered to URMs. Potentially, as suggested by the qualitative results of the current study, the strength of this treatment approach lies in lowering barriers to mental health care, building a trusting relationship, and improvements in social functioning, global functioning and quality of life. Future research efforts could use quantitative assessments measuring such aspects of functioning. In addition, the current study shows the benefit of conducting mixed methods research when working with URMs. Finally, the results of the current study suggest that it would be helpful to use resources such as outreach care and ICMs when offering treatment to URMs.

4.3. Conclusion

The current study represents our ongoing search in developing a suitable treatment approach for an understudied population deserving the treatment they need. This study adds to the knowledge about methodological considerations in evaluating treatments for URMs, the potential effects of trauma-focused treatments, and the implementation of treatments for URMs.

Data availability statement

The datasets presented in this article are not readily available because of the sensitive nature of the data. Requests to access the datasets should be directed to c.van.es@arq.org.

Ethics statement

The studies involving human participants were reviewed and approved by Medical Ethical Committee of Leiden University. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin. Written informed consent was obtained from the individual(s), and minor(s)' legal guardian/next of kin, for the publication of any potentially identifiable images or data included in this article.

Author contributions

MV, CE, and MS coordinated the project. TM contributed to the development of the treatment protocol. CE, TM, MS, MV, and PB designed the study. CE took the lead in writing the manuscript. NA provided statistical support. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Al-Amer, R., Maneze, D., Ramjan, L., Villarosa, A. R., Darwish, R., and Salamonson, Y. (2020). Psychometric testing of the Arabic version of the patient health questionnaire among adolescent refugees living in Jordan. *Int. J. Ment. Health Nurs.* 29, 685–692. doi: 10.1111/inm.12702

Arntz, A., Sofi, D., and van Breukelen, G. (2013). Imagery rescripting as treatment for complicated PTSD in refugees: a multiple baseline case series study. *Behav. Res. Ther.* 51, 274–283. doi: 10.1016/j.brat.2013.02.009

Bamford, J., Fletcher, M., and Leavey, G. (2021). Mental health outcomes of unaccompanied refugee minors: a rapid review of recent research. *Curr. Psychiatry Rep.* 23:46. doi: 10.1007/s11920-021-01262-8

Bean, T., Eurelings-Bontekoe, E., Mooijaart, A., and Spinhoven, P. (2006). Factors associated with mental health service need and utilization among unaccompanied refugee adolescents. *Admin. Pol. Ment. Health* 33, 342–355. doi: 10.1007/s10488-006-0046-2

British Broadcasting Corporation. (2021). *Ethiopia's Tigray war: The short, medium and long story*. Available at: (https://www.bbc.com/news/world-africa-54964378).

Children and War Foundation. (1998). The Children's impact of event scale (13): CRIES-13. Retrieved February, 2023, Available at: http://www.childrenandwar.org/

Creswell, J. W., and Plano Clark, V. (2011). *Designing and conducting mixed methods research. 2nd Edition*. Thousand Oaks, CA: Sage.

Daniel-Calveras, A., Baldaquí, N., and Baeza, I. (2022). Mental health of unaccompanied refugee minors in Europe: a systematic review. *Child Abuse Negl.* 133:105865. doi: 10.1016/j.chiabu.2022.105865

Demazure, G., Gaultier, S., and Pinsault, N. (2018). Dealing with difference: a scoping review of psychotherapeutic interventions with unaccompanied refugee minors. *Eur. Child Adolesc. Psychiatry* 27, 447–466. doi: 10.1007/s00787-017-1083-y

Derluyn, I., and Broekaert, E. (2008). Unaccompanied refugee children and adolescents: the glaring contrast between a legal and a psychological perspective. *Int. J. Law Psychiatry* 31, 319–330. doi: 10.1016/j.ijlp.2008.06.006

Drožđek, B., Kamperman, A. M., Tol, W. A., Knipscheer, J. W., and Kleber, R. J. (2014). Seven-year follow-up study of symptoms in asylum seekers and refugees with PTSD treated with trauma-focused groups. *J. Clin. Psychol.* 70, 376–387. doi: 10.1002/jclp.22035

Ehntholt, K. A., Smith, P. A., and Yule, W. (2005). School-based cognitive-behavioural therapy group intervention for refugee children who have experienced war-related trauma. *Clin. Child Psychol. Psychiatry* 10, 235–250. doi: 10.1177/1359104505051214

Ehntholt, K. A., and Yule, W. (2006). Practitioner Review: Assessment and treatment of refugee children and adolescents who have experienced war-related trauma. *J. Child Psychol. Psychiatry* 47, 1197–1210. doi: 10.1111/j.1469-7610.2006.01638.x

European Migration Network (2020). Annual report on migration and asylum 2019. Available at: (https://www.emn.at/wp-content/uploads/2020/06/emn-arm-2019-compressed.pdf).

Goldbeck, L., Muche, R., Sachser, C., Tutus, D., and Rosner, R. (2016). Effectiveness of trauma-focused cognitive behavioral therapy for children and adolescents: a randomized controlled trial in eight German mental health clinics. *Psychother. Psychosom.* 85, 159–170. doi: 10.1159/000442824

Hinton, D. E., Rivera, E. I., Hofmann, S. G., Barlow, D. H., and Otto, M. W. (2012). Adapting CBT for traumatized refugees and ethnic minority patients: examples from culturally adapted CBT (CA-CBT). *Transcult. Psychiatry* 49, 340–365. doi: 10.1177/1363461512441595

Horowitz, M. J., Wilner, N. R., and Alvarez, W. (1979). Impact of event scale. A measure of subjective stress. *Psychosom. Med.* 41, 209–218. doi: 10.1097/00006842-197905000-00004

Huemer, J., Karnik, N. S., Voelkl-Kernstock, S., Granditsch, E., Dervic, K., Friedrich, M. H., et al. (2009). Mental health issues in unaccompanied refugee minors. *Child Adolesc. Psychiatry Ment. Health* 3:13. doi: 10.1186/1753-2000-3-13

Jacobson, N. S., and Truax, P. (1992). "Clinical significance: a statistical approach to defining meaningful change in psychotherapy research" in *Methodological issues & strategies in clinical research*. ed. A. E. Kazdin, (Washington, DC: American Psychological Association), 631–648.

Johnson, J. G., Harris, E. S., Spitzer, R. L., and Williams, J. B. W. (2002). The patient Health questionnaire for adolescents: validation of an instrument for the assessment of mental disorders among adolescent primary care patients. *J. Adolesc. Health* 30, 196–204. doi: 10.1016/S1054-139X(01)00333-0

Kocalevent, R.-D., Hinz, A., and Brähler, E. (2013). Standardization of the depression screener patient health questionnaire (PHQ-9) in the general population. *Gen. Hosp. Psychiatry* 35, 551–555. doi: 10.1016/j.genhosppsych.2013.04.006

Kroenke, K., Spitzer, R. L., and Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *J. Gen. Intern. Med.* 16, 606–613. doi: 10.1046/j.1525-1497.2001.016009606.x

Kroenke, K., Spitzer, R. L., Williams, J. B., and Löwe, B. (2010). The patient health questionnaire somatic, anxiety, and depressive symptom scales: a systematic review. *Gen. Hosp. Psychiatry* 32, 345–359. doi: 10.1016/j.genhosppsych.2010.03.006

Laban, C. J., Gernaat, H. B., Komproe, I. H., Van Der Tweel, I., and De Jong, J. T. (2005). Postmigration living problems and common psychiatric disorders in Iraqi asylum seekers in the Netherlands. *J. Nerv. Ment. Dis.* 193, 825–832. doi: 10.1097/01.nmd.0000188977.44657.1d

Manea, L., Gilbody, S., and McMillan, D. (2012). Optimal cut-off score for diagnosing depression with the patient health questionnaire (PHQ-9): a meta-analysis. *CMAJ* 184, E191–E196. doi: 10.1503/cmaj.110829

McKelvey, R. S., and Webb, J. A. (1995). Unaccompanied status as a risk factor in Vietnamese Amerasians. *Soc. Sci. Med.* 41, 261–266. doi: 10.1016/0277-9536(94)00314-J

Neuner, F., Kurreck, S., Ruf, M., Odenwald, M., Elbert, T., and Schauer, M. (2010). Can asylum-seekers with posttraumatic stress disorder be successfully treated? A randomized controlled pilot study. *Cogn. Behav. Ther.* 39, 81–91. doi: 10.1080/16506070903121042

Ni Raghallaigh, M. (2013). The causes of mistrust amongst asylum seekers and refugees: insights from research with unaccompanied asylum-seeking minors living in the Republic of Ireland. *J. Refug. Stud.* 27, 82–100. doi: 10.1093/jrs/fet006

Nickerson, A., Bryant, R. A., Silove, D., and Steel, Z. (2011). A critical review of psychological treatments of posttraumatic stress disorder in refugees. *Clin. Psychol. Rev.* 31, 399–417. doi: 10.1016/j.cpr.2010.10.004

Nidos. (2018). *Normen en waarden in de Eritrese samenleving*. Available at: (https://www.nidos.nl/wp-content/uploads/2018/05/4.Normen-en-waarden-in-de-Eritrese-samenleving.pdf).

Onyut, L. P., Neuner, F., Schauer, E., Ertl, V., Odenwald, M., Schauer, M., et al. (2005). Narrative exposure therapy as a treatment for child war survivors with posttraumatic stress disorder: two case reports and a pilot study in an African refugee settlement. *BMC Psychiatry* 5, 1–9. doi: 10.1186/1471-244X-5-7

Oras, R., Ezpeleta, S. C. D., and Ahmad, A. (2004). Treatment of traumatized refugee children with eye movement desensitization and reprocessing in a psychodynamic context. *Nord. J. Psychiatry* 58, 199–203. doi: 10.1080/08039480410006232

Pernice, R. (1994). Methodological issues in research with refugees and immigrants. *Prof. Psychol. Res. Pract.* 25, 207–213. doi: 10.1037/0735-7028.25.3.207

Perrin, S., Meiser-Stedman, R., and Smith, P. (2005). The children's revised impact of event scale (CRIES): validity as a screening instrument for PTSD. *Behav. Cogn. Psychother.* 33, 487–498. doi: 10.1017/S1352465805002419

Random Allocation Software. (2004). *Random allocation software*. Available at: (https://mahmoodsaghaei.tripod.com/Softwares/randalloc.html).

Renner, F., Arntz, A., Peeters, F. P., Lobbestael, J., and Huibers, M. J. (2016). Schema therapy for chronic depression: results of a multiple single case series. *J. Behav. Ther. Exp. Psychiatry* 51, 66–73. doi: 10.1016/j.jbtep.2015.12.001

Richardson, L. P., McCauley, E., Grossman, D. C., McCarty, C. A., Richards, J., Russo, J. E., et al. (2010). Evaluation of the patient health Questionnaire-9 item for detecting major depression among adolescents. *Pediatrics* 126, 1117–1123. doi: 10.1542/peds.2010-0852

Robila, M., and Akinsulure-Smith, A. M. (2012). "Psychological ethics and immigration" in *The Oxford handbook of international psychological ethics*. eds. M. M. Leach, M. J. Stevens, G. Lindsay, A. Ferrero and Y. Korkut, (New York: Oxford University Press), 191–200.

Rodenburg, R., Benjamin, A., de Roos, C., Meijer, A. M., and Stams, G. J. (2009). Efficacy of EMDR in children: a meta-analysis. *Clin. Psychol. Rev.* 29, 599–606. doi: 10.1016/j.cpr.2009.06.008

Rosner, R., Sachser, C., Hornfeck, F., Kilian, R., Kindler, H., Muche, R., et al. (2020). Improving mental health care for unaccompanied young refugees through a stepped-care approach versus usual care+: study protocol of a cluster randomized controlled hybrid effectiveness implementation trial. *Trials* 21:1013. doi: 10.1186/s13063-020-04922-x

Said, G., and King, D. (2020). Implementing narrative exposure therapy for unaccompanied asylum-seeking minors with post-traumatic stress disorder: a pilot feasibility report. *Clin. Child Psychol. Psychiatry* 25, 213–226. doi: 10.1177/1359104519864123

Smith, P., Perrin, S., Dyregrov, A., and Yule, W. (2003). Principal components analysis of the impact of event scale with children in war. *Pers. Individ. Diff.* 34, 315–322. doi: 10.1016/S0191-8869(02)00047-8

The UN Refugee Agency. (2020). *Global trends - forced displacement in 2019*.

Thomas, D. R. (2003). *A general inductive approach for qualitative data analysis*. Available at: (https://frankumstein.com/PDF/Psychology/Inductive%20Content%20Analysis.pdf).

Unterhitzenberger, J., Eberle-Sejari, R., Rassenhofer, M., Sukale, T., Rosner, R., and Goldbeck, L. (2015). Trauma-focused cognitive behavioral therapy with unaccompanied refugee minors: a case series. *BMC Psychiatry* 15. doi: 10.1186/s12888-015-0645-0

Unterhitzenberger, J., Wintersohl, S., Lang, M., König, J., and Rosner, R. (2019). Providing manualized individual trauma-focused CBT to unaccompanied refugee minors with uncertain residence status: a pilot study. *Child Adolesc. Psychiatry Ment. Health* 13:22. doi: 10.1186/s13034-019-0282-3

van der Kooij, I. W., Verlinden, E., de Jonge, C. D., de Kruijf, S., Bipat, S., Boer, F., et al. (2013). Use of a screening tool for post traumatic stress disorder in children in Suriname. *Acad. J. Suriname* 4, 347–352.

van Es, C. M., Sleijpen, M., Mooren, T., te Brake, H., Ghebreab, W., and Boelen, P. A. (2019). Eritrean unaccompanied refugee minors in transition: a focused ethnography of challenges and needs. *Resid. Treat. Child. Youth* 36, 157–176. doi: 10.1080/0886571X.2018.1548917

Van Es, C. M., Sleijpen, M., Velu, M. E., Boelen, P. A., van Loon, R. E., Veldman, M., et al. (2021). Overcoming barriers to mental health care: multimodal trauma-focused treatment approach for unaccompanied refugee minors. *Child Adolesc Psychiatry Ment. Health* 15. doi: 10.1186/s13034-021-00404-3

Velu, M. E., Martens, I., Shahab, M., de Roos, C., Jongedijk, R. A., Schok, M., et al. (2022). Trauma-focused treatments for refugee children: study protocol for a randomized controlled trial of the effectiveness of KIDNET versus EMDR therapy versus a waitlist control group (KIEM). *Trials* 23:347. doi: 10.1186/s13063-022-06178-z

Verlinden, E., Opmeer, B. C., Van Meijel, E. P., Beer, R., De Roos, C., Bicanic, I. A., et al. (2015). Enhanced screening for posttraumatic stress disorder and comorbid diagnoses in children and adolescents. *Eur. J. Psychotraumatol.* 6:26661. doi: 10.3402/ejpt.v6.26661

Verlinden, E., van Meijel, E. P., Opmeer, B. C., Beer, R., de Roos, C., Bicanic, I. A., et al. (2014). Characteristics of the children's revised impact of event scale in a clinically referred Dutch sample. *J. Trauma. Stress.* 27, 338–344. doi: 10.1002/jts.21910

Vervliet, M., Lammertyn, J., Broekaert, E., and Derluyn, I. (2014a). Longitudinal follow-up of the mental health of unaccompanied refugee minors. *Eur. Child Adolesc. Psychiatry* 23, 337–346. doi: 10.1007/s00787-013-0463-1

Vervliet, M., Meyer Demott, M. A., Jakobsen, M., Broekaert, E., Heir, T., and Derluyn, I. (2014b). The mental health of unaccompanied refugee minors on arrival in the host country. *Scand. J. Psychol.* 55, 33–37. doi: 10.1111/sjop.12094

Wadaa, N. N., Zaharim, N. M., and Alqashan, H. F. (2010). The use of EMDR in treatment of traumatized Iraqi children. *Dig. Middle East Stud.* 19, 26–36. doi: 10.1111/j.1949-3606.2010.00003.x

Wind, T. R., van der Aa, N., de la Rie, S., and Knipscheer, J. (2017). The assessment of psychopathology among traumatized refugees: measurement invariance of the Harvard trauma questionnaire and the Hopkins symptom Checklist-25 across five linguistic groups. *Eur. J. Psychotraumatol.* 8:1321357. doi: 10.1080/20008198.2017.1321357

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EDITED BY
Serena Grumi,
Neurological Institute Foundation Casimiro Mondino (IRCCS), Italy

REVIEWED BY
Caterina Mamprin,
Universitéde Moncton, Canada
Kerstin Spanhel,
University of Freiburg, Germany

*CORRESPONDENCE
Maike Garbade
✉ Maike.Garbade@uniklinik-ulm.de

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Factors affecting the acculturation strategies of unaccompanied refugee minors in Germany

Maike Garbade[1]*, Jenny Eglinsky[1], Heinz Kindler[2], Rita Rosner[3], Cedric Sachser[1] and Elisa Pfeiffer[1]

[1]Department of Child and Adolescent Psychiatry/Psychotherapy, Ulm University, Ulm, Germany, [2]German Youth Institute, Munich, Germany, [3]Department of Psychology, Catholic University Eichstätt-Ingolstadt, Eichstätt, Germany

Background: Different acculturation strategies might be related to different mental health outcomes and social participation of unaccompanied refugee minors (URMs), but little is known about which factors influence this acculturation process. Therefore, the aim of this investigation was to examine the impact of individual, stress-related, and contextual factors on the acculturation process of URMs in Germany.

Methods: A sample of *N*=132 URMs living in child and youth welfare service facilities in Germany completed questionnaires about their acculturation orientation, traumatic experiences, daily stressors, asylum stress, and perceived social support between June 2020 and October 2021. This investigation is part of the multi-center randomized control trial BETTER CARE. Data were analyzed descriptively and via multiple hierarchical regression.

Results: Integration (43.5%) and Assimilation (37.1%) were the most common acculturation strategies used by URMs. Multiple hierarchical regression models showed that daily stressors (e.g., the lack of money) were associated with a stronger orientation toward the home country, whereas traumatic events were associated with a weaker orientation toward their home country. No significant predictors were found for the orientation toward the host country.

Discussion: Overall, URMs in Germany showed favorable acculturation strategies. Nevertheless, daily stressors and traumatic experiences might influence this process. The implications for practitioners and policymakers are discussed with a view to further improving the acculturation process of URMs in Germany.

Clinical Trial Registration: German Clinical Trials Register, DRKS00017453 https://drks.de/search/de/trial/DRKS00017453. Registered on December 11, 2019.

KEYWORDS

unaccompanied refugee minors, acculturation, daily stressors, integration, trauma

1. Introduction

As a consequence of ongoing wars, conflicts, violence or persecution, the number of refugees worldwide continues to rise. In 2020, the UNHCR estimated that 42% of all displaced persons were minors (United Nations High Commissioner for Refugees, 2021). They are often unaccompanied and are, therefore, frequently placed in child and youth welfare service (CYWS) facilities or foster care (Karpenstein and Rohleder, 2022). At the end of 2021, 17.947 unaccompanied refugee minors (URMs) and young refugee adults under the age of 21 were

living in CYWS facilities in Germany (Karpenstein and Rohleder, 2022). When resettling to a new country, they have to adapt to a new life, being confronted with acculturation tasks. This entailed learning a new language, making new friends, or becoming accustomed to different traditions (Brook and Ottemöller, 2020).

Acculturation can be understood as a multidimensional, dynamic process of simultaneously adopting aspects of the receiving country and maintaining aspects of the home country (Schwartz et al., 2010). Thus, acculturation is a relevant topic for every individual, who is in contact with more than one country, such as refugees. The most cited acculturation model by Berry (1997) distinguishes between four main acculturation strategies: assimilation, marginalization, integration, and separation. Assimilation describes a strategy in which members of a minority group do not maintain their home cultural identity and are strongly oriented toward the host country. This means, that acculturating individuals might reject traditions from their home country and want to speak the language of the host country only. They often prefer to have friends from the host country than having friends from their home country (d'Abreu et al., 2019). In contrast, the Separation strategy describes the wish of the individuals to maintain their cultural identity, whereas there is no orientation toward the host country. In this case, acculturating individuals, are avoiding the participation in the host society and focus more on their origin and traditions (El-Awad et al., 2021). When individuals are oriented toward both their home and their host country, the term used is Integration. In this case, the acculturating individual practice not only traditions and languages from their home country and aims to have contact to ethnic peers, but they also aim to learn the language of the host country, try to understand new rules and traditions, and want to have friends from both, their home country and the host country (El-Awad et al., 2021). Finally, Marginalization describes the strategy adopted by individuals who are oriented neither toward their home country nor toward the host country. Individuals are not interested neither in their home country nor in the host country. Often, they are not involved in neither activities of the host society nor of their home country.

Regarding the distribution of preferred acculturation styles among refugees, Copoc (2019) has shown that the majority of adult Syrian refugees in Germany showed either the strategy of Integration (48.4%) or Assimilation (42.4%). As the acculturation process is always influenced by the attitudes of the receiving society (Berry, 1997), a similar distribution of displayed acculturation strategies could be expected for URMs in Germany. But since URMs have to deal simultaneously with both acculturation tasks and developmental tasks (Berry et al., 2006), these results cannot be generalized. It is, therefore, even more surprising that information of the preferred acculturation strategies for the specific group of URMs has been lacking up to now.

Although the acculturation model by Berry (1997) is the most common model used in this field of research, more recently this approach has been questioned because of conceptual and statistical problems. To distinguish between the four acculturation strategies proposed by Berry (1997), continuous scores of the orientation toward home and host countries are often dichotomized using median- or mean-splits. This not only leads to a loss of variance but also to smaller sample sizes in the respective groups (Maehler and Shajek, 2016). Therefore, more recently, a continuous approach is preferred, in which the orientation toward the home country and orientation toward the host country are analyzed independently (Demes and Geeraert, 2014).

Although the importance of acculturation for the development of URMs is beyond question, there is very little evidence about factors that affect the acculturation of URMs. But knowing these factors might help to facilitate the acculturation process of URMs and thus, improve the mental health and societal participation of URMs. Some studies have discussed possible factors that influence acculturation. In terms of age, some studies have shown that a younger age might be associated with a stronger orientation toward the host country (Oppedal and Idsoe, 2012, 2015; Lutterbach and Beelmann, 2021). Other studies did not identify any differences in the acculturation strategies in terms of age (Lincoln et al., 2016). Heterogeneous results are also available for gender. Some studies have shown a stronger orientation of refugee girls toward their home country and a weaker orientation toward the host country than of refugee boys (Oppedal and Idsoe, 2012, 2015). Other studies did not identify any gender differences in the acculturation process (Lincoln et al., 2016). Furthermore, several studies have investigated the impact of the time since arrival in the host country on the acculturation process. Overall, these studies suggest that the longer refugees stay in the host country, the stronger the orientations toward the host country would be, whereas the orientation toward the home country diminishes over time (Oppedal and Idsoe, 2015; Lincoln et al., 2016; Jorgenson and Nilsson, 2021; Lutterbach and Beelmann, 2021).

URMs are not only confronted with acculturation tasks in the host country, but they have also to deal with various stress-related factors, such as previous experiences of traumatic events, the asylum process, or the experiences of daily stressors in the receiving society. Nevertheless, studies that investigate the relationship between these stress-related factors and acculturation are rare or lacking completely. Stress symptoms triggered by traumatic experiences such as concentration problems, intrusions, or hyperarousal can make it difficult to learn a new language or build new relationships. Jorgenson and Nilsson (2021) reported in a study of $N = 80$ Somali refugees in the United States that traumatic experiences did not significantly predict the orientation toward the United States. Similarly, for female adult refugees in Germany, Starck et al. (2020) did not identify any significant correlations between the number of traumatic events and the orientation toward the host and home country. However, an association between the asylum process and acculturation should be considered, as factors such as language acquisition or having a job in the host country are both requirements for permanent residence permits (Hornfeck et al., 2022). Furthermore, they are often used as indicators for successful acculturation (El Khoury, 2019; Brook and Ottemöller, 2020). Nevertheless, no empirical evidence on the relationship between the asylum process and acculturation has been provided up to now. Similarly, the relationship between perceived daily stressors and acculturation is still unclear. A study by Safdar et al. (2021) of Syrian refugees in Germany demonstrated a significant positive correlation between daily stressors and host cultural orientation, whereas no significant association was identified between daily stressors and the orientation toward the home country. However, URMs experience a broad spectrum of daily stressor such as social (e.g., difficulties in making friends, conflicts with adults/peers), material (e.g., lack of money, medical care, food), discrimination (e.g., feeling of being treated differently compared to others), or other stressors related to their specific situation (e.g., feeling of insecurity or worries about their documents) (Vervliet et al., 2014). These different daily stressors may have differing effects on the orientation toward the home country and the host country or vice versa.

These stress-related factors can have a severe negative impact on refugee's mental health (Vervliet et al., 2014; Hornfeck et al., 2022; Pfeiffer et al., 2022). A large body of research has shown, that especially URMs constitute a vulnerable population for developing trauma-related mental health disorder such as posttraumatic stress disorder (PTSD), anxiety or depression (Fazel et al., 2012; Blackmore et al., 2020). To a lesser extent, research has focused on the potentially bi-directional effect of acculturation strategies and mental health state in this population. However, most of the available data are based on cross-sectional study designs, thus the present findings have to be interpreted with caution, and the association must be discussed in both directions (Green et al., 2021). For instance, in a systematic review focusing on migration populations, Choy et al. (2021) had shown that Marginalization was associated with more depression, compared to the other strategies and that those with a marginalized or separated acculturation style showed the highest anxiety-related symptoms. Several studies have shown a similar relation between acculturation and psychosocial wellbeing in URMs (Oppedal and Idsoe, 2012; El-Awad et al., 2021). In general, Assimilation or Integration seem to be stronger associated with improved psychosocial wellbeing, compared to Separation or Marginalization (Oppedal and Idsoe, 2015; Garcia and Birman, 2022). Nevertheless, there are also studies reporting no significant association between acculturation styles and mental health (Copoc, 2019; Green et al., 2021).

It is widely recognized that social support has a beneficial effect on mental health (Oppedal and Idsoe, 2015), and it seems to have a positive impact on the acculturation process, too. Generally speaking, family members may be a great source of social support for adolescents during their acculturation process (Blanc et al., 2022). For URMs, however, this situation is somewhat more complex because their family members do not live with them in their new host country and are not, therefore, in a position to provide the same social support as family members who are present. Oppedal and Idsoe (2015) highlighted the relevance of social support for URMs in Norway with regard to the acculturation process. They reported that social support from family and co-ethnic friends enhanced the orientation toward the home country, and social support from Norwegian friends enhanced the orientation toward the host country.

To summarize, much has still to be learned about the acculturation process of URMs, more precisely which individual level factors (e.g., gender, age), stress-related factors (e.g., traumatic experiences, daily stressors), or contextual factors (e.g., social support) influence the orientation toward the host country or the home country. To our knowledge, no study has examined the potential predictors of the acculturation process of URMs. Moreover, it is still unclear which acculturation strategies are preferred by this heterogeneous population. Consequently, the aim of this analysis was to gain a better understanding of the acculturation process of URMs in Germany. Our expectation was that the most prevalent acculturation strategies of URMs in Germany would be "Integration" and "Assimilation." This expectation is based on previous acculturation research in Germany with refugees (Copoc, 2019) and the so called "integration measures" the German government is offering to all URMs (e.g., free German language classes; Hertner, 2022) and the accommodation in CWYS, with professional and specifically trained staff, aiming to help the URMs to get used to the new environment.

Furthermore, the investigation aimed to explore the impact of individual characteristics, stress-related and contextual factors on the acculturation process in order to draw conclusions about the implications for further research, and to derive recommendations for political and mental health practice on how to improve the acculturation process of URMs, which might result in improved mental health and societal participation in URMs.

2. Methods

2.1. Design and procedure

The present study represents a secondary analysis of a subsample of the randomized controlled trial BETTER CARE (bettercare.ku.de; Rosner et al., 2020). The project was approved by the ethics committees at Ulm University (No. 243/19) and at the Catholic University of Eichstätt-Ingolstadt (No. 004-19). CYWS facilities with URMs were contacted through letters of invitation, phone calls, and digital information events. Once a CYWS facility had indicated its willingness to participate in the study, the staff of the CYWS facility identified possible participants, invited and informed them about the study. Inclusion criteria for participants were (1) age 12–20 years, (2) arrived in Germany as unaccompanied minors, (3) applied for asylum or intend to do so, (4) being cared for by a CYWS facility, (5) reported at least one traumatic event in line with the DSM-5 A criterion, and (6) written informed consent given by participant. In the case of minors under the age of 16, their legal guardians were informed and asked for informed written consent.

The assessment took place between July 2020 and October 2021 in the CYWS facilities or in a digital form due to the COVID-19 restrictions. The consent forms and survey measures used in this study were translated by professional translators in cooperation with the study team using the back-translation method (Guillemin et al., 1993) into English, French, Arabic, Dari, Farsi, Pashto, Somali, and Tigrinya.

All variables were assessed using self-report questionnaires on tablets or on paper. Screening appointments were conducted in groups, but the participants filled out the questionnaires by themselves. Each screening appointment took approximately 2 hours for the entire group. Trained staff from the study centers assisted the participants in completing the measures. Interpreters were present when participants were not literate in the languages in which the materials were provided. The participants were given vouchers worth a total of €35 for stores of their choice as compensation for their participation. After the screening, the participants were given a confidential written evaluation of their mental health status along with an individual treatment recommendation.

2.2. Measures

2.2.1. Acculturation orientation toward the home country and the host country

Acculturation orientation was assessed using the Brief Acculturation Orientation Scale (BAOS, Demes and Geeraert, 2014). The participants rated eight items (four items each for the orientation toward the home and the host country) on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), for instance "In Germany, it is important for me to have friends from my home country." The BAOS was specifically designed in response to the

criticism on Berry's model (Maehler and Shajek, 2016), by using continuous variables to measure acculturation instead of dichotomous variables. Previous studies showed good reliability for adult refugees (α = 0.87–0.89; Safdar et al., 2021). In the present study, both subscales showed good reliability (Cronbach's $\alpha_{BAOS\text{-}Home} = 0.80$, Cronbach's $\alpha_{BAOS\text{-}Host} = 0.76$).

2.2.2. Daily stressors

The experience of post-migration daily stressors was assessed using the Daily Stressors Scale for Young Refugees (DSSYR, Vervliet et al., 2014). On a 4-point Likert scale from 0 (*not*) to 3 (*very much*) the participants rated the extent to which they had experienced 19 different daily stressors, for instance "not enough food" (possible range: 0–57). The reliability of this scale was good (α = 0.86). This questionnaire is widely used in research with URMs (α = 0.79–0.91; Behrendt et al., 2022; Spaas et al., 2022). It was developed on the basis of the Columbia Impairment Scale (CIS), the Adolescents Complex Daily Stressors Scale (ACDSS), and the authors' own experiences in the field. Nevertheless, the validation study of this measure has not yet been published.

2.2.3. Traumatic experiences

The Child and Adolescent Trauma Screen was used to assess the number of traumatic events experienced (CATS-2, Sachser et al., 2022). The event checklist with 15 possible traumatic events was presented, for instance "Threatened, hit or hurt badly in my family." Participants could answer "*yes*" or "*no*" to indicate whether they had experienced the presented traumatic event or not. Previous studies with URMs (Müller et al., 2019; Pfeiffer et al., 2022) have shown sufficient to good reliabilities (α = 0.75–0.83). The reliability in the present study was excellent (α = 0.92).

2.2.4. Social support

Social support was assessed using an adapted version of the Social Support Questionnaire (SSQ6-G; Leppin et al., 1986). The general question "To whom can you turn confidentially, if you are in trouble or have problems, if you are in a bad mood, afraid or oppressed?" was asked and the participants could indicate the amount of support they receive from different contact persons (e.g., siblings, teacher) from *1* (*most likely*) to *4* (*never*) (13 items, α = 0.74). In the present investigation, the items of the SSQ6-G were dichotomized into *yes* (answers *1–3*) and *no* (answer *4*), and summed up to report the number of possible contact persons. In its original version, the SSQ6-G showed good reliability (α = 0.71 to 0.92).

Furthermore, contact with their families was assessed by means of one item "Do you have contact to your family" and a 6-point Likert scale [0 (*No*), 1 (*Yes, once a year or less*), 2 (*Yes, several times a year*), 3 (*Yes, at least once a month*), 4 (*Yes, at least once per week*), and 5 (*Yes, daily*)].

2.2.5. Group climate

The Group Climate in the CYWS was measured by the Group Climate Instrument for Children (Strijbosch et al., 2014). It contains 14 items and two subscales: open climate (9 items, α = 0.94) and closed climate (5 items, α = 0.50). Participants rated the items on a 5-point Likert-scale from 1 (*I do not agree*) to 5 (*I totally agree*). Due to the low reliability, this questionnaire was excluded in the present analysis.

2.3. Statistical analysis

Data analyses were conducted using IBM SPSS Statistics for Windows, Version 28.0. To profile the sociodemographic, the stress-related, and the contextual factors of the sample, descriptive statistics (means, standard deviation, ranges, and frequencies) and correlations were computed. To explore the frequencies of the four different acculturation strategies, the subscales of the BAOS were dichotomized at the scale center, and the participants were assigned to clusters according to how their orientation toward their home country and toward their host country Germany was described. In response to criticism of Berry's dimensional model of acculturation (Schwartz et al., 2010), the variables of the orientation toward the home country and the host country were deemed to be continuous in all further analyses in this study. Correlation analysis and regression models were calculated separately for each variable. For the DSSYR, a sum score of all items was calculated to capture both the number and the experienced intensity of daily stressors. For the CATS-2, the number of traumatic events were included, using the sum score of the CATS-2 event checklist.

Two multiple linear hierarchical regression analyses were conducted to examine the relative contribution of individual factors, as well as stress-related and contextual factors to the orientation toward the home country and the orientation toward the host country, separately. For each hierarchical regression, the first model included individual demographic characteristics, such as age, gender, and length of stay in the host country. The second model included stress-related factors, such as the number of traumatic experiences, the daily stressors, and the stress caused by asylum status. A third model included contextual factors such as social support. The dependent variable in the regressions was either the mean score of the BAOS subscale "orientation toward the home country" or "orientation toward the host country."

In a second step, the items of the DSSYR were entered as individual items instead of the sum score in order to consider the heterogeneity of the different types of daily stressors, and to investigate their individual impact. Consequently, the correlation between the single variables of the DSSYR and the BAOS subscales was calculated, and two additional multiple regression models were calculated. The first regression analysis targeted the orientation toward the home country and the second regression analysis the orientation toward the host country, including all 19 items of the DSSYR as independent variables.

A level of significance of $p < 0.05$ (two tailed) was predetermined in all analyses. Due to the exploratory character of the present analysis, no multiple test adjustments were necessary (Bender and Lange, 2001).

3. Results

Altogether $N = 132$ URMs who lived in 22 different CYWS facilities in Germany were included in the present investigation. Eight participants were excluded because of missing data (more than 30% of the items in one questionnaire were unanswered). Of the participants, $n = 101$ (82.5%) identified themselves as male, $n = 22$ (17.7%) as female, and $n = 1$ (0.8%) as diverse. Hence, the final sample for this investigation consisted of $N = 124$ URMs. They ranged in age between 13 and 20 ($M = 16.94$; $SD = 1.47$). They were born in 28 different countries, mainly in the Middle East (e.g., Afghanistan $n = 38$; Syria $n = 12$) and in African countries (e.g., Somalia $n = 15$; see Appendix for a detailed list). The length of stay in Germany ranged from 1 to 90 months ($M = 25.20$, $SD = 20.40$). Table 1

contains the descriptive characteristics of the full study sample ($N = 124$) and intercorrelations for each study variable. The participants reported between 1 and 14 traumatic events ($M = 6.57$, $SD = 3.07$). Furthermore, $n = 43$ (34.7%) had no contact with their family, $n = 31$ (25.0%) reported having contact with their family at least once a week, and $n = 19$ (15.3%) had contact with their family on a daily basis.

3.1. Current acculturation patterns of participating URMs

The participants scored higher than the mid-point on the scales of the orientation toward the home country ($M = 4.09$, $SD = 1.60$) and the orientation toward the host country Germany ($M = 5.36$, $SD = 1.26$). Of the participants, $n = 10$ (8.1%) displayed a marginalized, $n = 5$ (4.0%) a separated, $n = 46$ (37.1%) an assimilated, and $n = 54$ (43.5%) an integrated acculturation style. The values of $n = 9$ (7.3%) participants were positioned between two acculturation styles. For more details, see Figure 1.

3.2. Contribution of individual, stress-related, and contextual factors to the acculturation process

The results indicated that the orientation toward the host country Germany correlated positively with the reported stress regarding asylum status ($r = 0.261$, $p = 0.003$, 95% CI [0.089; 0.418]), and correlated positively with the orientation toward the home country ($r = 0.190$, $p = 0.035$, 95% CI [0.014; 0.354]). Furthermore, the orientation toward the home country correlated positively to a significant degree with the experience of daily stressors ($r = 0.201$, $p = 0.025$, 95% CI [0.026; 0.364]). None of the other variables correlated significantly with the acculturation scales.

For the dependent variable orientation toward the home country, only the second model was significant [$R^2 = 0.121$, $F(6, 115) = 2.648$; $p = 0.019$]. The results of the hierarchical regressions are presented in Table 2. The number of traumatic events was associated negatively with the orientation toward the home country ($\beta = -0.264$, $p = 0.009$), while the experience of daily stressors was associated positively with the orientation toward the home country ($\beta = 0.310$, $p = 0.001$). Model 3 was not significant. No regression model for the dependent variable of orientation toward the host country was significant (see Table 3).

3.3. Contribution of daily stressors to the acculturation process

Table 4 shows the correlations between the items of the DSSYR and the orientation toward the host and the home countries. Difficulties in obtaining official documents were related positively to a significant degree with the orientation toward Germany ($r = 0.184$, $p = 0.050$; 95% CI [0.000; 0.355]). Not having enough food ($r = 0.268$, $p = 0.003$; 95% CI [0.092; 0.427]), clothes ($r = 0.269$, $p = 0.003$; 95% CI [0.096; 0.427]), and/or money ($r = 0.376$, $p < 0.001$; 95% CI [0.211; 0.520]) as well as involuntarily changes to the CYWS facility ($r = 0.199$, $p = 0.029$, 95% CI [0.021; 0.365]) correlated positively with the orientation toward the home country. Difficulties in finding new friends in Germany correlated negatively with the orientation toward the home country ($r = -0.215$, $p = 0.017$; 95% CI [−0.377; −0.039]). Further multiple linear regression analyses were conducted to examine the relative contribution of the items of the DSSYR. The regression model for the dependent variable of

TABLE 1 Descriptive statistics and correlations for study variables.

Variable	*M* or *n*	*SD* or %	1	2	3	4	5	6	7a	7b	8
1. Gender (male)	101	82.1									
2. Age	16.94	1.47	0.07	–							
3. Length of stay in Germany	25.20	20.40	−0.02	0.30**	–						
4. Traumatic events	6.57	3.07	0.07	0.07	0.05	–					
5. Daily stressors	16.27	9.08	−0.01	−0.03	−0.11	0.34**	–				
6. Stress because of asylum status	5.59	3.35	0.00	0.00	−0.22*	0.36**	0.27**	–			
Social Support											
7a. Social support	5.89	2.46	−0.07	0.10	0.14	−0.06	0.10	−0.13	–		
7b. Contact with family	2.31	1.97	−0.16	0.01	0.31**	−0.20*	−0.07	−0.27**	0.16	–	
Acculturation Orientations											
8. Orientation home country	4.09	1.60	−0.02	−0.07	0.05	−0.14	0.20*	−0.04	0.08	0.10	–
9. Orientation host country	5.36	1.26	−0.04	−0.01	−0.14	0.09	0.12	0.26**	−0.06	−0.12	0.19*

Values are means ± SD or *n* (%), as appropriate.
*$p < 0.05$. **$p < 0.01$.

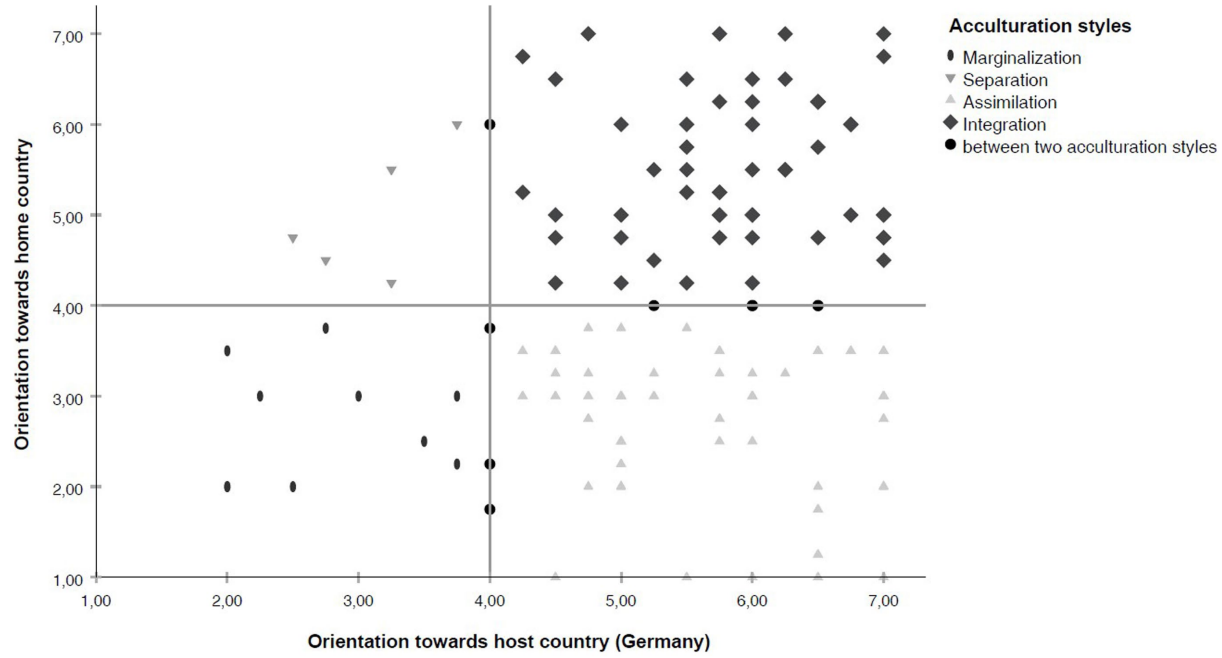

FIGURE 1
Acculturation styles.

orientation toward the host country Germany was not significant [$R^2 = 0.22$, $F(19, 70) = 1.01$, $p = 0.457$], but the regression model for the dependent variable of orientation toward the home country was significant [$R^2 = 0.34$, $F(19, 70) = 1.88$, $p = 0.03$; see Table 5]. The lack of money ($\beta = 0.377$, $p = 0.019$, 95% CI [0.096; 1.034]) and difficulties in making new friends ($\beta = -0.284$, $p = 0.014$; 95% CI [−0.914; −0.104]) was associated with the orientation toward the home country.

4. Discussion

The current study investigated the prevalence of acculturation strategies of URMs in Germany and possible predictors for orientation toward the host country and the home country. As expected, Integration (43.5%) and Assimilation (37.1%) were the most frequent acculturation styles reported by the participants. This is in line with previous studies with adult refugees in Germany (Copoc, 2019). It may back the assumption that the attitudes of the host society play a major role in the acculturation process of refugees (Berry, 1997). In the case of Germany, previous research has shown that the majority population expected refugees to assimilate into German society (Hertner, 2022). URMs in Germany might be confronted with these expectations through overt or subtle comments, behaviors, or policies (Katbeh, 2020), and react consciously or unconsciously with a stronger orientation toward the host country. This assumption is also supported by our finding that none of the studied factors were associated with the orientation toward the host country. This suggest that the attitudes of the receiving society might play an important part in the acculturation process of URMs. Nevertheless, other factors, such as the language proficiency of the URMs (Beißert et al., 2020) or the cultural distance between the home country and the host country (Sam and Berry, 2006) were not included in the present investigation, but might impact the acculturation process of URMs.

Similar to previous studies (Müller et al., 2019), the participants reported having experienced a high number of traumatic events in the present study, too. Higher numbers of traumatic events experienced by the URMs were linked to weaker orientation reported toward their home country or vice versa. It is common knowledge that URMs frequently experienced traumatic events in their home country (Pfeiffer et al., 2022). The weaker orientation toward the home country in relation to experiences of traumatic events might, therefore, constitute a coping strategy of the URMs to avoid being reminded of these traumatic experiences. Nevertheless, our findings contrasted with those of Jorgenson and Nilsson (2021). They did not report any significant association between traumatic experiences and acculturation. Jorgenson and Nilsson (2021) focused on adult Somali refugees in the United States whereas the participants in the present study were URMs in Germany. These two samples differ significantly regarding age and country of origin, and also regarding their migration journey, their current accommodation situation, and their current societal circumstances. Since individual, familial, and contextual factors should be considered when discussing the psychosocial well-being and the acculturation process of refugees (Demes and Geeraert, 2014; Arakelyan and Ager, 2021), generalizations between different refugee populations should be avoided. Instead, our investigation highlights the importance of taking a differentiated look at URMs. It suggests that the traumatic experiences of URMs in Germany might have a relation to the acculturation process that might be different from that of adult refugees.

Furthermore, the URMs reported a high number of daily stressors. This is in line with previous research with URMs after resettlement (Pfeiffer et al., 2022), and highlights the challenging living situation of URMs. In the present investigation, the experience of daily stressors was associated with a stronger orientation toward the home country. This means, that URMs who experienced more daily stressors might show a stronger orientation toward their home country or vice versa.

TABLE 2 Hierarchical regression with orientation toward the home country as dependent variable.

Variable	*B*	95% *CI* for *B*		*SE B*	β	R^2	ΔR^2
		LL	UL				
Step 1						0.014	0.014
Constant	5.94***	2.57	9.32	1.71			
Age	−0.12	−0.32	0.09	0.10	−0.11		
Gender	0.25	−0.50	1.00	0.38	0.06		
Length of stay	0.01*	−0.01	0.02	0.01	0.06		
Step 2						0.121*	0.107***
Constant	5.71***	2.43	8.99	1.66			
Age	−0.11	−0.30	0.09	0.10	−0.10		
Gender	0.36	−0.36	1.08	0.36	0.09		
Length of stay	0.01	−0.01	0.02	0.01	0.10		
Traumatic events	−0.14**	−0.24	−0.04	0.05	−0.26		
Daily stressors	0.05***	0.02	0.09	0.02	0.31		
Asylum stress	−0.01	−0.10	0.09	0.05	−0.01		
Step 3						0.124	0.003
Constant	5.51**	2.11	8.90	1.71			
Age	−0.11	−0.31	0.09	0.10	−0.10		
Gender	0.40	−0.34	1.13	0.37	0.10		
Length of stay	0.01	−0.01	0.02	0.01	0.09		
Traumatic events	−0.13*	−0.24	−0.03	0.05	−0.26		
Daily stressors	0.05**	0.02	0.09	0.02	0.30		
Asylum stress	−0.00	−0.10	0.09	0.05	−0.00		
Social support	−0.03	−0.09	0.15	0.06	0.05		
Contact with family	0.02	−0.13	0.18	0.08	0.03		

CI, confidence interval; LL, lower limit; UL, upper limit. $N = 123$.
*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

This outcome contrasted with Safdar et al. (2021) who did not report any association between daily stressors and the orientation toward the home country but suggested an association between daily stressors and the orientation toward the host country. There are several possible explanations for this result. The study by Safdar et al. (2021) was conducted with adult Syrian refugees and not with URMs. Moreover, to measure the perceived daily stressors, they used a checklist developed for Vietnamese immigrants in Canada (Lay and Nguyen, 1998) and not a dedicated instrument to measure the daily stressors young refugees may perceive in the host country like the one used in the present study. Nevertheless, it has to be acknowledged that URMs do experience specific daily stressors (Vervliet et al., 2014). It is, therefore, necessary to use special instruments to accommodate this situation. Hence, the present investigation suggests that, for URMs, the experience of daily stressors might lead to a stronger orientation toward their home country, potentially as a way of coping with negative experiences in the host country.

When considering the effects of different stressors independently, our results suggest that, more particularly, the perceived lack of money and fewer difficulties in making new friends might be related with the orientation toward the home country. Vervliet et al. (2015) investigated the aspirations of Afghan refugee minors in Belgium. In this host country, 67% of the participants had the aspiration of earning money for themselves and 56% had the aspiration of earning money for their family. In Germany, while living in CYWS facilities, the URMs only receive a small amount of pocket money according to German law (§34 SBG VIII). Therefore, these aspirations often cannot be fulfilled (Thomas et al., 2018). This might be linked to homesickness (Rosner et al., 2022). The feeling of homesickness might subsequently be related to URMs thinking more about their home country and might be correlated to the orientation toward the home country—as demonstrated in this investigation.

In the present investigation, difficulties in making new friends were negatively associated with the orientation toward the home country. Participants who faced more difficulties in making new friends reported a weaker orientation toward their home country, or vice versa. No significant association with the orientation toward the host country was shown. At first glance, this finding may seem counterintuitive as social support by peers has been identified as an important factor in the acculturation process (Oppedal and Idsoe, 2015). Nevertheless, previous research differentiated between the effect of having friends in the host country and having co-ethnic friends. On the one hand, having friends from the host country might lead to an increase of the orientation toward the host country—by learning the new language or coming into contact with traditions of the host country. On the other hand, having co-ethnic friends might lead to an increase of the orientation toward the home country by offering the possibility

TABLE 3 Hierarchical regression with orientation toward the host country as dependent variable.

Variable	*B*	95% *CI* for *B*		*SE B*	β	R^2	ΔR^2
		LL	UL				
Step 1						0.021	0.021
Constant	20.28***	9.55	31.01	5.42			
Age	0.13	−0.52	0.78	0.33	0.04		
Gender	−0.18	−2.56	2.20	1.20	−0.01		
Length of stay	−0.04	−0.09	0.01	0.02	−0.15		
Step 2						0.077	0.056
Constant	18.55***	7.82	29.28	5.42			
Age	0.07	−0.57	0.71	0.32	0.02		
Gender	−0.23	−2.59	2.12	1.19	−0.02		
Length of stay	−0.02	−0.07	0.03	0.02	−0.09		
Traumatic events	0.00	−0.33	0.33	0.17	0.00		
Daily stressors	0.02	0.09	0.13	0.05	0.04		
Asylum stress	0.34*	−0.05	0.64	0.15	0.23		
Step 3						0.079	0.002
Constant	19.10***	8.01	30.20	5.60			
Age	0.07	−0.58	0.72	0.33	0.02		
Gender	−0.32	−2.72	2.09	1.22	−0.02		
Length of stay	−0.02	−0.07	0.03	0.03	−0.08		
Traumatic events	−0.01	−0.35	0.33	0.17	0.01		
Daily stressors	0.03	−0.08	0.14	0.06	0.05		
Asylum stress	0.33*	0.03	0.64	0.16	0.22		
Social support	−0.03	−0.42	0.36	0.19	−0.02		
Contact with family	−0.11	−0.62	0.41	0.26	−0.04		

CI, confidence interval; LL, lower limit; UL, upper limit. $N = 123$.
*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

of integrating traditions or habits from their home country into their new living environment (Oppedal and Idsoe, 2015; Behrendt et al., 2021). Consequently, the reported difficulties in making new friends might be linked to the wish of having more co-ethnic friends in the host country. This might, in turn, lead to an increased orientation toward the host country.

4.1. Limitations

Several limitations to this investigation have to be borne in mind. First, acculturation must be understood as a lifelong process of negotiation between the home culture and the host culture (Sam and Berry, 2006). Moreover, the participants in the present study came from very different countries of origin and therefore, might have encountered very different acculturation challenges, depending on the customs in their home country. The results can, therefore, only give a first overview about the acculturation of URMs but cannot be generalized for all URMs. Moreover, given the high proportion of male participants (82.5%), the results cannot be easily transferred to merely female groups. Future studies should attempt to work with a larger sample size in order to provide more differentiated views of the acculturation process of URMs.

Second, acculturation is a complex process and might take place differently in various spheres of life (e.g., private vs. public, school vs. home; Safak-Ayvazoglu and Kunuroglu, 2021). This factor also needs to be discussed against the backdrop of the attitudes of the host country (Sam and Berry, 2006). The results of this investigation give a first impression of the overall acculturation orientations of URMs in Germany. Further studies should differentiate between various spheres, and also examine the attitudes of the members of the host country. Qualitative measures could provide further insights, and should be used in future studies.

Third, the results are only based on cross-sectional data, not allowing any causal one-directional conclusions. Future studies should investigate these potentially bi-directional effects in longitudinal study designs to gain further insights into the acculturation process of URMs. Nevertheless, URMs are a very mobile sample (Keles et al., 2018), and longitudinal studies with this population are, therefore, quite challenging, leading to a lack of follow-up data.

Fourth, in respect to the used questionnaires, the CATS-2 is only using a standardized checklist of potentially traumatic events, thus we cannot draw any conclusions about subjective experience behind the reported events. Furthermore, due to the unreliability of the Group Climate Instrument for Children (Strijbosch et al., 2014), this instrument could not be included in the analysis. Consequently, a

TABLE 4 Pearson correlation of items of DSSYR and BAOS Subscales.

	n	*M*	*SD*	BAOS-Host (*r*)	BAOS-Home (*r*)
Insufficient food	119	0.54	0.87	0.141	0.268**
Insufficient clothes	122	0.92	1.12	0.110	0.269**
Insufficient money	120	1.40	1.02	0.091	0.376***
Insufficient housing	122	0.47	0.86	0.135	0.175
Insufficient medical care	122	0.52	0.90	0.098	0.069
Insufficient access to education	122	0.51	0.87	0.066	0.178
Lack of information (about my rights, ongoing proceedings)	120	0.82	0.90	0.155	0.106
Feelings of insecurity	124	0.69	0.98	0.037	−0.033
Difficulties in making friends	123	0.73	0.94	0.012	−0.215*
Worries about family at home	112	2.13	1.02	0.031	0.115
Difficulties in obtaining legal residence documents	115	1.54	1.21	0.184*	0.024
Problems related to the age assessment procedure	115	0.41	0.83	−0.008	0.064
Difficulty communicating with others in the foreign language	124	1.11	0.97	0.128	0.146
Multiple involuntary changes of accommodation	121	0.68	1.05	0.148	0.199*
Boredom	124	1.21	0.94	−0.138	0.079
Feeling uncertain about the future	121	1.30	0.99	0.117	−0.028
Hearing people say bad things about myself	114	0.59	0.75	−0.116	−0.004
Feeling of being threatened differently compared to others	121	0.56	0.77	−0.085	0.005
Feeling that others have prejudices about myself or people of my country/ culture	120	0.78	0.84	−0.066	−0.084

DSSYR, daily stressors scale for young refugees; BAOS, brief acculturation orientation scale.
*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

limited number of contextual factors were considered in the present study. However, the acculturation process is also significantly influenced by societal and contextual factors, and should not be seen as the responsibility of the refugees alone. Further acculturation studies with URMs should take this aspect into account, especially as, in the present investigation, many individual factors did not play a significant role in the acculturation process of URMs.

Sixth, the present investigation was a secondary analysis of the randomized controlled trial "BETTER CARE" (Rosner et al., 2020). Therefore, there was no a priori power calculation made for this specific analysis. Moreover, due to the exploratory character of the present investigation, no alpha correction was made (Bender and Lange, 2001). Nevertheless, there is a potential risk of alpha error inflation, thus generalizations of the present findings should be avoided and previous studies are needed to replicate our findings.

4.2. Implications

Based on the research findings, several implications and recommendations could be derived that could help to improve the successful acculturation process of URMs in Germany. The beneficial acculturation patterns displayed by the URMs highlighted the positive effects of the German so-called "integration measures" (language courses, integration classes, accommodation in CYWS) for URMs. Nevertheless, there is a need to focus more on those who have not yet benefited from these offers, and who potentially displayed less favorable acculturation patterns such as Separation and Marginalization. Having identified specific factors that might have an influence on the acculturation process of URMs, the mental health of this vulnerable population can be improved by clinical, pedagogical and policy interventions that target the individual acculturation process more thoroughly. One way of doing this would be for policymakers and practitioners to focus not only on the orientation toward the host country, but also to consider the orientation toward the home country in their interventions and measures. Up to now, so-called "integration measures" in Germany have mainly sought to strengthen the orientation toward the host country, for example, by offering language courses (Katbeh, 2020; Hertner, 2022). Nevertheless, the present investigation highlights the relevance of the orientation toward the home country when dealing with negative experiences in the host society. Moreover, the association between difficulties in making new friends and poorer orientation toward the home country highlights the importance of creating opportunities for interaction and making friends with both co-ethnic peers and peers from the host society. Therefore, it is crucial to offer acculturation-based programs that strengthen both the orientation toward the home and the host country. This would give URMs an opportunity to develop their own bi- or multicultural identity and to acculturate according to their needs and at their own pace. In the long term, such changes, on the practical and political level, could impact the societal discourse in Germany leading to a shift from the expectation of assimilation (Katbeh, 2020) toward the "real" integration of minority groups such as URMs into the majority society. Moreover, as acculturation always depends on the host society, interventions should not refer solely to URMs, but also consider the perspective, expectations, and

TABLE 5 Multiple linear regressions for orientation toward the home country.

Variable	B	SE B	95% CI for B		β	*t*	*p*
			LL	UL			
Insufficient food	0.28	0.24	−0.21	0.77	0.16	1.15	0.254
Insufficient clothes	0.06	0.23	−0.41	0.52	0.04	0.25	0.804
Insufficient money	0.57*	0.24	0.10	1.03	0.38	2.40	0.019
Insufficient housing	0.09	0.34	−0.59	0.76	0.04	0.26	0.798
Insufficient medical care	−0.04	0.30	−0.63	0.55	−0.02	−0.13	0.896
Insufficient access to education	−0.11	0.30	−0.71	0.49	−0.06	−0.36	0.721
Lack of information (about my rights, ongoing proceedings)	0.36	0.24	−0.11	0.83	0.20	1.53	0.131
Feelings of insecurity	0.34	0.29	−0.23	0.91	0.17	1.18	0.241
Difficulties in making friends	−0.51*	0.20	−0.91	−0.10	−0.28	−2.51	0.014
Worries about family at home	0.14	0.18	−0.23	0.50	0.09	0.74	0.461
Difficulties in obtaining legal residence documents	−0.06	0.16	−0.38	0.27	−0.04	−0.35	0.726
Problems related to the age assessment procedure	−0.08	0.28	−0.63	0.47	−0.04	−0.30	0.768
Difficulty communicating with others in the foreign language	0.23	0.18	−0.13	0.60	0.15	1.29	0.201
Multiple involuntary changes of accommodation	0.09	0.22	−0.36	0.53	0.06	0.40	0.688
Boredom	0.03	0.21	−0.38	0.44	0.02	0.14	0.889
Feeling uncertain about the future	−0.13	0.23	−0.58	0.32	−0.08	−0.56	0.575
Hearing people say bad things about myself	−0.17	0.28	−0.73	0.39	−0.08	−0.60	0.554
Feeling of being threatened differently compared to others	−0.39	0.28	−0.95	0.18	−0.19	−1.37	0.174
Feeling that others have prejudices about myself or people of my country/culture	−0.30	0.26	−0.82	0.21	−0.16	−1.17	0.246

$R^2 = 0.337$; $F(19, 70) = 1.876$; $p = 0.030$. *$p < 0.05$.

participation of the majority society in order to generate a holistic view of the "integration discourse."

4.3. Conclusion

In sum, URMs in Germany mainly showed favorable acculturation patterns. Stress-related factors such as traumatic experiences and daily stressors may impact the acculturation process of URMs. The investigation highlights possible improvements in policy and practice, which could have lasting positive effects not only on the psychosocial health and social participation of URMs, but also on society as a whole. Future research should investigate the acculturation process in a longitudinal design, possibly over several years and across different developmental phases of the young refugees.

Data availability statement

The datasets generated for this study are available from the corresponding author on request.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committees at Ulm University (No. 243/19) and at the Catholic University of Eichstätt-Ingolstadt (No. 004-19). Written informed consent to participate in this study was provided by the participants and their legal guardians if necessary.

Author contributions

HK, RR, CS, and EP designed the study and were responsible for securing the funding. MG, JE, CS, and EP collected the data. MG performed the statistical analysis and drafted the paper under the supervision of EP and CS. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

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References

Arakelyan, S., and Ager, A. (2021). Annual research review: a multilevel bioecological analysis of factors influencing the mental health and psychosocial well-being of refugee children. *J. Child Psychol. Psychiatry* 62, 484–509. doi: 10.1111/jcpp.13355

Behrendt, M., Lietaert, I., and Derluyn, I. (2021). Continuity and social support: a longitudinal study of unaccompanied refugee minors' care networks. *J. Immigr. Refug. Stud.* 20, 398–412. doi: 10.1080/15562948.2021.1930322

Behrendt, M., Pfeiffer, E., Devlieger, I., Adeyinka, S., Rota, M., Uzureau, O., et al. (2022). The impact of daily stressors on unaccompanied young refugees' mental health: a longitudinal study. *Am. J. Orthop.* 92, 681–691. doi: 10.1037/ort0000644

Beißert, H., Gönültaş, S., and Mulvey, K. L. (2020). Social inclusion of refugee and native peers among adolescents: it is the language that matters! *J. Res. Adolesc.* 30, 219–233. doi: 10.1111/jora.12518

Bender, R., and Lange, S. (2001). Adjusting for multiple testing—when and how? *J. Clin. Epidemiol.* 54, 343–349. doi: 10.1016/S0895-4356(00)00314-0

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Appl. Psychol. Int. Rev.* 46, 5–34. doi: 10.1111/j.1464-0597.1997.tb01087.x

Berry, J. W., Phinney, J., Sam, D. L., and Vedder, P. (2006). Immigrant youth: acculturation, identity, and adaptation. *Appl. Psychol.* 55, 303–332. doi: 10.1111/j.1464-0597.2006.00256.x

Blackmore, R., Gray, K. M., Boyle, J. A., Fazel, M., Ranasinha, S., Fitzgerald, G., et al. (2020). Systematic review and Meta-analysis: the prevalence of mental illness in child and adolescent refugees and asylum seekers. *J. Am. Acad. Child Adolesc. Psychiatry* 59, 705–714. doi: 10.1016/j.jaac.2019.11.011

Blanc, A., Navas, M., Calderón, S., and Sánchez-Castelló, M. (2022). The importance of family in acculturation process of adolescents of Moroccan origin in Spain. *Int. J. Psychol.* 57, 240–250. doi: 10.1002/ijop.12804

Brook, M. I., and Ottemöller, F. G. (2020). A new life in Norway: the adaptation experiences of unaccompanied refugee minor girls. *Child Youth Serv. Rev.* 117:105287. doi: 10.1016/j.childyouth.2020.105287

Choy, B., Arunachalam, K., S, G., Taylor, M., and Lee, A. (2021). Systematic review: acculturation strategies and their impact on the mental health of migrant populations. *Public Health Pract.* 2:100069. doi: 10.1016/j.puhip.2020.100069

Copoc, P. (2019). Acculturation of Syrian refugees in Germany: using a variation of the multidimensional individual difference acculturation (MIDA) model in a new context. *Stud. Undergrad. Res. Guelph* 11, 1–12. doi: 10.21083/surg.v11i0.5219

d'Abreu, A., Castro-Olivo, S., and Ura, S. K. (2019). Understanding the role of acculturative stress on refugee youth mental health: a systematic review and ecological approach to assessment and intervention. *Sch. Psychol. Int.* 40, 107–127. doi: 10.1177/0143034318822688

Demes, K. A., and Geeraert, N. (2014). Measures matter: scales for adaptation, cultural distance, and acculturation orientation revisited. *J. Cross-Cult. Psychol.* 45, 91–109. doi: 10.1177/0022022113487590

El Khoury, S. J. (2019). Factors that impact the sociocultural adjustment and well-being of Syrian refugees in Stuttgart—Germany. *Br. J. Guid. Couns.* 47, 65–80. doi: 10.1080/03069885.2018.1520196

El-Awad, U., Fathi, A., Vasileva, M., Petermann, F., and Reinelt, T. (2021). Acculturation orientations and mental health when facing post-migration stress: differences between unaccompanied and accompanied male middle eastern refugee adolescents, first- and second-generation immigrant and native peers in Germany. *Int. J. Intercult. Relat.* 82, 232–246. doi: 10.1016/j.ijintrel.2021.04.002

Fazel, M., Reed, R. V., Panter-Brick, C., and Stein, A. (2012). Mental health of displaced and refugee children resettled in high-income countries: risk and protective factors. *Lancet* 379, 266–282. doi: 10.1016/S0140-6736(11)60051-2

Garcia, M. F., and Birman, D. (2022). Understanding the migration experience of unaccompanied youth: a review of the literature. *Am. J. Orthop.* 92, 79–102. doi: 10.1037/ort0000588

Green, M., King, E., and Fischer, F. (2021). Acculturation, social support and mental health outcomes among Syrian refugees in Germany. *J. Refug. Stud.* 34, 2421–2433. doi: 10.1093/jrs/fez095

Guillemin, F., Bombardier, C., and Beaton, D. (1993). Cross-cultural adaptation of health-related quality of life measures: literature review and proposed guidelines. *J. Clin. Epidemiol.* 46, 1417–1432. doi: 10.1016/0895-4356(93)90142-N

Hertner, I. (2022). Germany as 'a country of integration'? The CDU/CSU's policies and discourses on immigration during Angela Merkel's chancellorship. *J. Ethn. Migr. Stud.* 48, 461–481. doi: 10.1080/1369183X.2020.1853908

Hornfeck, F., Sowade, C., and Bovenschen, I. (2022). Effects of the asylum process on the mental health of unaccompanied young refugees—a scoping review. *Child Youth Serv. Rev.* 137:106490. doi: 10.1016/j.childyouth.2022.106490

Jorgenson, K. C., and Nilsson, J. E. (2021). The relationship among trauma, acculturation, and mental health symptoms in Somali refugees. *Couns. Psychol.* 49, 196–232. doi: 10.1177/0011000020968548

Karpenstein, J., and Rohleder, D. (2022). Die Situation geflüchteter junger Menschen in Deutschland. Bundesfachverband unbegleitete minderjährige Flüchtlinge.

Katbeh, A. (2020). Social integration of Syrian refugees in Germany: challenges and approaches. Harmoon center for contemporary studies. Available at: https://www.harmoon.org/wp-content/uploads/2020/10/Social-Integration-of-Syrian-Refugees-in-Germany_Katbeh_24.10.2020.pdf

Keles, S., Friborg, O., Idsøe, T., Sirin, S., and Oppedal, B. (2018). Resilience and acculturation among unaccompanied refugee minors. *Int. J. Behav. Dev.* 42, 52–63. doi: 10.1177/0165025416658136

Lay, C., and Nguyen, T. (1998). The role of acculturation-related and acculturation non-specific daily hassles: Vietnamese-Canadian students and psychological distress. *Can. J. Behav. Sci.* 30, 172–181. doi: 10.1037/h0087060

Leppin, A., Quast, H. H., and Sarason, I. G. (1986). Fragebogen zur Sozialen Unterstützung (Kurzform) SSQ6-G. *Skal. Zur Befindlichk. Persönlichkeit Forschungsbericht* 5, 195–202.

Lincoln, A. K., Lazarevic, V., White, M. T., and Ellis, B. H. (2016). The impact of acculturation style and acculturative hassles on the mental health of Somali adolescent refugees. *J. Immigr. Minor. Health* 18, 771–778. doi: 10.1007/s10903-015-0232-y

Lutterbach, S., and Beelmann, A. (2021). How refugees' stereotypes toward host society members predict acculturation orientations: the role of perceived discrimination. *Front. Psychol.* 12:612427. doi: 10.3389/fpsyg.2021.612427

Maehler, D., and Shajek, A. (2016). "Psychologische Akkulturationsforschung," in *Methoden der Migrationsforschung*. eds. D. Maehler and H. Brinkmann (Wiesbaden: Springer).

Müller, L. R. F., Büter, K. P., Rosner, R., and Unterhitzenberger, J. (2019). Mental health and associated stress factors in accompanied and unaccompanied refugee minors resettled in Germany: a cross-sectional study. *Child Adolesc. Psychiatry Ment. Health* 13:8. doi: 10.1186/s13034-019-0268-1

Oppedal, B., and Idsoe, T. (2012). Problemas de Conducta y Depresión entre Refugiados no Acompañados: La asociación entre el impacto del trauma pre-migratorio y la aculturación. *Anal. Psicol.* 28, 683–694. doi: 10.6018/analesps.28.3.155981

Oppedal, B., and Idsoe, T. (2015). The role of social support in the acculturation and mental health of unaccompanied minor asylum seekers. *Scand. J. Psychol.* 56, 203–211. doi: 10.1111/sjop.12194

Pfeiffer, E., Behrendt, M., Adeyinka, S., Devlieger, I., Rota, M., Uzureau, O., et al. (2022). Traumatic events, daily stressors and posttraumatic stress in unaccompanied young refugees during their flight: a longitudinal cross-country study. *Child Adolesc. Psychiatry Ment. Health* 16:26. doi: 10.1186/s13034-022-00461-2

Rosner, R., Hagl, M., Bücheler, L., and Comtesse, H. (2022). Homesickness in asylum seekers: the role of mental health and migration-related factors. *Front. Psychol.* 13:1034370. doi: 10.3389/fpsyt.2022.1034370

Rosner, R., Sachser, C., Hornfeck, F., Kilian, R., Kindler, H., Muche, R., et al. (2020). Improving mental health care for unaccompanied young refugees through a stepped-care approach versus usual care+: study protocol of a cluster randomized controlled hybrid effectiveness implementation trial. *Trials* 21:1013. doi: 10.1186/s13063-020-04922-x

Sachser, C., Berliner, L., Risch, E., Rosner, R., Birkeland, M. S., Eilers, R., et al. (2022). The child and adolescent trauma screen 2 (CATS-2)—validation of an instrument to measure DSM-5 and ICD-11 PTSD and complex PTSD in children and adolescents. *Eur. J. Psychotraumatol.* 13:2105580. doi: 10.1080/20008066.2022.2105580

Safak-Ayvazoglu, A., and Kunuroglu, F. (2021). Acculturation experiences and psychological well-being of Syrian refugees attending universities in Turkey: a qualitative study. *J. Divers. High. Educ.* 14, 96–109. doi: 10.1037/dhe0000148

Safdar, S., Ray-Yol, E., Reif, J. A., and Berger, R. (2021). Multidimensional individual difference acculturation (MIDA) model: Syrian refugees' adaptation into Germany. *Int. J. Intercult. Relat.* 85, 156–169. doi: 10.1016/j.ijintrel.2021.09.012

Sam, D. L., and Berry, J. W. (2006). *The Cambridge Handbook of Acculturation Psychology*. *1st* Edn. Cambridge University Press.

Schwartz, S. J., Unger, J. B., Zamboanga, B. L., and Szapocznik, J. (2010). Rethinking the concept of acculturation: implications for theory and research. *Am. Psychol.* 65, 237–251. doi: 10.1037/a0019330

Spaas, C., Verelst, A., Devlieger, I., Aalto, S., Andersen, A. J., Durbeej, N., et al. (2022). Mental health of refugee and non-refugee migrant young people in European secondary education: the role of family separation, daily material stress and perceived discrimination in resettlement. *J. Youth Adolesc.* 51, 848–870. doi: 10.1007/s10964-021-01515-y

Starck, A., Gutermann, J., Schouler-Ocak, M., Jesuthasan, J., Bongard, S., and Stangier, U. (2020). The relationship of acculturation, traumatic events and depression in female refugees. *Front. Psychol.* 11:906. doi: 10.3389/fpsyg.2020.00906

Strijbosch, E. L. L., van der Helm, G. H. P., van Brandenburg, M. E. T., Mecking, M., Wissink, I. B., and Stams, G. J. J. M. (2014). Children in residential care. *Res. Soc. Work. Pract.* 24, 462–469. doi: 10.1177/1049731513510045

Thomas, S., Sauer, M., and Zalewski, I. (2018). *Unbegleitete minderjährige Geflüchtete: Ihre Lebenssituationen und Perspektiven in Deutschland*. Transcript-Verlag.

United Nations High Commissioner for Refugees (ed.). (2021). Global trends: Forced displacement in 2020.

Vervliet, M., Lammertyn, J., Broekaert, E., and Derluyn, I. (2014). Longitudinal follow-up of the mental health of unaccompanied refugee minors. *Eur. Child Adolesc. Psychiatry* 23, 337–346. doi: 10.1007/s00787-013-0463-1

Vervliet, M., Vanobbergen, B., Broekaert, E., and Derluyn, I. (2015). The aspirations of afghan unaccompanied refugee minors before departure and on arrival in the host country. *Childhood* 22, 330–345. doi: 10.1177/0907568214533976

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EDITED BY
Hrayr Attarian,
Northwestern Medicine, United States

REVIEWED BY
Omar Gammoh,
Yarmouk University, Jordan
Usama EL-Awad,
Bielefeld University, Germany

*CORRESPONDENCE
Jenny Eglinsky
✉ Jenny.Eglinsky@uniklinik-ulm.de

†These authors have contributed equally to this work and share first authorship

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Mental health problems in unaccompanied young refugees and the impact of post-flight factors on PTSS, depression and anxiety–A secondary analysis of the Better Care study

Fabienne Hornfeck[1†], Jenny Eglinsky[2*†], Maike Garbade[2], Rita Rosner[3], Heinz Kindler[1], Elisa Pfeiffer[2] and Cedric Sachser[2]

[1]German Youth Institute, Munich, Germany, [2]Department of Child and Adolescent Psychiatry/Psychotherapy, Ulm University, Ulm, Germany, [3]Department of Psychology, Catholic University Eichstätt-Ingolstadt, Eichstätt, Germany

Background: Unaccompanied young refugees (UYRs) show elevated levels of mental distress such as post-traumatic stress symptoms (PTSS), depression, and anxiety. The individual post-arrival situation in the host country plays an important role in increasing or reducing mental health risks for these vulnerable children and youth. The study aims at examining the impact of pre- and post-migration factors on the mental health of UYRs.

Methods: A cross-sectional survey of *N* = 131 young refugees (81.7% male, *M* = 16.9 years old) was conducted in 22 children and youth welfare service (CYWS) facilities in Germany. The participants provided information about pre- and post-flight experiences. Standardized measures were used to assess post-traumatic stress symptoms (CATS-2), symptoms of depression (PHQ-9), and anxiety (GAD-7). Daily stressors were assessed with the Daily Stressors Scale for Young Refugees (DSSYR), sociocultural adaptation with the Brief Sociocultural Adaptation Scale (BSAS), satisfaction with social support with the Social Support Questionnaire (SSQ6-G).

Results: Our results demonstrated clinical levels of PTSS in 42.0% of the participants, depression in 29.0%, and anxiety in 21.4%. Hierarchical regression analyses revealed that a higher number of traumatic events and social daily stressors predicted higher levels in all three domains of mental health problems. PTSS and anxiety were also predicted by the distress related to the residence status, depressive symptoms were additionally predicted by sociocultural adaptation, less family contact and length of stay. The satisfaction with social support was not a significant predictor in the regression models.

Conclusion: Unaccompanied young refugees in CYWS facilities are a highly vulnerable population. As traumatic events, daily stressors and level of contact to

family directly impacted UYRs mental health, interventions should be trauma-focused, but also contain modules on how to cope with daily stressors. On the policy and practical level, stakeholders in host countries are called for establishing measures to reduce post-migration stressors and enhance support for UYRs on all levels.

KEYWORDS

unaccompanied young refugees, trauma, daily stressors, PTSS, depression, anxiety, mental health, child welfare services

1. Introduction

Among the refugee population, unaccompanied young refugees (UYRs) are often considered as the most vulnerable group–due to their young age and the lack of protection from a primary caregiver (Bean et al., 2007; Derluyn and Broekaert, 2008; Derluyn and Vervliet, 2012; Ingleby et al., 2012). Due to their precarious situation, UYRs have a special need for protection (UNHCR, 1997). It is well documented that UYRs are especially vulnerable to mental distress such as post-traumatic stress disorder (PTSD), depression, and anxiety (Fazel et al., 2012; Barghadouch et al., 2018; Norredam et al., 2018). Findings on the prevalence of psychological disorders based on screening questionnaires or clinical interviews are extremely heterogeneous. In a systematic review, El Baba and Colucci (2018) reported a high prevalence of post-traumatic stress symptoms (19.5%–67.3%), depressive symptoms (14.6–35.1%) and anxiety (25–36%) in UYRs arriving and living in a host country. Studies have also documented that these problems persist over time even several years after the flight experience and resettlement in the host country (Seglem et al., 2011; Eide and Hjern, 2013; Jensen et al., 2014; Jakobsen et al., 2017; Müller et al., 2019).

However, many UYRs show a remarkable resilience and high levels of functioning in their every-day lives, despite the experience of potentially traumatic events (Keles et al., 2018a; Popham et al., 2023). Hence, a growing number of researchers in the field attempt to identify factors that predict mental health outcomes of young refugees.

A considerable amount of literature has analyzed the role of risk factors affecting the mental health of young refugees before and during flight (e.g., gender, flight duration, country of origin). Several studies have documented that UYRs have experienced a wide range of adverse events before and during their flight (Bean et al., 2007; Fazel et al., 2012; Jensen et al., 2015). In a systematic review, Höhne et al. (2020) found that the number of stressful life events (e.g., exposure to war traumata or experience of violence) was the most important risk factor for UYRs mental health, indicating that a greater number of stressful life events is associated with more mental health problems. The number and severity of stressful life events has also been confirmed as risk factor for PTSS, depressive symptoms, and anxiety in a systematic review of El Baba and Colucci (2018). However, traumatic experiences do not necessarily lead to enduring mental health problems (Hodes et al., 2008; Carlson et al., 2012; Keles et al., 2018a), hence psychosocial factors and the interplay of individual and external stressors seem to play an important role in predicting young refugees' distress (Fazel et al., 2012; Höhne et al., 2020). Therefore, the identification of post-migration risk and protective factors for UYRs mental health is crucial for enabling a healthy development.

1.1. Post-migration factors

After arrival in the host country, refugees usually continue to face many challenges. Findings suggest that the impact of war and forced migration on mental health is compounded or alleviated by the post-migration resettlement context (Fazel et al., 2012; Höhne et al., 2020). Upon arrival in the host country, young refugees must still cope with the traumatic memories of past experiences and additionally might face stressors in the host country (like e.g., learn a new language, adapt to the new culture, deal with uncertainties about the future, worry about the family, loneliness etc.), which are summarized as post-migration stressors. In this new and uncertain life situation, the separation from their family members puts UYRs additionally at risk (Fazel et al., 2012; El Baba and Colucci, 2018). There are different models explaining the underlying processes of associations between post-migration stressors and mental distress. According to an ecological model of refugee distress proposed by Miller and Rasmussen (2017), ongoing stressors may prevent recovery from losses and traumatic experiences of war and might even hinder the effectiveness of therapeutic interventions through the depletion of functional coping mechanisms. In contrast, the "stress sensitivity theory" (Gunnar and Quevedo, 2007) proposes that traumatic experiences lead to an overreaction to ongoing demands and consequently decrease the tolerance for stressors. Additionally, the post-flight stressors themselves and their accumulation and continuance could increase the risk of serious mental health problems, like e.g., anxiety or depression (Bronstein and Montgomery, 2011). Hence, post-migration stressors seem to have a direct effect on mental distress, as well as indirect effects by preventing recovery and exacerbating symptoms from trauma.

1.1.1. Daily stressors

To date, there are only a few studies that shed light on the effect of daily stressors in UYRs, like e.g., perceived discrimination, stress related to legal procedures, living circumstances, economic concerns, worries about family members, and difficulties making

friends (Seglem et al., 2011; Vervliet et al., 2014; Keles et al., 2018b; Jensen et al., 2019; Dangmann et al., 2021). All of these studies were conducted in Western European countries and found that higher levels of daily stressors were associated with more mental health problems. Furthermore, a number of studies have focused on the differential impact of stressors like e.g., the impact of accommodation placement on psychological wellbeing (O'Higgins et al., 2018). Recent evidence indicates that being placed in a low support facility with greater restrictions presents a risk factor for the mental health of young refugees (Geltman et al., 2005; Jakobsen et al., 2017; Mitra and Hodes, 2019; Höhne et al., 2020). Accommodation in restrictive reception centers or detention centers negatively affects the wellbeing of UYRs, especially in terms of emotional problems (Reijneveld et al., 2005; Ehntholt et al., 2018), whereas higher care levels turned out to be beneficial for UYRs mental health (Bean et al., 2007; Hodes et al., 2008). Another factor that influences mental health and behavioral outcomes is the practice of multiple relocations within the asylum system (Nielsen et al., 2008). A review on studies investigating the impact of factors associated with the asylum process on mental health concluded, that refusal of asylum and insecure status had a negative effect on the wellbeing of UYRs as it produces a situation of instability and fear of return (Hornfeck et al., 2022). In another quantitative study, the fear of deportation was associated with mental distress (Höhne et al., 2021). However, a systematic understanding of what exactly is stressing UYRs during asylum procedures is still lacking.

1.1.2. Social support

There are several studies with refugee children and adolescents which highlight the protective effect of social support after resettlement for mental health and its importance for recovering after trauma (Fazel et al., 2012; Verelst et al., 2022). A study with UYRs in Germany by Sierau et al. (2018) showed that support from different social networks may have different effects on youth's mental health trajectories. Especially support from an adult mentor moderated the association between the number of stressful life events the youth had experienced and symptoms of PTSD, depression, and anxiety. A moderating effect of social support on the relationship between acculturative stress and anxious-depressed symptoms was found in a study with accompanied immigrant adolescents (Sirin et al., 2013). Oppedal and Idsoe (2015) found direct effects of social support on depression, but not PTSD symptoms in a group of resettled UYRs. Social support also predicted mental health problems in a recent study of Syrian refugee children from Popham et al. (2023).

1.1.3. Family contact

In prior studies, more contact with family members was found to be associated with better mental health outcomes in UYRs (Hollins et al., 2007; Oppedal and Idsoe, 2015; Sierau et al., 2019; Höhne et al., 2021; Behrendt et al., 2022). However, in another study with UYRs, no effect of family support was found (Sierau et al., 2018).

1.1.4. Sociocultural adaptation

Adapting to a new culture and environment also implies more practical and behavioral aspects, like adapting to an unknown school system, learning a new language, getting along in an unknown climate zone etc., Montgomery and Foldspang (2007) found associations between social adaptation and internalizing and externalizing behavior in young refugees. Evidence has also been presented that school attendance and language skills can have a protective effect on mental health of UYRs (Höhne et al., 2021).

1.1.5. Duration since arrival

Analyses on the association between length of stay in the host country and the level of mental health problems do not yield a consistent picture (Scharpf et al., 2021). Therefore, the time spent in a host country as an indicator may be entangled with the circumstances of the living situation and might only lead to better mental health outcomes in a favorable and stable environment.

1.2. Study aims and research questions

Although the number of studies on post-migration stressors has increased in recent years, there is still a great need for studies using validated instruments that investigate the differential impact of factors and controlling for the cumulative effect of traumatic events on the mental health of resettled UYRs.

This study aims to assess the current level of mental health problems in UYRs 5 years after the increased movement of refugees to European countries. Based on the literature, we expect high levels of PTSS, depression and anxiety in our sample of UYRs. The study further aims to expand the evidence base for the contribution of post-migration factors and sociocultural aspects to the mental health of UYRs. We suppose that UYRs reporting more post-migration stressors, less family contact, low satisfaction with social support, more distress regarding the asylum status, and a poorer adaptation to the new culture show poorer mental health outcomes with regard to PTSS, depression, and anxiety.

2. Materials and methods

The study was approved by the ethics review board of the University Ulm (243/19) and Eichstätt-Ingolstadt (004-19). The BETTER CARE study was registered in German Clinical Trials Register[1] and a study protocol was published (Rosner et al., 2020).

2.1. Procedure

The data used in this study were derived from the above-mentioned trial and baseline data of a predefined subsample were analyzed. The study was conducted in residential group homes for UYRs in four German federal states. After agreement with children and youth welfare services (CYWS) facilities, screenings with UYRs were organized with the help of social workers and caregivers in the facilities. If needed, interpreters were available in person. Prior to

1 https://drks.de/search/en;registration number DRKS00017453.

assessment, UYRs were fully informed about objectives, procedure and content of the study. Inclusion criteria for participants were (1) age 12–20 years, (2) arrived in Germany as unaccompanied minors, (3) applied for asylum or intend to do so, (4) living in a CYWS facility, (5) written informed consent given by participant and legal guardian (if <16 years at screening), and (6) reported at least one traumatic event in line with the DSM-5 A criterion.

2.2. Sample

Recruitment and screenings of UYRs took place between July 2020 and July 2021 in 22 CYWS facilities. The final sample consisted of N = 131 UYRs. 81.7% of the participants were male and 1% indicated a diverse gender. The age at assessment ranged between 13 and 20 years (M = 16.95; SD = 1.46) and they had resided between 1 and 90 months in Germany (M = 25.75; SD = 20.52). The participants came from 29 different countries of origin, most participants (30%) were born in Afghanistan. Demographic information on the participants is presented in **Table 1**.

2.3. Measures

All questionnaires were available in German, English, French, Arabic, Dari, Farsi, Pashtu, Somali, Tigrinya, Russian, and Kurmanci. Assessment of demographic information included age, education and information concerning residential status, the current living situation, and family contact. Two items on distress and anxiety regarding the current asylum status were rated on an 11-point Likert scale from 0 to 10. Contact with family members was rated from 0 (*no contact*) to 5 (*daily contact*).

The *Child and Adolescent Trauma Screen* (CATS-2: Sachser et al., 2022) was used to assess PTSS according to DSM-5 and ICD-11 criteria in children and adolescents. First, individual histories of trauma are examined by a traumatic event checklist consisting of 15 items. The severity of post-traumatic stress symptoms is measured via 25 items and responses on a 4-point scale ranging from 0 (*never*) to 3 (*almost always*). In the current study, we used the DSM-5 total symptom score ranging from 0 to 60 and a cut-off of 25 was set indicating a clinically relevant PTSS. Internal consistency (Cronbach's α = 0.92) in our sample was found to be excellent.

The *Patient Health Questionnaire* (PHQ-9: Kroenke et al., 2001; Kroenke and Spitzer, 2002) was used to measure symptoms of depression in our study. The items are rated on a 4-point scale ranging from 0 (*not at all*) to 3 (*nearly every day*) with a total score of 0 to 27 indicating the degree of impairment over the past 2 weeks. Based on the validation study by Kroenke et al. (2001), scores of 10 and higher are classified as clinically relevant. The PHQ-9 has been validated in many contexts and languages (Kroenke et al., 2001, 2010) and showed good reliability (Cronbach's α = 0.83) in the current sample.

The *Generalized Anxiety Disorder Scale* (GAD-7: Spitzer et al., 2006) is a 7-item rating scale based on diagnostic criteria of DSM-4 for generalized anxiety disorder and is widely used in research and clinical practice. The items are rated on a 4-point scale ranging from 0 (*not at all*) to 3 (*nearly every day*) with a total score of 0 to 21 indicating the degree of impairment over the past 2 weeks. Scores of 10 or more indicate the presence of clinically relevant levels of anxiety. The GAD-7 has been validated in many contexts and languages (Kroenke et al., 2010). In our sample a good reliability (Cronbach's α = 0.85) was indicated.

The *Brief Sociocultural Adaptation Scale* (BSAS: Demes and Geeraert, 2013) is a 12-item questionnaire assessing various aspects of sociocultural adaptation in everyday life (e.g., language, climate, people, values and beliefs). The participants were asked to rate the 12 items on a 7-point Likert-type scale from 1 (*very difficult*) to 7 (*very easy*) and an overall sum score between 12 and 84 was calculated. The scale demonstrated acceptable reliability (Cronbach's α = 0.79) and is available and validated in different languages. In 2 cases of the current sample (1.5%), data on this scale was missing.

The questions on social support are based on the *Social Support Questionnaire* (SSQ6-G: Leppin et al., 1986). Solely the item assessing satisfaction and the need for more or less support was included in the analysis. 62.5% are "satisfied as it is," 16.7% "would prefer to have more support," 15.0% "wish that people would have more time for me, when I'm addressing myself to them", and 5.8% "would like to have fewer social support." Due to the skewed distribution of the data, a dichotomous variable was calculated for correlation and regression analyses with 0 indicating dissatisfaction

TABLE 1 Sociodemographic characteristics of participating UYRs.

	M (*SD*); range	*n* (%)
Age	16.95 (1.46); 13–20	
Gender		
Male		107 (81.7)
Female		23 (17.6)
Diverse		1 (0.8)
Current school attendance		115 (87.8)
Country of origin		
Afghanistan		40 (30.5)
West Africa[a]		23 (17.7)
East Africa[b]		21 (16.0)
Syria		12 (9.2)
Iran		8 (6.1)
Religion		
Muslim		107 (84.9)
Christian		15 (11.9)
Buddismen		1 (0.8)
Other		3 (2.4)
Residence status		
Temporary residence permit		43 (32.8)
Pending process		48 (36.6)
Negative decision, tolerated stay		21 (16.0)
Negative decision		3 (2.3)
Other		16 (12.2)

M, mean; SD, standard deviation.
[a] West Africa: Guinea, Sierra Leone, Gambia, Mali, Nigeria, Benin, Ivory Coast.
[b] East Africa: Somalia, Ethiopia, Eritrea, Kenia.

with social support and 1 indicating satisfaction with social support. Information was missing for one case (0.7%).

The *Daily Stressors Scale for Young Refugees* (DSSYR: Vervliet et al., 2014) assesses to what extent 19 different post-migration daily stressors were experienced by the participants during the last month. Based on Behrendt et al. (2022), seven items were clustered indicating the amount of social stressors ("difficulties in making new friends," "difficulties to communicate with others due to the foreign language," "feeling bored," "feeling uncertain about the future," "hear people say bad things about me," "feeling of being treated unfairly compared to others," and "feeling that others have prejudices about me or people of my country/culture"), and nine items form the factor material stressors ("not enough food," "not enough clothing," "not enough money," "not enough housing," "not enough medical care," "not enough education," "lack of information," "feelings of unsafety," and "being forcibly and repeatedly moved"). The remaining three items were dropped. A sum score and a mean score of each factor was calculated. In 2 cases (1.5%), the mean scores could not be calculated due to too many missings. The questionnaire is available in many languages and showed good reliability (Cronbach's $\alpha = 0.86$) in our study.

2.4. Statistical analyses

Analysis was performed using IBM SPSS statistics version 28. Associations among continuous variables were calculated using bivariate, point-biserial correlations [Pearson correlation coefficients (r) reported]. In the case of skewed data, we conducted an additional Spearman correlation analysis. Three separate hierarchical multiple regression analyses were conducted to investigate the impact of pre- and post-flight factors on UYRs' PTSS, depression and anxiety. In a first step of the model, sociodemographic factors (age and gender) were included as control variables, the number of traumatic events were added in a second step, and post-migration factors (distress regarding residential status, length of stay, family contact, sociocultural adaptation, material and social stressors, and satisfaction with social support) were included in a third step. Due to the high intercorrelation with the variable "worries about deportation," only "distress regarding residential status" was included. All tests were two-tailed, and an alpha level of $p < 0.05$ was used.

3. Results

3.1. Preliminary analyses

Table 2 presents descriptive data for the CATS-2, PHQ-9, GAD-7, and pre- and post-migration factors.

Analyses of the frequencies revealed that 48.1% of UYRs showed clinically relevant levels of PTSS, 42.0% scored over the clinical cut-off for depressive symptoms and 29.0% for anxiety. 21.4% showed elevated levels in all three domains and 41.2% showed temporal resilience ranging below the cut-offs in all areas.

Bivariate correlations between all included variables were examined (Table 3). The results indicated that higher PTSS scores were associated with more distress regarding residential status, with a higher number of experienced traumatic events and more daily stressors. Additionally, less family contact, sociocultural adaptation and satisfaction with social support were also associated with higher PTSS scores. The same results were also found for higher anxiety and depression scores (with one exception – higher depression scores seem to be associated with less distress regarding residential status).

TABLE 2 Descriptive data on mental health outcomes and pre- and post-migration stressors of participants.

	M (*SD*); range	*n* (%)
CATS-2 sum score	24.56 (11.45)	
PHQ-9 sum score	8.69 (5.55)	
GAD-7 sum score	7.10 (4.80)	
Number of PTEs	6.56 (3.05); 1—14	
Frequency of UYRs reporting satisfaction with social support		75 (57.7)
Sociocultural adaptation	4.90 (0.91); 2—7	
Number of social stressors	4.09 (1.83); 0—7	
Number of material stressors	3.69 (2.46); 0—9	
Distress regarding residential status	5.60 (3.48)	
Worries about deportation	5.83 (4.14)	
Family contact	2.27 (1.96)	
No contact		46 (35.1)
Once a year or less		9 (6.9)
Several times a year		9 (6.9)
Monthly		16 (12.2)
Weekly		32 (24.4)
Daily		19 (14.5)

M, mean; SD, standard deviation; PTE, potential traumatic event; CATS, child and adolescent trauma screen; PHQ, patient health questionnaire; GAD, generalized anxiety disorder scale.

To control for effects of the origin on mental health outcomes, three separate ANOVAs with mental health outcomes as dependent variables and region of origin as independent variable were conducted. Four categories for the region were built: Middle East and North Africa, West Africa, East Africa, and others. No effect of the origin on the level of PTSS, depression, or anxiety was found.

3.2. Prediction of mental health outcomes

Tables 4–6 present the results of the three stepwise regression models. A significant regression equation was found for the second [$F(3,122) = 23.20$, $p < 0.001$] and third step [$F(10,115) = 13.47$, $p < 0.001$] of the hierarchical linear regression with PTSS as dependent variable. The whole model explained a significant proportion of variance ($R^2 = 0.540$, $R^2_{Adjusted} = 0.499$). The number of traumatic events, distress regarding residential status and social stressors turned out to be significant predictors of PTSS. In the hierarchical multiple linear regression model for symptoms of depression, the predictors included in step 2 [$F(3,122) = 10.41$, $p < 0.001$] and step 3 [$F(10,115) = 11.13$, $p < 0.001$] explained a significant amount of variance ($R^2 = 0.492$, $R^2_{Adjusted} = 0.448$). Depression was significantly predicted by

the number of traumatic events, material and social stressors, the time spend in Germany, contact frequency with family members, and sociocultural adaptation. Finally, in the hierarchical regression analysis of symptoms of anxiety as dependent variable [$F(10,115) = 7.38$, $p < 0.001$, $R^2 = 0.391$, $R^2_{Adjusted} = 0.338$], the results showed that the number of traumatic events, social stressors, distress regarding the residential status, and contact frequency with family members significantly predicted anxiety scores. Traumatic experiences explained 18.9% of the variance, and post-migration factors explained 19.5% of the variance. Overall, the most important predictors in all three models were the number of traumatic events and social stressors.

4. Discussion

During the past two decades, there has been a growing interest in the investigation of post-migration stressors and their impact on the mental health of young refugees (Fazel et al., 2012; Höhne et al., 2020). The present study extends the knowledge on prevalences of mental health problems in UYRs living in the unique setting of residential care facilities and adds further insight into the role of post-migration factors. In the present sample, the frequencies of clinically relevant levels of PTSS (48.1%), depressive symptoms (42%), and anxiety (29%) fell within the wide range of prevalences reported in previous studies on young refugees (e.g., Witt et al., 2015; El Baba and Colucci, 2018) and emphasize the high vulnerability of UYRs. Compared to a German study with UYRs in group homes (Sierau et al., 2019), the authors reported similar frequencies of clinically relevant levels of depression (42.0%) and anxiety (23.8%), but lower prevalences for PTSS (32%) than in the present study. However, there is a substantial number of UYRs in the present study (41.2%) with no identifiable mental health problems despite adverse experiences before, during and after flight. This is in line with more recent research and practice highlighting the resilience of young refugees and a growing number of studies attempting to identify factors contributing to healthy trajectories (Montgomery, 2010; Vindevogel and Verelst, 2020; Popham et al., 2023).

The results of the current study indicate that both traumatic experiences and post-migration factors have a large impact on the mental health outcomes of UYRs after arrival in a host country, which is in line with previous studies of young refugee populations (Montgomery, 2010; Fazel et al., 2012; Höhne et al., 2020).

Consistent with a large body of literature (Fazel et al., 2012; El Baba and Colucci, 2018; Höhne et al., 2020), UYRs who reported more traumatic events showed higher symptom levels of PTSS, depression and anxiety. The effect remained significant even when post-migration factors were included in the analyses, highlighting the ongoing impact of traumatic events UYRs have undergone before and during flight.

The study focused on the influence of post-migration factors which represent an additional risk for UYRs' wellbeing after controlling for the number of traumatic events. Compared to prior studies using the DSSYR questionnaire (Vervliet et al., 2014; Behrendt et al., 2022), the young participants reported a relatively high number of daily stressors (especially worries about the family, financial problems, uncertainty regarding their future,

TABLE 3 Bivariate correlations between included variables.

	n	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	127	–												
2. Gender	127	0.060	–											
3. Length of stay	127	0.297***	−0.039	–										
4. Distress regarding residential status	127	0.97	−0.006	−182*	–									
5. Family contact	127	−0.017	−0.171	0.303***	−0.181*	–								
6. Number of PTEs	127	0.059	0.067	0.008	0.366***	−0.203*	–							
7. PTSS	127	0.085	0.085	−0.104	0.467***	−0.278**	0.600***	–						
8. Depression	127	0.047	0.156	0.056	−0.262**	−0.237**	0.419***	0.738***	–					
9. Anxiety	127	0.010	0.084	−0.004	0.355***	−0.303***	0.430***	0.785***	0.813***	–				
10. Sociocultural adaptation	127	−0.091	−0.270**	0.092	−0.211*	0.115	−0.251**	−0.357***	−0.451***	−0.319***	–			
11. Social stressors	127	0.154	0.123	−0.023	0.150	−0.153	0.283**	0.458***	0.497***	0.412***	0.373***	–		
12. Material stressors	127	−0.079	−0.050	−0.172	0.194*	−0.040	0.243**	0.333***	0.452***	0.293**	−0.291**	0.420***	-	
13. Satisfaction with social support	127	0.041	−0.038	0.034	−0.257**	0.160	−0.284***	−0.352***	−0.211*	−0.231**	0.353***	−0.229**	−0.248**	-

*$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$. PTE, potential traumatic event; PTSS, post-traumatic stress symptoms.

TABLE 4 Hierarchical regression with post-traumatic stress symptoms (CATS-2) as dependent variable.

Variable	B	95% CI for B		SE B	β	Δ R^2
		LL	*UL*			
Step 1 Constant, gender, age						0.015
Step 2 Constant, gender, age, number of PTEs						0.349***
Step 3						0.176***
Constant	10.07	−11.65	31.78	10.96		
Age	0.07	−1.02	1.15	0.55	0.01	
Gender	−0.17	−3.94	3.59	1.89	−0.01	
Number of PTEs	1.42***	0.88	1.97	0.27	0.38	
Length of stay	−0.01	−0.09	0.07	0.04	−0.02	
Distress regarding residential status	0.75**	0.28	1.21	0.24	0.23	
Family contact	−0.58	−1.41	0.26	0.42	−0.10	
Sociocultural adaptation	−0.93	−2.84	0.99	0.97	−0.07	
Social stressors	10.22**	3.60	16.83	3.34	0.23	
Material stressors	2.24	−4.01	8.50	3.16	0.05	
Satisfaction with social support	−1.87	−5.19	1.44	1.67	−0.08	
$R^2 = 0.540$						

$N = 126$, $^{**}p < 0.01$, and $^{***}p < 0.001$. PTE, potential traumatic event.

TABLE 5 Hierarchical regression with symptoms of depression (PHQ-9) as dependent variable.

Variable	B	95% CI for B		SE B	β	Δ R^2
		LL	*UL*			
Step 1 Constant, gender, age						0.024
Step 2 Constant, gender, age, number of PTEs						0.179***
Step 3						0.288***
Constant	13.86	2.89	24.84	5.54		
Age	−0.38	−0.93	0.17	0.28	−0.10	
Gender	0.47	−1.43	2.37	0.96	0.04	
Number of PTEs	0.35*	0.07	0.62	0.14	0.19	
Length of stay	0.06**	0.02	0.10	0.02	0.22	
Distress regarding residential status	0.17	−0.07	0.41	0.12	0.11	
Family contact	−0.52**	−0.94	−0.10	0.21	−0.18	
Sociocultural adaptation	−1.61**	−2.58	−0.65	0.49	−0.26	
Social stressors	5.10**	1.76	8.44	1.69	0.24	
Material stressors	4.57**	1.41	7.73	1.60	0.23	
Satisfaction with social support	0.97	−0.70	2.65	0.84	0.09	
$R^2 = 0.492$						

$N = 126$, $^{*}p < 0.05$, $^{**}p < 0.01$, and $^{***}p < 0.001$. PTE, potential traumatic event.

and boredom). Consistent with prior findings, the cumulation of daily stressors seems to potentiate mental distress in young refugees (Seglem et al., 2011; Vervliet et al., 2014; Keles et al., 2018b; Jensen et al., 2019; Dangmann et al., 2021; Behrendt et al., 2022). The results of the regression analyses further showed, that especially the number of social stressors (like e.g., experiences of discrimination, and boredom) predicted the severity of mental health problems, while material stressors (like e.g., lack of food or money) only had an additional impact on the prediction of symptoms of depression. Consistent with findings from a recent study (Derluyn et al., 2023), social hardships (such as problems in building friendships or being confronted with prejudice and discrimination) directly lead to distress showing that the social environment and integration is crucial for UYRs' mental health. When basic (material) needs are met, this is indeed one of the main developmental tasks in adolescence and impacts UYRs' wellbeing just as their peers' wellbeing.

As one of the first studies, these analyses included an individual measure for UYRs' feelings regarding their residential status. Regardless of the status itself or problems obtaining legal documents, individual worries about the residential status predicted higher PTSS and anxiety scores. In previous studies, high levels of distress and PTSS have also been found among UYRs with insecure residence status (Gerlach and Pietrowsky, 2012; Lamkaddem et al., 2015) and after a refusal of their asylum claim (Jakobsen et al., 2017; Müller et al., 2019; Unterhitzenberger et al., 2019).

The study further investigated the beneficial effect of post-migration factors and especially focused on sociocultural adaptation, family contact, and social support. In line with previous publications (Hollins et al., 2007; Oppedal and Idsoe, 2015; Sierau et al., 2019; Höhne et al., 2021; Behrendt et al., 2022), the findings demonstrate the positive effect of contact to family members, in the way that more frequent contact went along with less symptoms of anxiety and depression. Family members still seem to play an important role in the everyday life of UYRs. To know about the whereabouts of the family and to potentially share thoughts and problems might alleviate sadness and worries, while less contact appears to be associated with more worries and anxiety.

Practical aspects of the sociocultural adaptation to the new environment have not been the major focus of previous studies. The results of the current study show that UYRs with less problems regarding their environment (e.g., weather conditions, social and cultural norms) report lower levels of depression indicating that

TABLE 6 Hierarchical regression with symptoms of anxiety (GAD-7) as dependent variable.

Variable	B	95% CI for B		SE B	β	Δ R^2
		LL	*UL*			
Step 1 Constant, gender, age						0.007
Step 2 Constant, gender, age, number of PTEs						0.189***
Step 3						0.195***
Constant	10.98	0.51	21.45	5.29		
Age	−0.42	−0.94	0.11	0.26	−0.13	
Gender	−0.23	−2.04	1.58	0.92	−0.02	
Number of PTEs	0.34*	0.07	0.60	0.13	0.21	
Length of stay	0.04	−0.00	0.08	0.02	0.16	
Distress regarding residential status	0.30**	0.08	0.53	0.11	0.22	
Family contact	−0.55**	−0.96	−0.15	0.20	−0.22	
Sociocultural adaptation	−0.73	−1.65	0.20	0.47	−0.14	
Social stressors	4.42**	1.23	7.61	1.61	0.24	
Material stressors	1.06	−1.95	4.08	1.52	0.06	
Satisfaction with social support	0.27	−1.33	1.86	0.81	0.03	
$R^2 = 0.391$						

$N = 127$, $^*p < 0.05$, $^{**}p < 0.01$, and $^{***}p < 0.001$. PTE, potential traumatic event.

adaptation and integration seem to be beneficial for mental health, which is in line with findings from prior studies (Montgomery and Foldspang, 2007; Höhne et al., 2021). However, we would have expected, that a longer stay in the host country would enable a better sociocultural adaptation and better mental health outcomes along with it, but a negative effect of the duration variable on depressive symptoms has been found. This finding might be explained by growing worries of UYRs when they approach the age of adulthood and the moment when they have to leave the CYWS facility.

Contrary to prior studies (Sirin et al., 2013; Oppedal and Idsoe, 2015; Sierau et al., 2018; Popham et al., 2023), satisfaction with social support did not predict mental health problems in the current study. This might be due to methodological reasons (e.g., satisfaction with social support measured only by a single item) or due to the fact that we did not examine whether there is support from at least one adult mentor.

4.1. Strengths and limitations

As a strength, the study used validated and standardized self-report measures to assess mental health outcomes and post-migration stressors in UYRs which allows for comparing the study results to findings of other previous and future studies. Additionally, the study was highly heterogeneous including UYRs from different countries of origins and geographical regions and screening was performed in 22 different CYWS all over Germany. Moreover, different post-migration factors (e.g., daily stressors, sociocultural adaptation) have been considered for the analyses.

However, several limitations of the current study need to be addressed. First, our results may be influenced by selection bias, as participation in the study was voluntary and UYRs with severe or no mental health problems may have not participated in the study. Therefore, results might not be fully generalizable to the UYRs population resettled in Germany. Second, social desirability may have influenced the responses of UYRs, resulting in an underestimation of effects. Third, despite the high validity of the questionnaires for mental health outcomes, the screening instruments for PTSS, depression, and anxiety are not sufficient to obtain reliable diagnoses. In future studies, more detailed information should be obtained by using semi-structured clinical interviews to obtain symptom load and diagnoses of PTSS, depression and anxiety. Caution is also warranted when interpreting the results of the DSSYR questionnaire and the two-factor structure because a broad validation is still lacking. Fourth, the cross-sectional nature of the study does not allow for causal conclusions but provides an insight into the complex interplay of risk and protective factors for UYRs mental health. The interactions between stressors and mental health problems might also be the result of a bidirectional relationship and more complex and transactional models (Keles et al., 2016). Moreover, the correlational design precludes us from drawing conclusions about the longitudinal development of UYRs' mental health problems, and how the impact of different risk factors varies over time. Hence, further longitudinal studies are needed to examine causal associations between pre- and post-migration stress and mental health outcomes in these populations. Fifth, with regard to the variety of geographical regions of origin, the analyses did not allow to distinguish between each different country of origin due to the small group sizes, so the results might not be comparable to studies including e.g., solely war affected participants (Popham et al., 2023). Sixth, given the high proportion of male participants (81.7%), the results cannot be easily transferred to merely female groups. However, the relatively small proportion of girls is representative for the group of UYRs in Germany (Deutscher Bundestag, 2020). Seventh, health status and medication used by UYRs was not included in the analysis due to a lack of data provided on this information. Eighth, the results have to be interpreted with caution due to the skewed distribution of the assessed variables and the small sample size, which limits generalizability of the results.

4.2. Conclusion and implications

The results of the study highlight both resilient and vulnerable patterns of UYRs' mental health and emphasize the importance of traumatic experiences and post-migration factors for the mental health of UYRs after resettlement in a host country. Our study demonstrated that nearly 60% of UYRs showed alarming levels of mental health problems at least in one domaine and are potentially

in high need for support to manage post-traumatic stress, daily stressors and to adapt themselves to the new environment. Even though the German residential care system is characterized by a comparably high professionalization of staff and small group sizes (Hardera et al., 2013), the examined prevalence of mental disorders is as high as in other international studies. As a consequence, there is a need for interventions that focus on both, resolving PTSS by using trauma-focused approaches, but also including strategies on how to cope with multiple daily stressors in the host country. Moreover, social workers and staff in residential care facilities play an important role in recognizing mental health problems in UYRs and helping them to get along with current stressors. They may also create technical conditions to enhance contact to family members. Additionally, policy makers and health authorities should promote an environment with reduced daily stressors, and fewer risks for new traumatization and distress. Among other measures, this comprises a long-term stability of residence and future perspectives, but also antidiscrimination campaigns and a favorable social environment.

However, the results do not allow any conclusions to be drawn about interactions between the factors and potential mediating or moderating effects. Therefore, future studies should further investigate these effects in order to gain more knowledge about conditions that have the potential to buffer the impact of negative experiences. Moreover, more data is needed on the trajectory of mental health problems of UYRs over time, especially when they leave the care system and are often left alone without intensive support. Future research should further examine differences in mental health outcomes between unaccompanied and accompanied young refugees in order to adjust actions and interventions to their individual needs.

Data availability statement

The datasets generated for this study is available from the corresponding author on request.

Ethics statement

The study was approved by the Ethics review board of the University Ulm (243/19) and Eichstätt-Ingolstadt (004-19). Written informed consent to participate in this study was provided by the participants and their legal guardians.

Author contributions

RR, HK, EP, and CS contributed to the study conception and design. EP, CS, MG, JE, and FH performed the material preparation and data collection. FH and JE performed the statistical analysis and wrote the first draft of the manuscript. All authors commented on previous versions of the manuscript and read and approved the final manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Barghadouch, A., Carlsson, J., and Norredam, M. (2018). Psychiatric disorders and predictors hereof among refugee children in early adulthood: a register-based cohort study. *J. Nervous Ment Dis.* 206, 3–10. doi: 10.1097/NMD.0000000000000576

Bean, T. M., Eurelings-Bontekoe, E., and Spinhoven, P. (2007). Course and predictors of mental health of unaccompanied refugee minors in the Netherlands: one year follow-up. *Soc. Sci. Med.* 64, 1204–1215. doi: 10.1016/j.socscimed.2006.11.010

Behrendt, M., Pfeiffer, E., Devlieger, I., Adeyinka, S., Rota, M., Uzureau, O., et al. (2022). The impact of daily stressors on unaccompanied young refugees' mental health: a longitudinal study. *Am. J. Orthopsychiatry*. doi: 10.1037/ort0000644 [Epub ahead of print].

Bronstein, I., and Montgomery, P. (2011). Psychological distress in refugee children: a systematic review. *Clin. Child Family Psychol. Rev.* 14, 44–56. doi: 10.1007/s10567-010-0081-0

Carlson, B. E., Cacciatore, J., and Klimek, B. (2012). A risk and resilience perspective on unaccompanied refugee minors. *Soc. Work* 57, 259–269. doi: 10.1093/sw/sws003

Dangmann, C., Solberg, Ø, and Andersen, P. N. (2021). Health-related quality of life in refugee youth and the mediating role of mental distress and post-migration stressors. *Quality Life Res. Int. J. Qualit. Life Aspects Treat. Care Rehabili.* 30, 2287–2297. doi: 10.1007/s11136-021-02811-7

Demes, K. A., and Geeraert, N. (2013). Measures matter: scales for adaption, cultural distance, and acculturation orientation revisited. *J. Cross Cult. Psychol.* 45, 91–109. doi: 10.1177/0022022113487590

Derluyn, I., and Broekaert, E. (2008). Unaccompanied refugee children and adolescents: the glaring contrast between a legal and a psychological perspective. *Int. J. Law Psychiatry* 31, 319–330. doi: 10.1016/j.ijlp.2008.06.006

Derluyn, I., and Vervliet, M. (2012). "The wellbeing of unaccompanied refugee minors," in *Health inequalities and risk factors among migrants and ethnic minorities*, eds D. Ingleby, A. Krasnik, O. Razum, and V. Lorant *Bericht der Bundesregierung zur Situation unbegleiteter Minderjähriger in Deutschland*. Drucksache 19/17810. Berlin: Buch- und Offsetdruckerei H. Heenemann GmbH & Co. KG. 95–109.

Derluyn, I., Orsini, G., Verhaeghe, F., Elhaj, R., Lietaert, I., and Pfeiffer, E. (2023). The impact of trauma and daily hardships on the mental health of unaccompanied refugee minors detained in Libya. *BJPsych Open* 9:E8. doi: 10.1192/bjo.2022.622

Deutscher Bundestag (2020). Bericht der Bundesregierung zur Situation unbegleiteter Minderjähriger in Deutschland: Drucksache 19/17810.

Ehntholt, K. A., Trickey, D., Harris Hendriks, J., Chambers, H., Scott, M., and Yule, W. (2018). Mental health of unaccompanied asylum-seeking adolescents previously held in British detention centres. *Clin. Child Psychol. Psychiatry* 23, 238–257. doi: 10.1177/1359104518758839

Eide, K., and Hjern, A. (2013). Unaccompanied refugee children - vulnerability and agency. *Acta Paediatr.* 102, 666–668. doi: 10.1111/apa.12258

El Baba, R., and Colucci, E. (2018). Post-traumatic stress disorders, depression, and anxiety in unaccompanied refugee minors exposed to war-related trauma: a systematic review. *Int. J. Cult. Mental Health* 11, 194–207. doi: 10.1080/17542863.2017.1355929

Fazel, M., Reed, R. V., Panter-Brick, C., and Stein, A. (2012). Mental health of displaced and refugee children resettled in high-income countries: risk and protective factors. *Lancet* 379, 266–282. doi: 10.1016/S0140-6736(11)60051-2

Geltman, P. L., Grant-Knight, W., Mehta, S. D., Lloyd-Travaglini, C., Lustig, S., Landgraf, J. M., et al. (2005). The "lost boys of sudan": functional and behavioral health of unaccompanied refugee minors resettled in the United States. *Arch. Pediatr. Adoles. Med.* 159, 585–591. doi: 10.1001/archpedi.159.6.585

Gerlach, C., and Pietrowsky, R. (2012). Trauma und Aufenthaltsstatus: Einfluss eines unsicheren Aufenthaltsstatus auf die Traumasymptomatik bei Flüchtlingen. *Verhaltenstherapie & Verhaltensmedizin* 33, 5–19.

Gunnar, M., and Quevedo, K. (2007). The neurobiology of stress and development. *Ann. Rev. Psychol.* 58, 145–173. doi: 10.1146/annurev.psych.58.110405.085605

Hardera, A. T., Zeller, M., López, M., Köngeter, S., and Knorth, E. J. (2013). Different sizes, similar challenges: out of home care for youth in Germany and the Netherlands. *Psychosoc. Int.* 22, 203–213. doi: 10.5093/in2013a24

Hodes, M., Jagdev, D., Chandra, N., and Cunniff, A. (2008). Risk and resilience for psychological distress amongst unaccompanied asylum seeking adolescents. *J. Child Psychol. Psychiatry Allied Dis.* 49, 723–732. doi: 10.1111/j.1469-7610.2008.01912.x

Höhne, E., Banaschewski, T., Bajbouj, M., Böge, K., Sukale, T., and Kamp-Becker, I. (2021). Prevalences of mental distress and its associated factors in unaccompanied refugee minors in Germany. *Eur. Child Adoles Psychiatry*. doi: 10.1007/s00787-021-01926-z [Epub ahead of print].

Höhne, E., van der Meer, A. S., Kamp-Becker, I., and Christiansen, H. (2020). A systematic review of risk and protective factors of mental health in unaccompanied minor refugees. *Eur. Child Adoles Psychiatry*. doi: 10.1007/s00787-020-01678-2 [Epub ahead of print].

Hollins, K., Heydari, H., Grayson, K., and Leavey, G. (2007). The mental health and social circumstances of kosovan albanian and albanian unaccompanied refugee adolescents living in London. *Div. Health Soc. Care* 4, 277–285.

Hornfeck, F., Sowade, C., and Bovenschen, I. (2022). Effects of the asylum process on the mental health of unaccompanied young refugees – a scoping review. *Child. Youth Serv. Rev.* 137:106490. doi: 10.1016/j.childyouth.2022.106490

Ingleby, D., Krasnik, A., Razum, O., and Lorant, V. (eds). (2012). *Health inequalities and risk factors among migrants and ethnic minorities*. Vol. 1. Antwerp: Garant.

Jakobsen, M., DeMott, M. A., Wentzel-Larsen, T., and Heir, T. (2017). The impact of the asylum process on mental health: a longitudinal study of unaccompanied refugee minors in Norway. *BMJ Open* 7:e015157. doi: 10.1136/bmjopen-2016-015157

Jensen, T. K., Fjermestad, K. W., Granly, L., and Wilhelmsen, N. H. (2015). Stressful life experiences and mental health problems among unaccompanied asylum-seeking children. *Clin. Child Psychol. Psychiatry* 20, 106–116. doi: 10.1177/1359104513499356

Jensen, T. K., Skar, A., Andersson, E. S., and Birkeland, M. S. (2019). Long-term mental health in unaccompanied refugee minors: pre- and post-flight predictors. *Eur. Child Adoles. Psychiatry*. doi: 10.1007/s00787-019-01340-6 [Epub ahead of print].

Jensen, T. K., Skardalsmo, E. M. B., and Fjermestad, K. W. (2014). Development of mental health problems - a follow-up study of unaccompanied refugee minors. *Child Adoles Psychiatry Mental Health* 29:1753. doi: 10.1186/1753-2000-8-29

Keles, S., Friborg, O., Idsøe, T., Sirin, S., and Oppedal, B. (2016). Depression among unaccompanied minor refugees: the relative contribution of general and acculturation-specific daily hassles. *Ethn. Health* 21, 300–317. doi: 10.1080/13557858.2015.1065310

Keles, S., Friborg, O., Idsøe, T., Sirin, S., and Oppedal, B. (2018a). Resilience and acculturation among unaccompanied refugee minors. *Int. J. Behav. Dev.* 42, 52–63. doi: 10.1177/0165025416658136

Keles, S., Olseth, A. R., Idsøe, T., and Sørlie, M. A. (2018b). The longitudinal association between internalizing symptoms and academic achievement among immigrant and non-immigrant children in Norway. *Scand. J. Psychol.* 59, 392–406. doi: 10.1111/sjop.12454

Kroenke, K., and Spitzer, R. L. (2002). The PHQ-9: a new depression diagnostic and severity measure. *Psychiatric Ann.* 32, 509–515.

Kroenke, K., Spitzer, R. L., and Williams, J. B. W. (2001). The PHQ-9: validity of a brief depression severity measure. *J. General Int. Med.* 16, 606–613. doi: 10.1046/j.1525-1497.2001.016009606.x

Kroenke, K., Spitzer, R. L., Williams, J. B. W., and Löwe, B. (2010). The patient health questionnaire somatic, anxiety, and depressive symptom scales: a systematic review. *General Hospital Psychiatry* 32, 345–359. doi: 10.1016/j.genhosppsych.2010.03.006

Lamkaddem, M., Essink-Bot, M. L., Devillé, W., Gerritsen, A., and 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. *Eur. J. Public Health* 25, 917–922. doi: 10.1093/eurpub/ckv061

Leppin, A., Quast, H. H., and Sarason, I. G. (1986). Fragebogen zur sozialen Unterstützung (Kurzform) SSQ6-G. *Skalen zur Befindlichkeit und Persönlichkeit. Forschungsbericht* 5, 192–202.

Miller, K. E., and Rasmussen, A. (2017). The mental health of civilians displaced by armed conflict: an ecological model of refugee distress. *Epidemiol. Psychiatric Sci.* 26, 129–138. doi: 10.1017/S2045796016000172

Mitra, R., and Hodes, M. (2019). Prevention of psychological distress and promotion of resilience amongst unaccompanied refugee minors in resettlement countries. *Child Care Health Dev.* 45, 198–215. doi: 10.1111/cch.12640

Montgomery, E. (2010). Trauma and resilience in young refugees: a 9-year follow-up study. *Dev. Psychopathol.* 22, 477–489. doi: 10.1017/S0954579410000180

Montgomery, E., and Foldspang, A. (2007). Discrimination, mental problems and social adaptation in young refugees. *Eur. J. Public Health* 18, 156–161. doi: 10.1093/eurpub/ckm073

Müller, L. R. F., Gossmann, K., Hartmann, F., Büter, K. P., Rosner, R., and Unterhitzenberger, J. (2019). 1-year follow-up of the mental health and stress factors in asylum-seeking children and adolescents resettled in Germany. *BMC Public Health* 19:7263. doi: 10.1186/s12889-019-7263-6

Nielsen, S. S., Norredam, M., Christiansen, K. L., Obel, C., Hilden, J., and Krasnik, A. (2008). Mental health among children seeking asylum in denmark–the effect of length of stay and number of relocations: a cross-sectional study. *BMC Public Health* 8:293. doi: 10.1186/1471-2458-8-293

Norredam, M., Nellums, L., Nielsen, R. S., Byberg, S., and Petersen, J. H. (2018). Incidence of psychiatric disorders among accompanied and unaccompanied asylum-seeking children in denmark: a nation-wide register-based cohort study. *Eur. Child Adoles. Psychiatry* 27, 439–446. doi: 10.1007/s00787-018-1122-3

O'Higgins, A., Ott, E. M., and Shea, M. W. (2018). What is the impact of placement type on educational and health outcomes of unaccompanied refugee minors? A systematic review of the evidence. *Clin. Child Family Psychol. Rev.* 21, 354–365. doi: 10.1007/s10567-018-0256-7

Oppedal, B., and Idsoe, T. (2015). The role of social support in the acculturation and mental health of unaccompanied minor asylum seekers. *Scand. J. Psychol.* 56, 203–211. doi: 10.1111/sjop.12194

Popham, C. M., McEwen, F. S., Karam, E., Fayyad, J., Karam, G., Saab, D., et al. (2023). Predictors of psychological risk and resilience among syrian refugee children. *J. Child Psychol. Psychiatry Allied Dis.* 64, 91–99. doi: 10.1111/jcpp.13670

Reijneveld, S. A., Boer, J. B., Bean, T., and Korfker, D. G. (2005). Unaccompanied adolescents seeking asylum: poorer mental health under a restrictive reception. *J. Nervo/ Ment. Dis.* 193, 759–761. doi: 10.1097/01.nmd.0000185870.55678.82

Rosner, R., Sachser, C., Hornfeck, F., Kilian, R., Kindler, H., Muche, R., et al. (2020). Improving mental health care for unaccompanied young refugees through a stepped-care approach versus usual care+: Study protocol of a cluster randomized controlled hybrid effectiveness implementation trial. *Trials* 21:1013. doi: 10.1186/s13063-020-04922-x

Sachser, C., Berliner, L., Risch, E., Rosner, R., Birkeland, M. S., Eilers, R., et al. (2022). The child and adolescent trauma screen 2 (CATS-2) - validation of an instrument to measure DSM-5 and ICD-11 PTSD and complex PTSD in children and adolescents. *Eur. J. Psychotraumatol.* 13:2105580. doi: 10.1080/20008066.2022.2105580

Scharpf, F., Kaltenbach, E., Nickerson, A., and Hecker, T. (2021). A systematic review of socio-ecological factors contributing to risk and protection of the mental health of refugee children and adolescents. *Clin. Psychol. Rev.* 83:101930. doi: 10.1016/j.cpr.2020.101930

Seglem, K. B., Oppedal, B., and Raeder, S. (2011). Predictors of depressive symptoms among resettled unaccompanied refugee minors. *Scand. J. Psychol.* 52, 457–464. doi: 10.1111/j.1467-9450.2011.00883.x

Sierau, S., Schneider, E., Nesterko, Y., and Glaesmer, H. (2018). Alone, but protected? Effects of social support on mental health of unaccompanied refugee minors. *Eur. Child Adoles. Psychiatry* 28, 769–780. doi: 10.1007/s00787-018-1246-5

Sierau, S., Schneider, E., Nesterko, Y., Klitzing, K., and Glaesmer, H. (2019). Psychische belastung bei unbegleiteten jungen geflüchteten in Jugendhilfeeinrichtungen [mental health problems of unaccompanied young refugees in youth welfare institutions]. *Psychiatrische Praxis* 46, 135–140. doi: 10.1055/a-0756-7970

Sirin, S. R., Gupta, T., Ryce, P., Katsiaficas, D., Suárez-Orozco, C., and Rogers-Sirin, L. (2013). Understanding the role of social support in trajectories of mental health symptoms for immigrant adolescents. *J. Appl. Dev. Psychol.* 34, 199–207. doi: 10.1016/j.appdev.2013.04.004

Spitzer, R. L., Kroenke, K., Williams, J. B. W., and Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch. Int. Med.* 166, 1092–1097. doi: 10.1001/archinte.166.10.1092

UNHCR (1997). *Guidelines on policies and procedures in dealing with unaccompanied children seeking asylum*. Geneva: UN/UNHCR.

Unterhitzenberger, J., Wintersohl, S., Lang, M., König, J., and Rosner, R. (2019). Providing manualized individual trauma-focused CBT to unaccompanied refugee minors with uncertain residence status: a pilot study. *Child Adoles. Psychiatry Mental Health* 13, 1–10. doi: 10.1186/s13034-019-0282-3

Verelst, S. C., Pfeiffer, E., Devlieger, I., Kankaapää, R., Peltonen, K., Vänskä, M., et al. (2022). Social determinants of the mental health of young migrants. *Eur. J. Health Psychol.* 29, 61–73. doi: 10.1027/2512-8442/a000097

Vervliet, M., Lammertyn, J., Broekaert, E., and Derluyn, I. (2014). Longitudinal follow-up of the mental health of unaccompanied refugee minors. *Eur. Child Adoles. Psychiatry* 23, 337–346. doi: 10.1007/s00787-013-0463-1

Vindevogel, S., and Verelst, S. (2020). "Correction to: supporting mental health in young refugees: a resilience perspective," in *Springer eBook collection. child, adolescent and family refugee mental health: a global perspective*, eds S. J. Song and P. Ventevogel (Springer International Publishing), doi: 10.1007/978-3-030-45278-0_17

Witt, A., Rassenhofer, M., Fegert, J. M., and Plener, P. L. (2015). Hilfebedarf und hilfsangebote in der versorgung von unbegleiteten minderjährigen flüchtlingen: eine systematische übersicht. *Kind. Entwick.* 24, 209–224. doi: 10.1026/0942-5403/a000177

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EDITED BY
Ilse Derluyn,
Ghent University, Belgium

REVIEWED BY
Heide Glaesmer,
University Hospital Leipzig, Germany
Muhammad Sohail Ahmad,
University of Education Lahore, Pakistan

*CORRESPONDENCE
Monja Lucia Herold
✉ monja.herold@ku.de

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Development and evaluation of a training program for interpreters in the field of trauma-focused cognitive behavioral therapy

Lauritz Rudolf Floribert Müller[1], Monja Lucia Herold[1]*, Johanna Unterhitzenberger[2] and Rita Rosner[1]

[1]Department of Psychology, Catholic University of Eichstätt-Ingolstadt, Eichstätt, Germany, [2]Department of Child and Adolescent Psychiatry, Centre for Children and Adolescents Inn-Salzach e.V., Altoetting, Germany

Background: The treatment of traumatized refugee minors is often challenging because of language barriers. International guidelines, therefore, recommend the use of language mediators. However, there is a scarcity of evaluated training programs that prepare language mediators to translate during psychotherapy developed specifically for this patient group, for instance trauma-focused cognitive behavioral therapy (TF-CBT).

Methods: Based on an extensive literature review and in collaboration with an expert focus group, a one-day TF-CBT-specific online training program was developed for language mediators willing to work with minor refugees, and delivered on nine occasions between November 2020 and June 2021. The participants answered pre- and post-training questions about trauma- and TF-CBT-related knowledge and attitudes relevant to therapy, as well as the perceived usefulness of the training. Bayesian estimation was used to determine pre-post changes.

Results: A total of 129 participants speaking 35 different languages participated in the training program. Analyses revealed 95% highest density intervals not containing the null with respect to knowledge gain (effect size median 0.28) and change in treatment-appropriate attitudes (effect size median 0.31). The participants rated the training as useful.

Conclusion: The TF-CBT-specific training course was successfully carried out. It was likely to disseminate both knowledge gains and a shift toward more treatment-appropriate attitudes. It was perceived as useful by the participants. Given the scarcity of evaluated training programs for language mediators working with minor refugees, the results are promising. The limitations include the lack of both a control group and the verification of the results using an external outcome measure.

KEYWORDS

Interpreter, language mediator, mental health, refugee, PTSD, children and adolescents, online training

Abbreviations: PTSD, post-traumatic stress disorder; TF-CBT, trauma-focused cognitive behavioral therapy; HDI, highest density interval; BEST, Bayesian estimation (according to Kruschke, 2013); MCMC, Marcov chain Monte Carlo; IPAP, interpreters' perceptions and attitudes in psychotherapy scale.

Introduction

Many minor and young refugees have been registered in the German youth welfare system due to the increased intake of refugees in Germany since 2014 (BAMF – Bundesamt für Migration und Flüchtlinge, 2020). Although the number of refugees has since decreased, 31,184 young unaccompanied refugees were still being cared for in child and youth welfare services across Germany in November 2019 (Karpernstein and Nordheim, 2019). Minor refugees very often suffer from traumatic experiences (Müller et al., 2019) and are, therefore, at high risk of developing post-traumatic stress disorder (PTSD) (Reavell and Fazil, 2017; Kien et al., 2019). To treat this mental disorder, the National Institute for Health and Care Excellence (National Institute for Health and Care Excellence, 2021) recommends trauma-focused cognitive behavioral therapy (TF-CBT) (Cohen et al., 2017). This form of psychotherapy has already produced promising initial results in the treatment of minor refugees (Unterhitzenberger et al., 2019).

As the German language skills of minor refugees are often insufficient to undergo therapy, the assistance of interpreters is recommended. Most existing research that examined the effectiveness of interpreter-assisted therapy, did not identify any differences between standard therapy with and without an interpreter (Ardenne et al., 2007; Brune et al., 2011; Lambert and Alhassoon, 2015). On the other hand, Sander et al. (2019) found significantly worse outcomes for psychotherapy when interpreters were included. Various qualitative studies that point out the challenges that therapists and interpreters face in triadic settings may provide some explanations for possibly poorer therapy outcomes when interpreters are present (Miller et al., 2005; Morina et al., 2010; Gartley and Due, 2017; Kießl et al., 2017; Hanft-Robert et al., 2018; Geiling et al., 2021). Ratcliff and Suardi (2006) and Ratcliff and Pereira (2019) showed that therapists' and interpreters' expectations regarding the role of the interpreter may diverge which makes the relationship susceptible to rivalries, role confusion, partiality, and dissatisfaction (Morina et al., 2010). Thus, a clear distribution of tasks with transparent role clarification is important when it comes to mastering these challenges. The therapist should take responsibility for leading the conversation and the interpreter should facilitate the conversation between the patient and the therapist (Miller et al., 2005; Morina et al., 2010; Kießl et al., 2017; Hanft-Robert et al., 2018). In addition to role clarification at the beginning of psychotherapy, this should be supported by verbatim translations in the first person (Morina et al., 2010; Kießl et al., 2017; Hanft-Robert et al., 2018). Nevertheless, the role of the interpreter should not be seen merely as a mechanical language mediator (Schouler-Ocak and Aichberger, 2017). The person responsible for the translation influences the conversation by their presence and this person must be able to adopt a therapeutic, non-judgmental, and empathic attitude, and to maintain confidentiality (Miller et al., 2005; Gartley and Due, 2017). Therefore, the interpreter needs to have a basic understanding of the therapeutic approach in order to be able to produce qualified translation in psychotherapy settings (Miller et al., 2005; Bauer and Alegría, 2010; Butow et al., 2012; Becher and Wieling, 2015; Kießl et al., 2017; Hanft-Robert et al., 2018; Fennig and Denov, 2021; Villalobos et al., 2021).

Interpreting in child mental health settings is even more challenging as the interpreter has to cope with child development, appropriate verbal and non-verbal language for minors, and settings including the parents (Rousseau et al., 2011). The systematic review by van Os et al. (2020) stresses the importance of well-trained interpreters, especially for this setting. This has also been stated repeatedly by various other authors (Paone and Malott, 2008; Cecchet and Calabrese, 2011; Searight and Armock, 2013; Hunt and Swartz, 2017). Untrained interpreters may not be able to meet ethical standards, and this can prove harmful for traumatized individuals who have already survived situations of betrayal and disloyalty (Crezee et al., 2013), particularly in the case of minors. The evaluation of training courses developed specifically for interpreters working with minors undergoing therapy and the implementation of training courses in practice are thus crucial to ensuring the effectiveness of this type of psychotherapy (Paone and Malott, 2008; Rousseau et al., 2011).

As only a limited number of certified interpreters are available for many of the languages needed for the psychosocial work with minor refugees in Germany, lay interpreters often take on this task (Hanft-Robert et al., 2018). Both inside and outside Germany, a broad spectrum of training courses is available that prepare interpreters for work as language and cultural mediators or community interpreters, mostly in adult settings. Some of these training programs address aspects of translating in psychotherapy (Schouler-Ocak and Aichberger, 2017; Herold, 2019). However, none of the training programs known to the authors that had been specifically designed for work in psychotherapy, has been evaluated scientifically up to now. In contrast, there are some examples of evaluations of interpreter training programs in other disciplines that follow different approaches (Hasbún Avalos et al., 2013; Federici and Cadwell, 2018; Hale et al., 2019). However, none of these evaluations used pre- and post-tests to systematically measure changes.

Some training programs developed for therapists focusing on TF-CBT for the treatment of PTSD have been evaluated in terms of knowledge gain (Murray, 2017) or attitude change (Sansen et al., 2019) using pre- and post-tests. Murray (2017) based his evaluation on the Kirkpatrick's "Four Levels of Evaluation" (Kirkpatrick, 1975). This is an established theoretical approach in medical education (Yardley and Dornan, 2012). The extensive evaluation is based on four levels comprising (1) a positive "reaction" by the participants, (2) "learning" measured as an actual knowledge gain, (3) "behavior" change in the specific setting which should lead to (4) the desired outcome "results" (Kirkpatrick, 1975; Alliger and Janak, 1989; Kirkpatrick and Kirkpatrick, 2010). Yardley and Dornan (2012) rightly point out the importance of evaluating the last two levels. However, due to the lack of empirical findings on interpreter trainings in the psychotherapeutic field, exploratory evaluations centered on the first two levels are still helpful as they already provide some initial indication of the effectiveness of a training program.

Theories about attitudes and attitude changes state that cognitive capacities and motivation are required to process new information (Petty and Cacioppo, 1986; Chaiken and Maheswaran, 1994; Dillard and Pfau, 2002; Kruglanski et al., 2006; Bohner and Dickel, 2011; van Lange et al., 2011). Participants who already had experience as interpreters in a psychotherapy setting may have more previous knowledge and motivation, and may, therefore,

be in a position to process the information better. On the other hand, regarding workshop participants, those participants with prior experience as interpreters in a therapy setting may have developed complex attitudes and knowledge about therapy. In the case of an inappropriate attitude, they would have to accept that their unhelpful attitudes were invalid. This is more difficult than forming a new opinion (Bohner and Dickel, 2011).

This study addressed the need for systematically evaluated training programs for interpreters in mental health care services for minor refugees. An online training program for interpreters, who are to translate for minor refugees in the context of TF-CBT in line with the manual by Cohen et al. (2017), was evaluated using pre- and post-tests. Based on the four levels of evaluation (Kirkpatrick, 1975; Kirkpatrick and Kirkpatrick, 2010), the current state of research described above, and clinical experience in the field (Unterhitzenberger et al., 2015, 2019), the study raised the following explorative research questions: Is the interpreter training rated positively by the participants in terms of perceived acceptance and usefulness? Is there a knowledge gain and a shift toward an attitude that is more helpful for therapy over the course of the workshop? In addition, the present study looked at the impact of knowledge gain about TF-CBT, previous experience as an interpreter in general, and prior experience as an interpreter in psychotherapy on changes in attitude.

Materials and methods

The workshop

This one-day training program was developed within the framework of the collaborative project "BETTER CARE" (Rosner et al., 2020). It drew on clinical experience in the field and existing best practice approaches (Tribe and Morrissey, 2004; Hanft-Robert et al., 2018), and was piloted by a focus group in November 2019. As an addition, accompanying workshops for therapists were conducted within the scope of BETTER CARE that addressed important considerations when working with interpreters to improve collaboration.

The training sessions were conducted once a month from November 2020 to June 2021 via Zoom video conferencing. In total, there were nine four-hour workshops. The workshops were held on Friday afternoons, apart from two workshops on Monday afternoons. Each workshop was attended by $M = 14.33$ participants ($SD = 2.05$, range 10–17).

The TF-CBT-specific (Cohen et al., 2017) workshop had the following thematic contents: (1) Background information on trauma and PTSD including flight-specific stressors and diagnostics with children and adolescents. (2) A framework for good cooperation and translation in therapy including verbatim translation, non-omission of praise and repetitions in the translation process so as to show comprehension, and translating in the first person singular. In addition, the opportunities to address misunderstandings by talking to the therapist in pre- and post-session (de-)briefings, were explained. Other important issues involved maintaining neutrality (for example, by avoiding private contact with the patient), methods to cope with personal distress, and best-practice seating arrangements. (3) Description of the TF-CBT modules (Cohen et al., 2017). In addition to knowledge transfer through lectures, psychotherapy videos were used to illustrate the therapy modules. (4) Training where the participants had an opportunity to apply their acquired knowledge to case vignettes and exercises. The workshop ended with a discussion in which open questions and further steps in the project could be discussed. Both psychotherapy videos and case vignettes were retrieved from the TF-CBT online learning platform (https://tfkvt.ku.de/) which was developed for German therapists with added sections about culturally sensitive considerations during psychotherapy.

Recruitment and procedure

The interpreters were recruited through institutions in southern Germany working with community interpreters, contact lists of youth welfare institutions participating in the "BETTER CARE" project and advertisement via Facebook. The workshop was free of charge and the participants in the attached pre- and post-surveys were given a voucher worth 20 EUR. The pre-test was concluded on average 7.65 days ($SD = 4.09$, range 0–16) prior to the workshop and the post-test was completed on average 3.21 days ($SD = 4.08$, range 0–21) after the workshop. To increase completion rates, the participants received two reminder emails and two phone calls if they had not responded to the survey within a week. There were $n = 141$ registrations for the workshop, and $n = 129$ participants actually attended the training course (see **Figure 1**). A total of $n = 105$ participants completed both the pre- and the post-tests. Datasets were deemed to be complete when they had less than two unanswered items for $n = 102$ participants with regard to the TF-CBT knowledge test and for $n = 101$ with regard to the attitude questionnaire after the workshop had taken place.

Participants

Table 1 gives the sociodemographic characteristics of the participants. All participants were fluent in German and in at least one other language, and worked as community interpreters. Forty-four (36.07%) males, 70 (57.38%) females and 2 (1.64%) people who gave "diverse" as their gender, participated in the workshop. On average, the participants were 44 years of age ($M = 43.9$, $SD = 13.6$, range 19–87) and had been living in Germany for 19 years ($M = 19.4$, $SD = 13.2$, range 2–56). Twelve (9.84%) of the participants had no professional degree, 36 (29.51%) an apprenticeship certificate, 32 (26.23%) a bachelor's degree, 27 (22.13%) a master's degree, 5 (4.10%) a doctorate, and 10 (8.20%) indicated "other". The group of participants was also very heterogeneous in terms of their religious background [Muslim, $n = 64$ (52.46%), Christian, $n = 23$ (18.85%), non-religious/atheist/agnostic, $n = 19$ (15.57%); Jews, $n = 2$ (1.64%); Hindu, $n = 1$ (0.82%), Yazidi, $n = 1$ (0.82%), other religious background, $n = 12$ (9.84%)].

Regarding the participants' experience as interpreters, 40 (32.79%) interpreters stated that they had some form of qualification including attendance of a range of short workshops similar to the present workshop as well as certified diplomas.

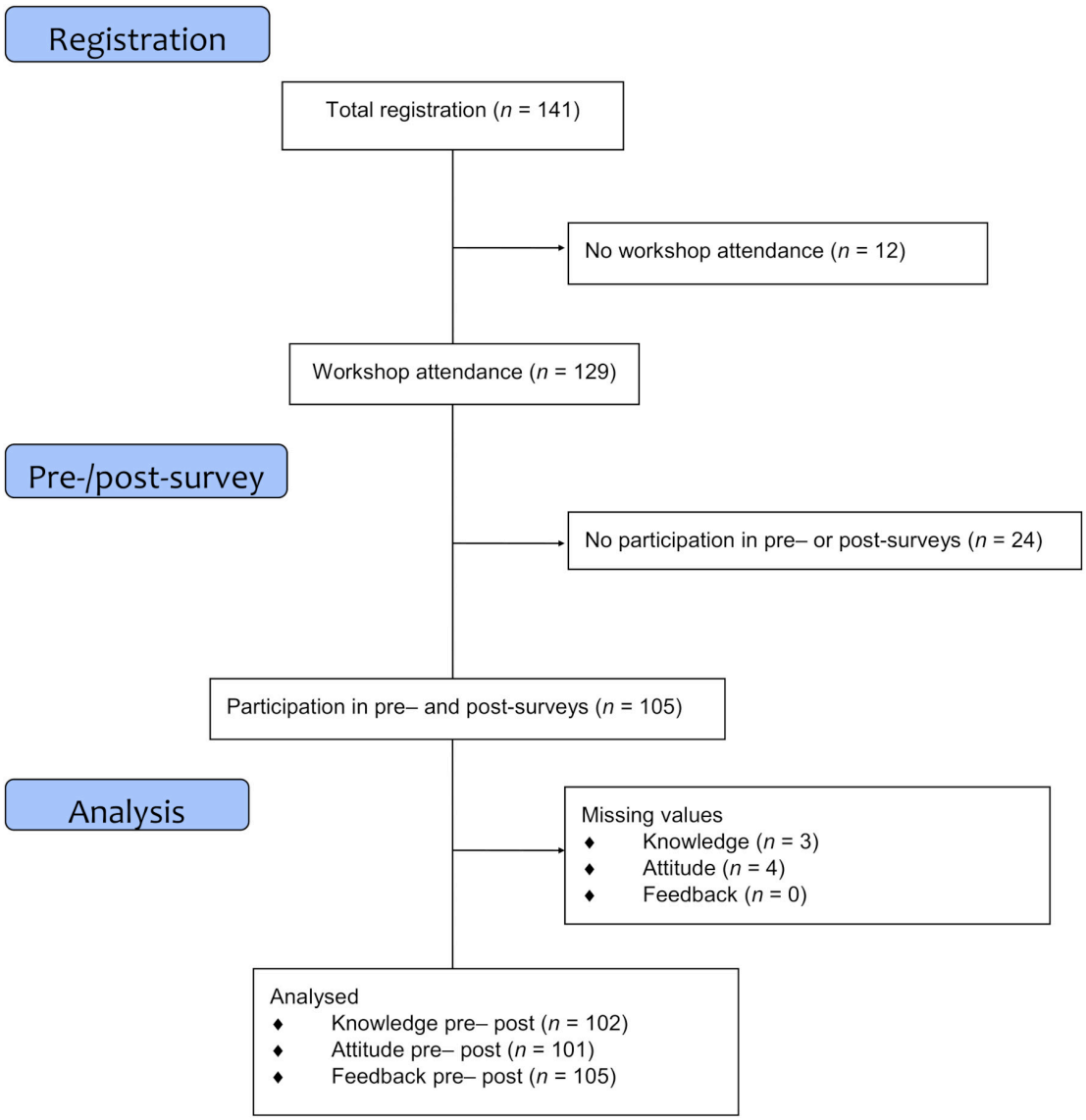

FIGURE 1
Flow chart of the recruitment process.

In contrast, 82 (67.21%) participants did not report having any qualifications as an interpreter at all. On average, the participants had been working as interpreters for 6 years (M = 6.32, SD = 6.54, range 0–30). The most frequently mentioned fields of activity in which the interpreters were already actively involved, were migration and asylum counseling (n = 74, 60.65%). Furthermore, the interpreters already had experience working with the youth welfare services (n = 58, 47.54%), other health care services (n = 56, 45.90%), and psychosocial services (n = 45, 36.89%). Less frequent mention was made of the Federal Office for Migration and Refugees (n = 22, 18.03%), courts (n = 21, 17.21%), translation offices (n = 18, 14.75%), and working as a community interpreter (n = 17, 13.93%). Multiple answers were possible for the question about fields of activity.

In total, the interpreters who participated in the workshops covered 35 languages including the languages spoken the most frequently by young refugees (see Table 1). The 3 most common languages were Arabic (n = 44, 36.07%), Dari (n = 21, 17.21%), and French (n = 17, 13.93%).

Measures

The pre- and post-tests were conducted online using the Qualtrics feedback software (Qualtrics, 2005). Participants were sent the link to the pre-survey one week prior to the training. The link to the post-survey was sent directly after the training program. Participants were asked to complete the post-survey within two weeks of attending the workshop.

Sociodemographic survey

The sociodemographic questionnaire consisted of 16 items pertaining to sociodemographic data such as age, origin, religion, profession and education, training as an interpreter, fields

TABLE 1 Sociodemographic characteristics of the participants (n = 122) in the pre-tests.

Age in years, *M* (*SD*)	43.9 (13.6)
Gender, *n* (%)	
Male	43 (36.07)
Female	77 (75.38)
Diverse	2 (1.64)
Languages, *n* (%)	
Arabic	44 (36.07)
Dari	21 (17.21)
French	17 (13.93)
Farsi	15 (12.30)
English	14 (11.48)
Kurdish	14 (11.48)
Turkish	12 (9.84)
Other*	62 (50.82)
Religion, *n* (%)	
Muslim	64 (52.64)
Christian	23 (18.85)
Non-religious/atheist/agnostic	19 (15.57)
Jew	2 (1.64)
Hindu	1 (0.82)
Yazidi	1 (0.82)
Other religious background	12 (9.84)
Time working as an interpreter in years, *M (SD)*	6.32 (6.54)
Length of stay in Germany in years, *M* (*SD*)	19.4 (13.20)
Professional degree, *n* (%)	
No professional degree	12 (9.84)
Apprenticeship	36 (29.51)
Bachelor's degree	32 (26.23)
Master's degree	27 (22.13)
Doctorate	5 (4.10)
Other	10 (8.20)
Qualification or training as an interpreter, *n* (%)	40 (32.79)
Current field of activity as an interpreter, *n* (%)	
Migration and asylum counseling	74 (60.65)
Youth welfare services	58 (47.54)
Other health care services	56 (45.90)
Psychosocial services	45 (36.89)
Federal Office for migration and refugees	22 (18.03)
Court	21(17.21)
Translation office	18 (14.75)
Community interpreter	17 (13.93)

*Pashto, Russian, Tigrinya, Sorani, Spanish, Amharic, Somali, Italian, Hindi, Croatian, Mandinka, Portuguese, Vietnamese, Armenian, Bulgarian, Chinese, Greek, Oromiffa, Polish, Slovak, Tajik, Tamil, Telugu, Czech, Chechen, Hungarian, Urdu, Wolof.

of activity and interpreting languages as well as levels of language skills. The items contained open-ended questions and predetermined response options.

Training evaluation

To examine participant satisfaction with and the perceived usefulness of the workshop, they completed a questionnaire with 13 items using a five-point Likert scale, ranging from 1 "do not agree at all" to 5 "agree absolutely". The first eight questions focused on perceived knowledge gain about the therapy and understanding of both the patient's and therapist's needs. Furthermore, the first part examined whether the information was helpful for working as an interpreter in psychotherapy in general and in trauma therapy in particular and whether the subject matter was adequate. The following five items included questions about satisfaction with the workshop and perceived appreciation. The survey concluded with an open question that provided an opportunity for further comments. Internal consistency of the total scale was good (ω = 0.96).

Psychotherapy perceptions and experiences

Given the lack of established quantitative measures in the field, the psychotherapy perceptions and experiences questionnaire, comprising 15 items, was developed on the basis of the existing literature (Downing and Helms, 1992; Tribe and Morrissey, 2004; Miller et al., 2005; Morina et al., 2010; Gartley and Due, 2017; Hunt and Swartz, 2017) and a consensual expert focus group. The first five questions were part of the pre-survey only. They explored experiences in the field of psychotherapy and trauma therapy. The next two items dealt with the translation of cultural aspects and contained one question in a multiple-choice format and one open question. One subscale of the questionnaire, the Interpreters' Perceptions and Attitudes in Psychotherapy Scale (IPAP) was relevant for this study. It comprised eight items that measured attitudes toward trauma therapy on a five-point Likert scale ranging from (1) "do not agree at all" to (5) "agree absolutely". This subscale focused on attitudes toward subjects such as working with the therapist as a team, ensuring clear role division, and verbatim translation during therapy. After inverting the negatively poled items, the sum score ranged from 8 to 30, with higher scores indicating attitudes more helpful for therapy. The internal consistency of the scale was rather low (ω = 0.66).

Adapted TF-CBT test

The adapted TF-CBT test (Heck et al., 2015) measured knowledge about PTSD and TF-CBT. It was used to measure knowledge gain over the course of the workshop. The original TF-CBT test for therapists consisted of 40 items (Heck et al., 2015). In this study, we adapted the original version and interpreters answered eight questions relevant to the work of interpreters in TF-CBT before and after the workshop. This modified single choice test contained four items that tested knowledge about the symptoms and causes of PTSD and its diagnosis as well as four items focusing on empirical evidence, duration, and the main concepts of TF-CBT (ω = 0.61).

Data analysis

Participant satisfaction and perceived acceptance were analyzed descriptively using a histogram, and by running a mean and

variance value calculation of the feedback given by the participants. When less than two items in a questionnaire were unanswered, those individual items were calculated using the method "pre for post" or "post for pre" so as to obtain conservative data imputation in all questionnaires. For the calculation of internal consistency of the measures in use, we employed the R package "PSYCH" which allows calculating McDonald's omega total.

To analyze the data, we relied on the theoretical background of Bayesian estimation according to Kruschke (2011, 2013, 2021). This method has the advantage of permitting statements about probability distributions of the parameter, and not only about the point estimates used in frequentist statistics. Thus, the decision criterion is intuitive and gives information about the uncertainty of the parameter estimations. The highest density interval (HDI) has a similar function to the confidence interval in frequentist statistics. It is defined as the 95% highest density of the posterior distribution. The null hypothesis is rejected if the HDI does not contain the null. Even if the 95% is as randomly chosen as the *p*-value in frequentist statistics, the HDI can be interpreted much more easily, and provides more information. A wide HDI range means a high degree of uncertainty, an indication that the range of credible parameters is wide. A small HDI, on the other hand, indicates a low level of uncertainty, ensuring trust in the credible parameters. Even in this simple procedure of comparing pre- and post-knowledge and attitudes, the Bayesian method furnishes far more information than a simple *t*-test. In addition, statements can be made about mean differences, standard deviations, and effect sizes in one test. Consequently, the estimations are more precise (Kruschke, 2011; McElreath, 2016; Tschirk, 2019). In general, Bayesian statistics, therefore, includes frequentist approaches but also shows how the data would look after resampling as well (McElreath, 2016).

To calculate changes in attitude and knowledge gain, the "BEST" packages as described by Kruschke (2013) in R Core Team (2020) with RStudio Team (2020) were used. While the traditional *t*-test uses normal distribution to describe the data, BEST represents the data by using a larger tailed *t*-distribution (Kruschke, 2013). It includes outliers as well as the densest area of the data. Since there is little reliable data in this field, the vague prior default in the package was not changed. The model is, therefore, dominated by the data and prior knowledge has little impact (Bååth, 2014; Kruschke, 2015). A Marcov Chain Monte Carlo (MCMC) algorithm was used to calculate credible parameter values given the data. MCMC uses the heap of the product of the prior and likelihood function to estimate representative values of parameters and calculate the posterior distribution by generating random samples of those values. Thus, it enables estimations of group differences without relying on mean and standard deviation, by only using representative values of the sample. The algorithm moves through the representative values choosing the next data point, with equal probability, of all adjacent data points. If the value of the chosen adjacent data point is larger than the present one, the algorithm shifts. If it is smaller, the algorithm shifts with the probability of the relation of the chosen adjacent data point's value to the present data point's value. By moving through the heap, the algorithm creates the density of credible parameter values of the sample (Kruschke, 2011, 2013, 2015; McElreath, 2016). This procedure enables "BEST" to calculate, for paired samples, the posterior distribution of the paired mean difference, the effect size, and the standard deviation of the paired difference in one test.

To examine the impact of experience as an interpreter and knowledge gain on changes in attitude, the R scripts of Kruschke (2021) "Jags-Ymet-XmetMulti-Mrobust.R" sourced from Jags-Ymet-XmetMulti-Mrobust-Example.R were used. In these scripts, the MCMC was calculated using the JAGS software program after standardization of the data. This script included generating a correlation matrix and visualization of the data. The vague prior in the scripts and the burn in period of 100 of the MCMC were left unchanged. The Breusch-Pagan Test was used to verify the assumed homogeneity of variance.

Results

Feedback, knowledge, and attitude change

Figure 2 gives the participants' average rating of the feedback on perceived usefulness and acceptance of the workshop ($M = 4.45$, $SD = 0.64$).

A total of $n = 102$ participants completed the adapted TF-CBT knowledge test in both the pre- and post-surveys. **Figure 3** gives the posterior distribution of the mean differences in the pre- and post-survey, the effect size, the standard deviation of differences, and the posterior predictive check. The MCMC used by "BEST" (Kruschke, 2013) calculated a knowledge gain over the course of the workshop with a mean difference of 0.998, as shown in the upper left graphic (credible interval 0.65–1.35). The posterior distribution of the effect size yielded a median of 0.28 and a HDI of between 0.083 and 0.49. The posterior predictive check, representing the possible probability functions as presented in the lower right graphic, showed a model fit that represented the slightly skewed data relatively well. In sum, the Bayesian estimation indicated a mean difference of more than 0 with a probability of > 99.6%.

A total of $n = 101$ participants completed the IPAP in both the pre- and the post-surveys. The MCMC simulation with "BEST" revealed a median of the mean paired difference of 1.57 with a HDI of between 0.74 and 2.4 (see **Figure 4**). The effect size resulted in a median of 0.31 and a credible interval between 0.08 and 0.56. The posterior predictive check, representing the possible probability functions as shown in the lower right graphic, pointed to a good model fit. In sum, the Bayesian estimation indicated a mean difference of more than 0 with a probability of 99.5%.

Predictors of attitude change

Figure 5 gives the posterior distribution and HDI of the intercept as well as the posterior distribution and HDI of the slope values of the regression coefficients that generate the regression function. Critical values for the intercept (mode = 3.21, HDI = 1.84–4.75), attitude change conditioned by experience (mode = −0.12, HDI = −0.24 to −0.006), experience in psychotherapy (mode = −1.52, HDI = −3.00 to 0.18), and

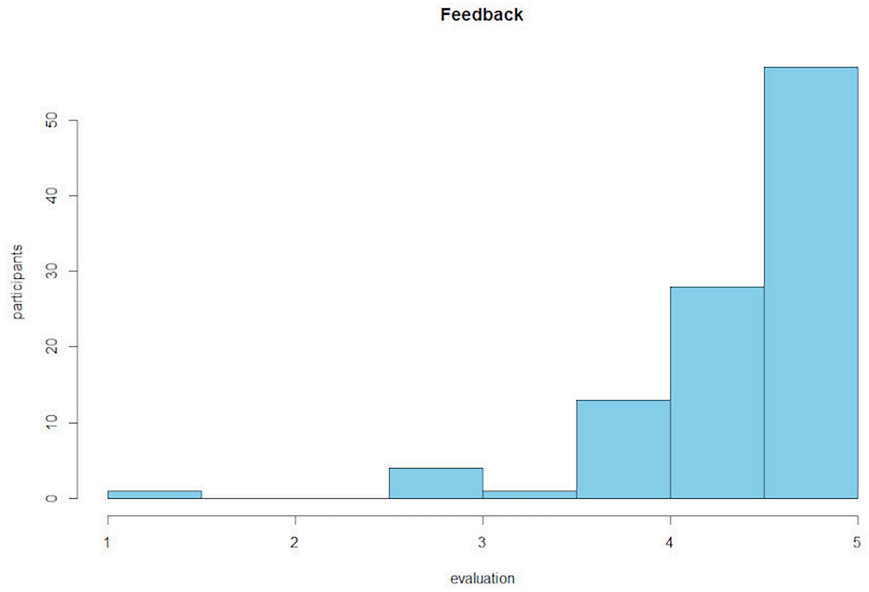

FIGURE 2
Histogram of participants' average rating of the training evaluation questionnaire.

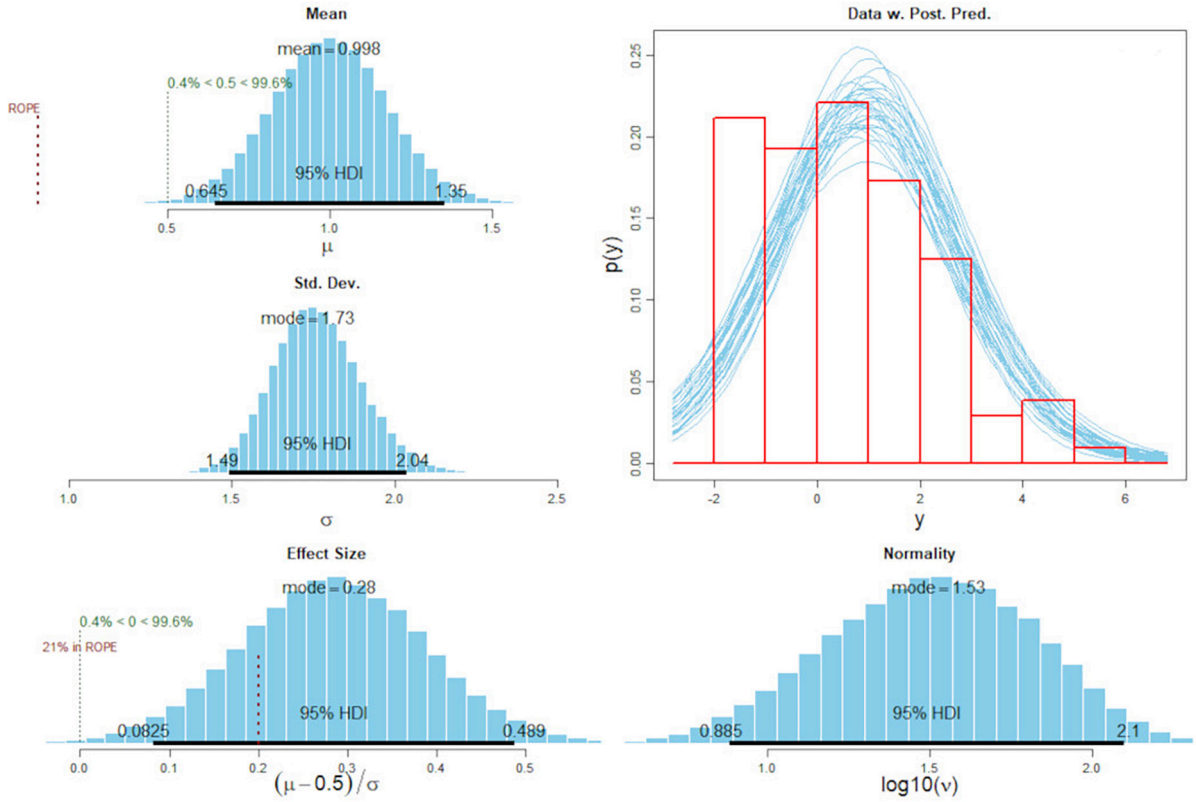

FIGURE 3
Posterior distribution of mean difference and effect size of right answers in the adapted TF-CBT test pre- and post-surveys. Standard deviation of differences, normality, and post predictive check.

knowledge gain (mode = −0.27, HDI = −0.72 to 0.14) were estimated. The posterior distribution of the slope value of experience in psychotherapy and knowledge gain included the null but suggested a negative trend. However, the HDI of the slope value of the impact of experience as an interpreter in years on changes in attitude change did not include the null, indicating a negative impact of professional experience on attitude change. The proportion of variance accounted for by the model, the equivalent

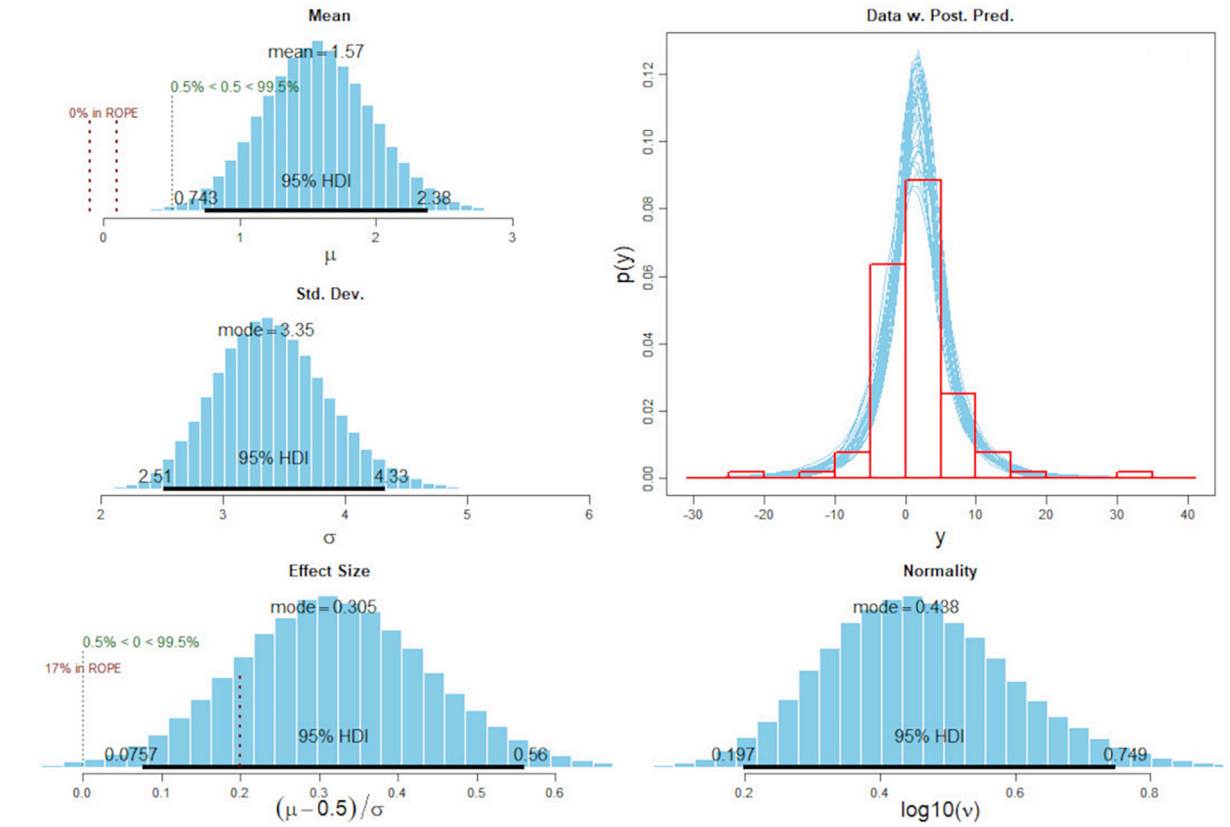

FIGURE 4
Posterior distribution of mean difference and effect size of the IPAP pre- and post-survey sum scores. Standard deviation of differences, normality, and post-predictive check.

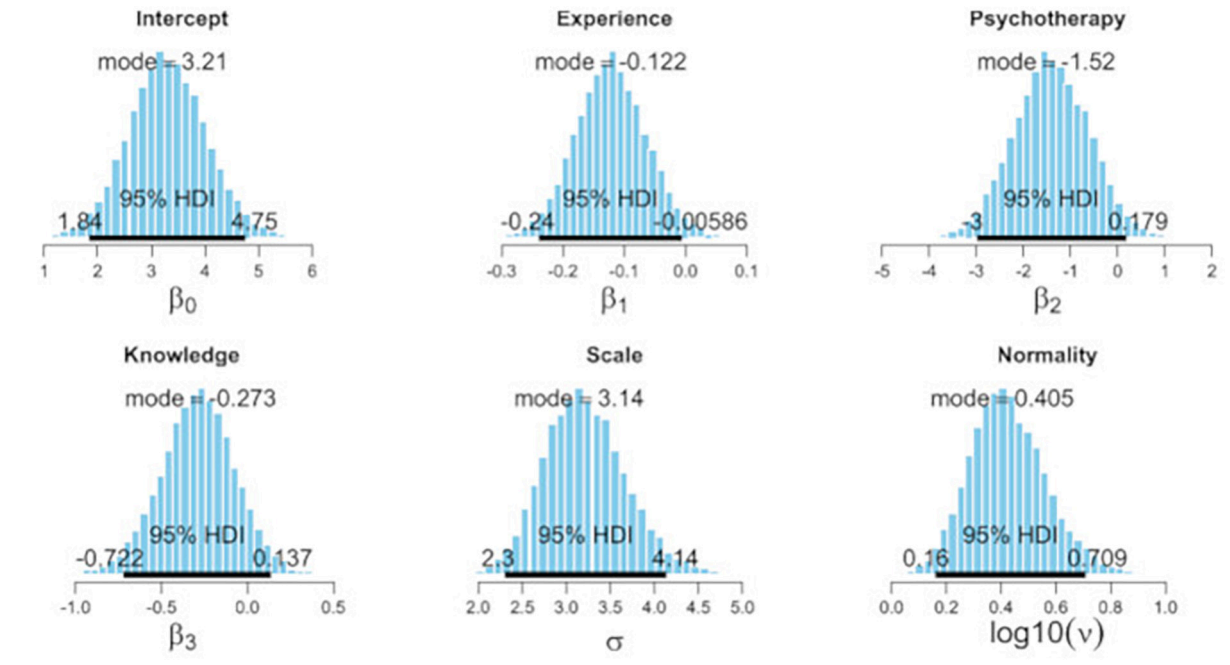

FIGURE 5
Highest density interval (HDI) of regression coefficients: experience in years, experience in psychotherapy, and knowledge gain.

to R^2 in traditional least square multiple regression, indicated mode = 0.053, HDI = 0.01–0.09.

Discussion

In this study we reported on the evaluation of a TF-CBT-specific workshop for interpreters working in mental health care for minor refugees. To the authors' knowledge, it was the first quantitative evaluation of an interpreter training program specific to collaboration in psychotherapy. It, therefore, constitutes pioneer work in the field of mental health care for children and adolescents. The demographical background of the participants was very heterogeneous in terms of age, experience, and professional qualifications. Although 80% of the participants had at least completed an apprenticeship or reported higher levels of education, two-thirds of the interpreters working mostly in the fields of migration and asylum counseling, youth welfare services, health care or psychosocial services in Germany, did not report having any qualifications as interpreters in this professional area. Various risk factors come into play when employing untrained interpreters (Paone and Malott, 2008; Crezee et al., 2013). Interpreting for minors requires especially skillful and high-quality translation (Raval, 2003; Rousseau et al., 2011). This re-emphasizes the importance of scientifically evaluated workshops and training programs for interpreters to ensure access to and dissemination of evidence-based therapies. This has been pointed out by a variety of authors (Cecchet and Calabrese, 2011; Searight and Armock, 2013; Hunt and Swartz, 2017; van Os et al., 2020). Given the paucity of these evaluated training programs, the results of this study on a TF-CBT-specific workshop are promising.

Despite the heterogeneity of the participants, the results of this study indicated that there had been an increase in trauma- and TF-CBT-related knowledge and attitudes considered beneficial for working as an interpreter in psychotherapy over the course of the workshop (Paone and Malott, 2008). The knowledge gain was around one point (with a rather low effect size) indicating that, on average, the participants answered one more question correctly after the workshop than in the pre-workshop test. As there were only eight questions and the knowledge level was already high before the workshop, this knowledge gain can be deemed a success. Interpreters working in a psychotherapy setting are more than a mere mechanical medium for translation and are, as persons, an integral part of the procedure (Schouler-Ocak and Aichberger, 2017), especially when working with minors. They, therefore, need to grasp the basic concepts of TF-CBT methods and the special characteristics of the clinical picture of PTSD (Cecchet and Calabrese, 2011). Even assuming there is clear role clarification, it might be much easier for trained interpreters to translate repetitions, praise and every word of the patient, if they are aware of the importance of these aspects for successfully delivering TF-CBT (Paone and Malott, 2008; Butow et al., 2012). The knowledge gain at the workshop may, therefore, lead to improved teamwork between the therapist and the interpreter as both have a similar understanding of psychotherapy and know how TF-CBT works.

In terms of attitude change, an increase in attitudes beneficial to psychotherapy was observed with a high degree of probability. As the distribution of attitudes beneficial to therapy was already skewed toward high levels of attitudes beneficial to therapy at the time of pre-testing, ceiling effects were possible (Döring and Bortz, 2016). Given the short duration of four hours and the simple and economic didactic structure of the workshop, the results are highly encouraging. This workshop, therefore, took up the challenges described by various authors working in psychotherapy with interpreters (Miller et al., 2005; Morina et al., 2010; Gartley and Due, 2017; Kießl et al., 2017; Hanft-Robert et al., 2018) by addressing problems such as role confusion (Morina et al., 2010) and different translating norms (Morina et al., 2010; Kießl et al., 2017; Hanft-Robert et al., 2018), and by discussing them with the interpreters. Consequently, the expectations of the interpreter's role developed in the workshop provided interpreters with clear guidelines that could facilitate cooperation between them and the therapist. This might not only improve the quality of therapy but also protect them from the psychosocial consequences of role confusion (Teegen and Gönnenwein, 2002; Butow et al., 2012). The importance of such guidelines was reflected in discussions during the workshop, in which the question arose very frequently as to how a clear division of roles could be maintained and how it would be possible to distance oneself from the patient's concerns.

The positive findings concerning the effect of the online training for interpreters specific to TF-CBT were also underpinned by the very positive feedback given by the participants as seen in the data and also verbally. Regarding the positive feedback, it is important to note that participants did not have to pay for the workshop which might have led to socially desirable response patterns.

When looking at Kirkpatrick's four levels of evaluation (Kirkpatrick, 1975; Kirkpatrick and Kirkpatrick, 2010), we could see that the participants reacted very positively to the training (reaction) and that knowledge increased and attitude changed over the course of the workshop (learning). The next two steps according to Kirkpatrick (1975) would be to investigate whether the participants changed not only their attitudes but also their behavior (behavior) and if therapy with trained interpreters was more effective (results). Promising results of short educational workshops on other psychosocial subjects suggest that such workshops may have an impact not only on knowledge gain and attitude change, but also on behavior change (Sawyer et al., 2016; Marcussen et al., 2019; Pontes et al., 2019). In these studies, based on Kirkpatrick's levels of evaluation, hospital staff demonstrated more positive attitudes toward collaboration with patients, improved role clarity and individual authority, the desired behavior change, and patient satisfaction. Given the promising results for knowledge gain and attitude change in the present study, similar trends could, therefore, be possible for this interpreter-specific training with regard to behavior change and more qualified psychotherapy when working with trained interpreters in mental health care for minor refugees.

The predictors "experience in therapy" and "knowledge gain" showed tendencies of negative effects on attitude change. This is in line with earlier findings among other professions (Chaiken and Maheswaran, 1994; Dillard and Pfau, 2002; Kruglanski et al., 2006; Bohner and Dickel, 2011; van Lange et al., 2011). The predictor "experience in therapy" was negatively associated with attitude changes with more than 95% probability. This indicated that participants with more experience as interpreters were less likely

to change their attitudes. According to the literature, this could be due to existing entrenched attitudes (Bohner and Dickel, 2011) biased by previous information (van Lange et al., 2011). As the workshop was run by a university member, the participants could have changed their attitude simply because they had confidence in the "scientific" speaker (peripheric process) (Chaiken and Maheswaran, 1994; van Lange et al., 2011). This was particularly true for participants with no prior experiences of trauma therapy, as they had less reference knowledge that would have enabled them to challenge the information provided. Furthermore, changing attitudes about working as an interpreter when already working as an interpreter in psychotherapy included the critical questioning of one's own work. This might lead to a more self-protecting and defense-motivated position (van Lange et al., 2011). Moreover, it seemed likely that experienced interpreters already had desired attitudes that were probably caused by ceiling effects and were less likely to change.

Strengths and limitations

To the author's knowledge, the present study is one of the first to systematically evaluate a training program for interpreters working in mental health services and trauma-focused psychotherapy and, by extension, to address the lack of qualified training (Cecchet and Calabrese, 2011; Searight and Armock, 2013; Hunt and Swartz, 2017; van Os et al., 2020) and its evaluation (Rousseau et al., 2011) specific to minors (Raval, 2003; Rousseau et al., 2011). The present study, therefore, looked at the scarcity of existing research and this was even more necessary with regard to a therapeutic setting in a triad with minor patients. Using Bayesian statistics in this exploratory approach offered the advantage of being able to calculate probabilities and uncertainties and, by extension, to obtain more information about the different parameters. In addition, as Bayesian statistics take existing scientific knowledge into account, this method will enable more extensive research in the context of interpreter workshops on attitude and knowledge changes to enable the use of our outcomes as new prior knowledge.

Nevertheless, it must be emphasized that this study adopted an exploratory approach. There was no comparison training or control sample consisting of untrained individuals. In addition, most of the instruments used had not yet been validated. Consequently, no information was available on how effectively the constructs had been measured. Furthermore, the questionnaires did not permit any comparison with the average population. This is due, by and large, to the lack of established measures in the context of attitude change among interpreters in mental health settings. The internal consistency of the IPAP was rather low which might indicate that it had captured divergent constructs. This is a major limitation of the study and further research is needed to develop psychometrically validated questionnaires to capture helpful attitudes of interpreters for therapy. Moreover, there was no exploration of whether the workshop had increased the quality of translation in therapy and, by extension, the effectiveness of therapy since no external control of success, such as the comparison of therapy results of trained and untrained interpreters, was carried out. Even if the results of the present study constituted important initial pointers in a field in which hardly any findings exist, they should still be interpreted cautiously.

Implications and conclusion

The promising results emphasize the importance and effectiveness of simple and cost-effective workshops for interpreters working in (trauma-focused) psychotherapy. In order to improve training programs for interpreters involved in psychotherapy, there is still need for validation of instruments screening for therapy-relevant attitudes. Moreover, the results of trained interpreters should be compared with control groups. Further research is essential in order to provide insight into the effectiveness of training in terms of behavior change, and to ensure qualitative therapy with trained interpreters. Additionally, more workshops for interpreters focusing on work in psychotherapy need to be developed and evaluated scientifically. As psychotherapy in the presence of an interpreter was shown to be effective provided the interpreters were experienced or educated (Ardenne et al., 2007; Brune et al., 2011; Lambert and Alhassoon, 2015), evaluated training programs on trauma therapy for interpreters are an important basis for appropriate therapeutic healthcare when therapist and patient do not speak the same language. Based on this, quality standards for training could be put in place and disseminated (Cecchet and Calabrese, 2011; Searight and Armock, 2013; Hunt and Swartz, 2017; van Os et al., 2020). This could enable therapists and patients to find and identify well-trained interpreters in the language needed. Stepped-care approaches such as the BETTER CARE project (Rosner et al., 2020), to which the present study was linked, offer a good framework for the further dissemination of interpreter training specific to trauma therapy.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Institutional Review Board of the Catholic University Eichstätt-Ingolstadt. The patients/participants provided their written informed consent to participate in this study.

Author contributions

LM developed and conducted the workshops and supervised the study process. MH helped to conduct the workshops, collected the data, carried out the data analysis, and drafted the manuscript. JU co-designed the workshop and supervised the study process.

RR was the principal investigator of the study and supervised the study process. All authors read and approved the final manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Alliger, G., and Janak, E. (1989). Kirkpatrick's levels of training criteria: thirty years later. *Pers. Psychol.* 331–342.

Ardenne, P. D., Ruaro, L., Cestari, L., Fakhoury, W., and Priebe, S. (2007). Does interpreter-mediated CBT with traumatized refugee people work? A comparison of patient outcomes in East London. *Behav. Cogn. Psychother.* 35, 293–301. doi: 10.1017/S1352465807003645

Bååth, R. (2014). "Bayesian First Aid: A Package that Implements Bayesian Alternatives to the Classical test Functions in R," in *Proceedings of UseR! the International R User Conference*, Geneva.

BAMF – Bundesamt für Migration und Flüchtlinge (2020). *Unbegleitete Minderjährige - Unbegleitete Minderjährige in Deutschland*. Berlin: BAMF.

Bauer, A., and Alegría, M. (2010). Impact of patient language proficiency and interpreter service use on the quality of psychiatric care: a systematic review. *Psychiatr. Serv.* 61, 765–773. doi: 10.1176/ps.2010.61.8.765

Becher, E., and Wieling, E. (2015). The intersections of culture and power in clinician and interpreter relationships: A qualitative study. *Cultur. Divers. Ethnic Minor Psychol.* 21, 450–457.

Bohner, G., and Dickel, N. (2011). Attitudes and attitude change. *Annu. Rev. Psychol.* 62, 391–417. doi: 10.1146/annurev.psych.121208.131609

Brune, M., Eiroá-Orosa, F., Fischer-Ortman, J., Delijaj, B., and Haasen, C. (2011). Intermediated communication by interpreters in psychotherapy with traumatized refugees. *Int. J. Cult. Ment. Health* 4, 144–151. doi: 10.1080/17542863.2010.537821

Butow, P., Lobb, E., Jefford, M., Goldstein, D., Eisenbruch, M., Girgis, A., et al. (2012). A bridge between cultures: interpreters' perspectives of consultations with migrant oncology patients. *Support Care Cancer* 20, 235–244. doi: 10.1007/s00520-010-1046-z

Cecchet, S., and Calabrese, D. (2011). Interpreter-mediated therapy for refugees: a need for awareness and training. *Grad. Stud. J. Psychol.* 13, 12–16.

Chaiken, S., and Maheswaran, D. (1994). Heuristic processing can bias systematic processing: Effects of source credibility, argument ambiguity, and task importance on attitude judgment. *J. Pers. Soc. Psychol.* 66, 460–473. doi: 10.1037/0022-3514.66.3.460

Cohen, J. A., Mannarino, A. P., and Deblinger, E. (2017). *Treating Trauma and Traumatic Grief in Children and Adolescents*, 2nd Edn. New York NY: Guildford press.

Crezee, I., Jülich, S., and Hayward, M. (2013). Issues for interpreters and professionals working in refugee settings. *J. Appl. Ling. Profess. Pract.* 8, 253–273.

Dillard, J., and Pfau, M. (2002). *The Persuasion Handbook: Developments in Theory and Practice*. Thousand Oaks: SAGE Publications, 897.

Döring, N., and Bortz, J. (2016). *Research methods and evaluation in the social and human sciences*, 5th Edn. Berlin: Springer.

Downing, B. T., and Helms, K. (1992). *Professional Training for Community Interpreters. A Report on Models of Interpreter Training and the Value of Training*. Minnesota: Bush Foundation.

Federici, F., and Cadwell, P. (2018). Translation and Interpreting in Non-Governmental Organisations. *TS* 7, 20–43. doi: 10.1075/ts.00002.fed

Fennig, M., and Denov, M. (2021). Interpreters working in mental health settings with refugees: An interdisciplinary scoping review. *Am. J. Orthopsychiatry* 91, 50–65.

Gartley, T., and Due, C. (2017). The Interpreter Is Not an Invisible Being: A Thematic Analysis of the Impact of Interpreters in Mental Health Service Provision with Refugee Clients. *Aust. Psychol.* 52, 31–40. doi: 10.1111/ap.12181

Geiling, A., Knaevelsrud, C., Böttche, M., and Stammel, N. (2021). Mental Health and Work Experiences of Interpreters in the Mental Health Care of Refugees: A Systematic Review. *Front. Psychiatry* 12:710789. doi: 10.3389/fpsyt.2021.710789

Hale, S., Goodman-Delahunty, J., and Martschuk, N. (2019). Interpreter performance in police interviews. Differences between trained interpreters and untrained bilinguals. *Interp. Transl. Train.* 13, 107–131. doi: 10.1080/1750399X.2018.1541649

Hanft-Robert, S., Römer, M., Morgenroth, O., Redlich, A., and Metzner, F. (2018). Handlungsempfehlungen für die dolmetschergestützte Psychotherapie mit Flüchtlingen und Asylbewerbern: Ergebnisse qualitativer Interviews mit Psychotherapeuten und Dolmetschern zu Chancen und Herausforderungen in der Triade. *Verhaltenstherapie* 28, 73–81. doi: 10.1159/000480667

Hasbún Avalos, O., Pennington, K., and Osterberg, L. (2013). Revolutionizing volunteer interpreter services: an evaluation of an innovative medical interpreter education program. *J. Gen. Intern. Med.* 28, 1589–1595. doi: 10.1007/s11606-013-2502-5

Heck, N., Saunders, B., and Smith, D. (2015). Web-based training for an evidence-supported treatment: training completion and knowledge acquisition in a global sample of learners. *Child Maltreat.* 20, 183–192. doi: 10.1177/1077559515586569

Herold, M. (2019). *Dolmetscher in der psychosozialen Arbeit mit Flüchltingen: Eine Übersicht von Trainings, Fortbildungen und Schulungen für Dolmetscher in Deutschland, Österreich und der Schweiz*. Ph.D. thesis. Ingolstadt: Katholische Universität Eichstätt.

Hunt, X., and Swartz, L. (2017). Psychotherapy with a language interpreter: considerations and cautions for practice. *South Afr. J. Psychol.* 47, 97–109. doi: 10.1177/0081246316650840

Karpernstein, J., and Nordheim, F. (2019). *Die Situation (unbegleiteter) Minderjähriger und junger volljähriger Geflüchteter in Deutschland: Auwertung der Onlineumfrage 2019*. Berlin: BumF.

Kien, C., Sommer, I., Faustmann, A., Gibson, L., Schneider, M., Krczal, E., et al. (2019). Prevalence of mental disorders in young refugees and asylum seekers in European Countries: a systematic review. *Eur. Child Adolesc. Psychiatry* 28, 1295–1310. doi: 10.1007/s00787-018-1215-z

Kießl, G., Meißner, T., Romer, G., and Möller, B. (2017). Dolmetschereinsatz in der Arbeit mit geflüchteten Kindern, Jugendlichen, ihren Familien und Bezugspersonen im psychotherapeutischen Versorgungskontext. *Prax. Kinderpsychol. Kinderpsychiatr.* 66, 304–312. doi: 10.13109/prkk.2017.66.4.304

Kirkpatrick, D. (1975). *Evaluating Training Programs*. New York, NY: Tata McGraw-Hill Education.

Kirkpatrick, D., and Kirkpatrick, J. (2010). *Evaluating training programs: The four levels*. San Francisco, CA: Berrett-Koehler Publishers.

Kruglanski, A., Chen, X., Pierro, A., Mannetti, L., Erb, H., and Spiegel, S. (2006). Persuasion according to the unimodel: Implications for cancer communication. *J. Commun.* 56, 105–122. doi: 10.1111/j.1460-2466.2006.00285.x

Kruschke, J. (2011). *Tutorial: Doing Bayesian Data Analysis with R and BUGS*. Oxford: Elsevier.

Kruschke, J. (2013). Bayesian estimation supersedes the t test. *J. Exp. Psychol.* 142, 573–603. doi: 10.1037/a0029146

Kruschke, J. (2015). *Doing Bayesian data analysis: A tutorial with R, JAGS, and Stan*, 2nd Edn. Amsterdam: Academic Press.

Kruschke, J. (2021). *Doing Bayesian Data Analysis - 1st Edition*. Bloomington: Indiana University.

Lambert, J., and Alhassoon, O. (2015). Trauma-focused therapy for refugees: meta-analytic findings. *J Couns Psychol* 62, 28–37. doi: 10.1037/cou0000048

Marcussen, M., Nørgaard, B., and Arnfred, S. (2019). The effects of interprofessional education in mental health practice: Findings from a systematic review. *Acad. Psychiatry* 43, 200–208. doi: 10.1007/s40596-018-0951-1

McElreath, R. (2016). *Statistical Rethinking: A Bayesian Course weith Examples in R and Stan*. London: Taylor & Francis Group.

Miller, K., Martell, Z., Pazdirek, L., Caruth, M., and Lopez, D. (2005). The role of interpreters in psychotherapy with refugees: an exploratory study. *Am. J. Orthopsychiatry* 75, 27–39. doi: 10.1037/0002-9432.75.1.27

Morina, N., Maier, T., and Schmid Mast, M. (2010). Lost in translation? Psychotherapie unter Einsatz von Dolmetschern [Lost in translation? Psychotherapy using interpreters]. *Psychother. Psychosom. Med. Psychol.* 60, 104–110. doi: 10.1055/s-0029-1202271

Müller, L., Büter, K., Rosner, R., and Unterhitzenberger, J. (2019). Mental health and associated stress factors in accompanied and unaccompanied refugee minors resettled in Germany: a cross-sectional study. *Child Adolesc. Psychiatry Ment. Health* 13:8. doi: 10.1186/s13034-019-0268-1

Murray, H. (2017). Evaluation of a trauma-focused CBT training programme for IAPT services. *Behav. Cogn. Psychother.* 45, 467–482. doi: 10.1017/S1352465816000606

National Institute for Health and Care Excellence (2021). *Recommendations. Post-traumatic-stress-disorder. NICE guideline NG116*. London: National Institute for Health and Care Excellence.

Paone, T., and Malott, K. (2008). Using Interpreters in Mental Health Counseling: A Literature Review and Recommendations. *J. Multicult. Counsel. Dev.* 36, 130–142. doi: 10.1002/j.2161-1912.2008.tb00077.x

Petty, R., and Cacioppo, J. (1986). "The Elaboration Likelihood Model of Persuasion," in *Communication and Persuasion*, eds R. Petty and J. Cacioppo (New York, NY: Springer).

Pontes, L., Siqueira, A., and Williams, L. C. A. (2019). Systematic literature review of the ACT raising safe kids parenting program. *J. Child Fam. Stud.* 28, 3231–3244. doi: 10.1007/s10826-019-01521-6

Qualtrics (2005). *Better frontlines. Better bottom line*. Provo, UT: Qualtrics.

R Core Team (2020). *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing.

Ratcliff, B., and Pereira, C. L. (2019). 'alliance thérapeutique triadique dans une psychothérapie avec un interprète un concept en quête de validation. *Pratiq. Psycholog.* 25, 63–77. doi: 10.1016/j.prps.2018.02.001

Ratcliff, B., and Suardi, F. L. (2006). 'interprète dans une consultation thérapeutique: conceptions de son rôle et difficultés éprouvées. *Psychothérapies* 26:37. doi: 10.3917/psys.061.0037

Raval, H. (2003). Therapists' Experiences of Working with Language Interpreters. *Int. J. Mental Health* 32, 6–31.

Reavell, J., and Fazil, Q. (2017). The epidemiology of PTSD and depression in refugee minors who have resettled in developed countries. *J. Ment. Health* 26, 74–83. doi: 10.1080/09638237.2016.1222065

Rosner, R., Sachser, C., Hornfeck, F., Kilian, R., Kindler, H., Muche, R., et al. (2020). Improving mental health care for unaccompanied young refugees through a stepped-care approach versus usual care+: study protocol of a cluster randomized controlled hybrid effectiveness implementation trial. *Trials* 21:1013. doi: 10.1186/s13063-020-04922-x

Rousseau, C., Measham, T., and Moro, M. (2011). Working with Interpreters in Child Mental Health. *Child Adolesc. Ment. Health* 16, 55–59. doi: 10.1111/j.1475-3588.2010.00589.x

RStudio Team (2020). *RStudio: Integrated Development for R*. Boston, MA: RStudio.

Sander, R., Laugesen, H., Skammeritz, S., Mortensen, E., and Carlsson, J. (2019). Interpreter-mediated psychotherapy with trauma-affected refugees - A retrospective cohort study. *Psychiatry Res.* 271, 684–692. doi: 10.1016/j.psychres.2018.12.058

Sansen, L., Saupe, L., Steidl, A., Fegert, J., Hoffmann, U., and Neuner, F. (2019). Daring to process the trauma: using a web-based training to reduce psychotherapists' fears and reservations around implementing trauma-focused therapy. *Eur. J. Psychotraumatol.* 10:1696590. doi: 10.1080/20008198.2019.1696590

Sawyer, S., Coles, J., Williams, A., and Williams, B. (2016). A systematic review of intimate partner violence educational interventions delivered to allied health care practitioners. *Med. Educ.* 50, 1107–1121. doi: 10.1111/medu.13108

Schouler-Ocak, M., and Aichberger, M. (2017). Kulturelle Einflussfaktoren in der Psychotherapie. *Psychotherapeut* 62, 277–284. doi: 10.1007/s00278-017-0204-x

Searight, H., and Armock, J. (2013). Foreign Language Interpreters in Mental Health: A Literature Review and Research Agenda. *Am. J. Psychol.* 15, 17–38.

Teegen, F., and Gönnenwein, C. (2002). Posttraumatische Belastungsstörungen bei Dolmetschern für Flüchtlinge. *Verhaltenstherapie Verhaltensmedizin* 23, 419–436.

Tribe, R., and Morrissey, J. (2004). Good practice issues in working with interpreters in mental health. *Intervention* 2, 129–142.

Tschirk, W. (2019). *Bayes statistics for human and social sciences*. Berlin: Springer.

Unterhitzenberger, J., Eberle-Sejari, R., Rassenhofer, M., Sukale, T., Rosner, R., and Goldbeck, L. (2015). Trauma-focused cognitive behavioral therapy with unaccompanied refugee minors: a case series. *BMC Psychiatry* 15:260. doi: 10.1186/s12888-015-0645-0

Unterhitzenberger, J., Wintersohl, S., Lang, M., König, J., and Rosner, R. (2019). Providing manualized individual trauma-focused CBT to unaccompanied refugee minors with uncertain residence status: a pilot study. *Child Adolesc. Psychiatry Ment. Health* 13:22. doi: 10.1186/s13034-019-0282-3

van Lange, P., Kruglanski, A., and Higgins, E. (2011). *Handbook of Theories of Social Psychology: Collection: A Theory of Heuristic and Systematic Information Processing*. London: SAGE Publications.

van Os, E., Zijlstra, A., Knorth, E., Post, W., and Kalverboer, M. (2020). Finding keys: A systematic review of barriers and facilitators for refugee children's disclosure of their life stories. *Trauma Viol. Abuse* 21, 242–260. doi: 10.1177/1524838018757748

Villalobos, B., Orengo-Aguayo, R., Castellanos, R., Pastrana, F., and Stewart, R. (2021). Interpreter perspectives on working with trauma patients: Challenges and recommendations to improve access to care. *Profess. Psychol.* doi: 10.1037/pro0000404 [Epub ahead of print].

Yardley, S., and Dornan, T. (2012). Kirkpatrick's levels and education 'evidence'. *Med. Educ.* 46, 97–106. doi: 10.1111/j.1365-2923.2011.04076.x

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EDITED BY
Alvin Kuowei Tay,
United Nations, United States

REVIEWED BY
Nicolas Tajan,
Kyoto University, Japan
Usama El-Awad,
Bielefeld University, Germany

*CORRESPONDENCE
Malte Behrendt
✉ malte.behrendt@posteo.net

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A conceptual study on the relationship between daily stressors, stressful life events, and mental health in refugees using network analysis

Malte Behrendt[1]*, Marianne Vervliet[2], Marina Rota[1], Sarah Adeyinka[1], Océane Uzureau[1], Andrew Rasmussen[3], Heide Glaesmer[4], Ine Lietaert[1,5] and Ilse Derluyn[1]

[1]Department of Social Work and Social Pedagogy, Centre for the Social Study of Migration and Refugees, Ghent University, Ghent, Belgium, [2]Department of People and Well-Being, Thomas More University of Applied Sciences, Mechelen, Belgium, [3]Culture, Migration, and Community, Department of Psychology, Fordham University, New York, NY, United States, [4]Department of Medical Psychology and Medical Sociology, Medical Faculty, The University of Leipzig Medical Center, Leipzig, Germany, [5]Institute on Comparative Regional Integration Studies, United Nations University, Bruges, Belgium

Introduction: There is growing recognition that daily stressors, such as social and material deficiencies, can be highly detrimental to the mental health of refugees. These stressors are in addition to stressful life events, which have been widely studied in the context of migration and forced displacement. Despite increasing evidence for an ecological model, there is still no consensus regarding the conceptualization of these highly influential factors. In particular, the demarcation of daily stressors from stressful life events and the categorization of daily stressors require further examination in order to develop usable and accurate tools for researchers, design effective interventions for practitioners and assist politicians in designing meaningful policies.

Methods: To address these challenges, we used data from a sample of 392 unaccompanied young refugees from diverse backgrounds and employed network analysis to examine the relationships between daily stressors, stressful life events, and symptoms of depression, anxiety, and post-traumatic stress.

Results: Our findings highlight the significant relationship between daily stressors and mental health, particularly depression. Meaningful clusters of daily stressors include material stressors, social stressors, and social exclusion stressors.

Conclusion: Our results demonstrate the importance of considering daily stressors in the mental health of refugees and suggest that using a network approach offers a viable way to study these complex interrelationships. These findings have implications for researchers, practitioners, and policymakers in understanding and addressing the mental health needs of refugees.

KEYWORDS

refugees, migration, mental health, daily stressors, stressful life events, trauma, network analysis, ecological model

1. Introduction

Refugees[1] demonstrate remarkable levels of resilience, considering the manifold stressors and challenges they face (Behrendt et al., 2021, 2023). However, research also testifies to the poor mental health status of this group, who consistently show high rates of depression, anxiety and post-traumatic stress symptoms (Morina et al., 2018; Blackmore et al., 2020). These symptoms are often associated with stressful life events (SLEs): potentially traumatic experiences that occur in the context of involuntary migration (Höhne et al., 2020; Behrendt et al., 2022; Pfeiffer et al., 2022; Derluyn et al., 2023). SLEs are typically defined as acute and potentially traumatic events in the past, often in relation to the DSM-5 criterion A for post-traumatic stress disorder (PTSD), namely "exposure to actual or threatened death, serious injury, or sexual violence" (American Psychiatric Association, 2013).

Next, to these experiences, a growing number of studies indicate that daily stressors (DSs) have a major impact on the mental health of refugees (Miller and Rasmussen, 2017; Hajak et al., 2021). In contrast to SLEs, DSs are usually defined as less severe, but on-going and pervasive stressors (Miller and Rasmussen, 2017). In line with a shift from trauma-focused approaches to more ecological approaches, these contextual factors have increasingly received the attention of researchers and practitioners alike (Miller and Rasmussen, 2017; Villanueva O'Driscoll et al., 2017; IOM, 2019). Despite this growing recognition however, there is no consensus with regard to the conceptualization of daily stressors. In the current literature, daily stressors are also called daily hassles or post-migration stressors, even though they may also occur before and during migration. This variety in terms already shows the lack of a coherent concept. Two major issues that researchers are currently struggling with are the demarcation from the more established concept of SLEs and the categorization of the various DSs.

The relationship between DSs, SLEs and mental health outcomes has been discussed at length (Neuner, 2010; Miller and Rasmussen, 2014; Riley et al., 2017). Different pathways have been proposed and according to the model developed by Miller and Rasmussen (2010, 2014, 2017), DSs can affect mental health either directly, as they are emotionally taxing, or indirectly, by depleting coping resources and mediating the effects of SLEs on mental health. Recent evidence supports the idea that there is indeed a qualitative difference between SLEs and DSs (Behrendt et al., 2023). However, it is quite difficult to distinguish these two kinds of stressors and to identify pathways toward the resulting mental health symptoms, also because there is often an interaction effect between them (Miller and Rasmussen, 2014; Mootoo et al., 2019). This is problematic because the oftentimes scarce resources in terms of humanitarian aid require a prioritization of different approaches to treatment such as trauma-focused approaches or interventions primarily focused on social stressors (Silove et al., 2017). Further, refugees may adopt specific coping strategies for SLEs and DSs, and practitioners working with them need to design appropriate interventions depending on the stressors they face (Kocijan-Hercigonja et al., 2009; Behrendt et al., 2023).

Another critical issue is the categorization of different daily stressors. They are usually defined quite broadly and are thought to include a wide range of variables ranging from material stressors, liminal contexts due to temporary legal status, acculturation stress and discrimination to the loss of social networks (e.g., Vervliet et al., 2014). However, most studies examining the impact of daily stressors on the mental health of refugees do not distinguish these diverging kinds of stressors at all. Other studies focus exclusively on single variables, such as the disruption of social networks (Sierau et al., 2019), the asylum process (Jakobsen et al., 2017), or placement in large-scale centers (O'Higgins et al., 2018), thus disregarding other stressors. As Rasmussen and Jayawickreme (2020) point out, there is a need for the revision of tools and methodology in the refugee mental health field. Yet, we lack a clear-cut and meaningful conceptualization of DSs, which is critical for the development of tools that allow an accurate assessment.

Attempts to conceptualize and demarcate stressors following exposure to political violence are often made at the expense of methodological rigor (Netland, 2005). In order to tackle the challenges mentioned above, researchers who strive to examine DSs in a more comprehensive way often resort to the use of sum scores, scales that are not yet validated (e.g., Vervliet et al., 2014; Jensen et al., 2019; Müller et al., 2019) or the use of measures that are not adapted to specific populations (e.g., Seglem et al., 2014; Ponnamperuma and Nicolson, 2018). As Mootoo et al. (2019) illustrate, the use of composite scores has limited value for practitioners who need to understand specific aspects of stress factors in order to design interventions accordingly.

Furthermore, researchers who attempt to group daily stressors often do so by applying factor analysis (e.g., Keles et al., 2017; Müller et al., 2019), even though the validity of this method has been contested (Netland, 2005; De Schryver et al., 2015; Rasmussen et al., 2018). This is because it presupposes that indicators represent latent constructs, in line with the dominant "reflective model" in psychology, e.g., observable symptoms reflect an underlying and essential attribute such as depression (Schmittmann et al., 2013). However, DSs and SLEs are concrete, real-life events or conditions, not latent: Items on event checklists correlate with one another, rather than with an underlying construct. Therefore, Netland (2005) argues that this conventional method of categorizing them is inappropriate.

To circumvent this pitfall, network analysis has been proposed as a possible alternative to analyze the complex relationships between stressors and mental health outcomes (De Schryver et al., 2015; Mootoo et al., 2019). Network analysis is a promising and future-oriented method that has recently gained widespread appreciation in the mental health field (Schmittmann et al., 2013; Hevey, 2018; Birkeland et al., 2020). This method does justice to the complex interrelationships of variables and different factors inherent to the migration context (De Schryver et al., 2015; Morvan et al., 2020). It recognizes that different stressors and mental health symptoms are causally interrelated, and allows to investigate how constructs relate to one another and how specific indicators influence constructs (De Schryver et al., 2015; Mootoo et al., 2019).

The aim of the current study is to nuance and flesh out existing concepts of DSs in order to address the lack of conceptual clarity in the field and contribute to the development of more precise and valid

1 As the line between the categories of "migrants" and "refugees" is often blurred (Derluyn and Vervliet, 2012; Lorenzen, 2018), we use a social definition of refugee to include all individuals who feel forced to flee their home country, as well as those who have applied for international protection.

tools. Using a network approach, we examine the relationships between DSs, SLEs and the mental health outcomes depression, anxiety and PTSD to answer the research questions:

1. How are DSs different from SLEs?
2. How can DSs be grouped in a meaningful way?

These questions are examined in a sample of unaccompanied young refugees (UYRs), defined as young people who feel forced to leave their home country unaccompanied by their parents or other relatives and who are not being cared for by an adult who, by law or custom, is responsible for doing so (UNHCR, Unicef, and IOM et al., 2019). This group is representative of the population of refugees with documented histories of DSs and SLEs that lead to severe mental health symptoms including anxiety, depression and post-traumatic stress (Behrendt et al., 2022; Pfeiffer et al., 2022). In addition to the stress associated with forced migration, they can be seen as particularly vulnerable because they lack the parental, social (and material) support that is crucial for this age group (Behrendt et al., 2021; Pfeiffer et al., 2022). As in the general population, the extent to which UYRs who experience SLEs develop PTSD varies considerably (Van der Kolk, 2000) and El-Awad et al. (2021) illustrate the differences between unaccompanied and accompanied young refugees and other migrant groups with regard to the complex pathways between stressors and mental health outcomes. However, UYRs show an increased prevalence of PTSD in comparison (Ehntholt et al., 2018; Bamford et al., 2021) and their heightened susceptibility to both SLEs and DSs makes them a suitable population for this study. Whereas our research project used a mixed-methods design and the narrative accounts of the participants would have added value to the quantitative measures, the inclusion of these qualitative data was beyond the scope of this conceptual study, which focuses on self-reported quantitative data. For in-depth analyses of our qualitative data, the reader is referred to our other publications (Derluyn et al., 2022).

2. Methods

2.1. Participants and setting

Data were drawn from two similar studies. First, we used the data from the ChildMove project, a research project investigating the impact of flight experiences on the psychological health of UYRs (Derluyn et al., 2022). Participants were recruited in Libya ($n = 100$), Greece ($n = 45$), Italy ($n = 65$), and Belgium ($n = 79$). Second, we used data from a previous comparable study with URMs in Belgium ($n = 103$) (Vervliet et al., 2014), yielding a total of $N = 392$ participants. Both studies were longitudinal in nature, yet here we only used the data from the baseline measurement because of considerable attrition over time. Participants were 16 years old on average ($M = 16.19$, $SD = 1.87$), most were male (84%), and the top five countries of origin were Eritrea ($n = 72$), Afghanistan ($n = 34$), Nigeria ($n = 31$), Somalia ($n = 29$), and Pakistan ($n = 21$).

We recruited the participants in a variety of settings, including migrant detention facilities, official reception facilities, NGO shelters and informal settings. The researchers strived to build rapport with the participants and gave a detailed explanation of the research before asking them to take part. We selected participants to represent the population of UYRs with regard to their nationality, age and gender in each setting. Before each interview, we reminded the youth that their participation in the research was voluntary, that we would treat the data confidentially and would anonymize them, that there would be no consequences for them (e.g., with regard to their legal procedures) and that they could stop their participation at any time. Cultural mediators assisted in the recruitment and interview process according to the participants' preference. In preparation for the field work, we had established a referral network in each study setting to guide participants to social, legal and mental health care providers if need be. All participants and their guardians (if they had one) gave written consent for their participation. The Committee of Ethics in Research at the University of West Attica, the Hellenic Data Protection Authority, the Italian National Research Council's Committee on Research Ethics and Bioethics (0059862) and the ethics committee of the Faculty of Psychology and Educational Sciences at Ghent University (#2017-23-Ine Lietaert) gave their approval for the respective studies.

2.2. Measures

We operationalized the concepts under study with the following questionnaires. All questionnaires were translated into the languages present in the population (including Albanian, Amharic, Arabic, Dari/Farsi, English, French, Pashto, Servo-Croatian, Somali, Tigrinya and Urdu). If it turned out to be necessary, the translations were revised by a second translator.

Daily Stressors Scale for Young Refugees (DSSYR) (Vervliet, 2013). This 15-item questionnaire assessed daily stressors in the 4 weeks prior to the interview. We omitted items 2 ("Difficulties in relationships with adults"), 3 ("Difficulties in relationships with youngsters") and 5 ("Other difficulties in the family") because we queried these items extensively in the qualitative interviews. In the samples from the ChildMove project, item 11 was changed to "feeling bored" as this is supposedly easier to understand than "Having no satisfaction with how free-time is filled in." Likewise, item 5 ["Other difficulties in the family (such as an illness)"] was changed to "Worrying about my family at home" for participants of the ChildMove project (see Table 1). Participants answered each item on a 4-point Likert scale (never, sometimes, often, always) and also had the option to indicate "I do not know/I do not want to answer." Table 1 shows the items of the Daily Stressors Scale for Young Refugees, as used in both studies.

Stressful Life Events (SLE) (Bean et al., 2004). This 12-item questionnaire measures if and how many traumatic events the participants witnessed throughout their lives. For the participants of the ChildMove project, we changed item 1 from "Have there been drastic changes in your family during the last year?" to "Have there been drastic changes in your family?" in order to include events over the course of their entire lives rather than just during the last year. Items 3 ("Has someone died in your life who you really cared about?"), 4 ("Have you had a life-threatening medical problem?"), 5 ["Have you been involved in a serious accident (for example involving a car)?"] and 6 ["Have you ever been involved in a disaster (for example: flood, hurricane, fire, tornado, avalanche, earthquake, hostage situation, chemical disaster,…)?"] have been omitted because they were covered sufficiently by the other items resulting in a limited

TABLE 1 Items of the Daily Stressors Scale for Young Refugees.

#	Item	*M*	SD
1	Not enough food/clothing	2.16	1.04
2	Not enough money	2.56	1.25
3	Not enough housing	1.96	1.22
4	Not enough medical care	1.78	1.13
5	Feelings of unsafety	1.85	1.06
6	Difficulties in making new friends	1.80	1.09
7	Worrying about my family at home[a] Other difficulties in the family (such as an illness)[b]	2.97	1.20
8	Difficulties in obtaining legal documents	2.27	1.21
9	Feeling bored[a] Having no satisfaction with how free-time is filled in[b]	2.15	1.04
10	Feeling uncertain about the future	2.32	1.06
11	Hear people say bad things about myself	1.38	0.69
12	Feeling of being treated unfairly compared to others	1.44	0.80
13	Feeling that others have prejudices about myself or people of my country/culture	1.68	1.03

[a]Wording in ChildMove study, [b]Wording in Vervliet et al.'s (2014) study, Range = 1–4.

TABLE 2 Items of the Stressful Life Events.

#	Item	Endorsed (%)
1	Have there been drastic changes in your family?[a] Have there been drastic changes in your family during last year?[b]	65.2
2	Have you ever been separated from your family against your will? (By a stranger, police officer, soldier, fleeing your country of origin)	40.3
3	Have you ever experienced a war or armed military conflict going on around you in your country of origin?	61.8
4	Has someone ever hit, kicked, shot or some other way tried to physically hurt you?	76.0
5	Did you ever see it happen to someone else in real life (not just on television or in a film)?	87.6
6	Has someone ever tried to touch your private sexual parts against your will or forced you to have sex?	23.6
7	Did you experience any other very stressful life events where you thought that you were in great danger?	88.0
8	Did you experience any other very stressful life events where you thought that someone else was in great danger?	79.4

[a]Wording in ChildMove study, [b]Wording in Vervliet et al.'s (2014) study.

amount of questions as the interviews tended to be too long and exhausting for the participants. Using only the items common to both studies, eight items remained. Table 2 shows the items of the Stressful Life Events questionnaire, as used in both studies.

Hopkins Symptom Checklist-37A (HSCL) (Bean et al., 2007). This 37-item questionnaire builds on and adds 12 externalizing items to the HSCL-25 in order to adapt it to adolescents from diverse backgrounds. Next to these externalizing symptoms, it assesses anxiety and depression symptoms in the 4 weeks prior to the interview. Participants answered each item on a 4-point Likert scale (never, sometimes, often, always) and also had the option to indicate "I do not know/I do not want to answer." The anxiety subscale included items 1, 2, 5, 8, 11, 14, 17, 20, 23, and 26. The depression subscale included items 6, 9, 13, 15, 18, 21, 22, 24, 27–30, 32, and 33.

Reactions of Adolescents to Traumatic Stress (RATS) (Bean et al., 2006). This 22-item questionnaire measures PTSD symptoms according to the DSM-IV. Same as with the previous questionnaires, we used an abbreviated version of the RATS in order to reduce the potential burden of trauma assessment and omitted the items that had been assessed in Vervliet et al.'s (2014) study but not in the ChildMove study. Participants answered each item on a 4-point Likert scale (never, sometimes, often, always). The measure includes the three subscales intrusion (items 1, 2, 3, 4, and 5), numbing/avoidance (items 6, 7, and 8) and hyperarousal (items 9 and 10).

2.3. Data analysis

First, the ordinal HSCL and RATS scales were transformed to the continuous scores of their subscales. The nominal answer categories of the SLE (where the event had taken place) have been collapsed into whether or not participants had experienced the event in their lifetime. The answer categories of the DSSYR remained ordinal. After listwise deletion of cases with missing values, $N = 233$ (59.4%) cases remained. In order to find out about the roles of SLEs and DSs in relation to the construct of post-traumatic stress disorder and mental health in general, we calculated two network models: One with the items of the DSSYR, SLE and the HSCL subscales anxiety and depression (23 variables), and one with the items of DSSYR, SLE and the RATS subscales avoidance, intrusion and hyperarousal (24 variables). For both models, we used the estimateNetwork function in the bootnet package with graphical least absolute shrinkage and selection operator (GLASSO) regularization, resulting in a collection of more parsimonious and more easily interpretable networks. We then selected the best network using the Extended Bayesian Information Criterion (EBIC) with the tuning-parameter set to 0.5 (Epskamp et al., 2018). Given the use of different data sets and the exclusive focus on the first measurement moment of the longitudinal studies, we controlled for the potentially confounding effects of data set and measurement moment. To this end, we calculated and compared models for each subsample and the first and last time points, but found no systematic differences between them.

Next, we investigated the quality of the connections between the nodes. We calculated the following centrality values for both models using the R package qgraph (Epskamp et al., 2012): strength (the degree to which a node correlates with all other nodes in the network, indicating how strongly they are connected), expected influence (the sum of correlation coefficients that are either positive or negative, indicating the degree to which a node

affects other nodes), betweenness (the degree to which a node lies on the shortest path between two other nodes, indicating the control a node has), and closeness (the inverse sum of the shortest distances to all other nodes, indicating indirect connection to all other nodes). Following the recommendations of Epskamp et al. (2018), we estimated the accuracy of edge weights by means of a nonparametric bootstrap procedure with 2,500 samples, and tested the stability of centrality indices using a case-dropping subset bootstrap framework.

Finally, we used the R package blockmodels (Leger et al., 2021) in R 4.0.2 (R Core Team, 2020) to perform stochastic blockmodeling (Holland et al., 1983) to estimate and visualize the final models. Blockmodeling clusters nodes that have similar relationships with all other nodes in the network in the same block, based on their so-called structural equivalence. Each block, or cluster of nodes, thus represents a different role in the network, which provides important information about their significance in relation to other nodes. In our case, this means that stressors, events or mental health outcomes associated with the same cluster play a similar role with respect to other stressors, events or mental health outcomes.

3. Results

3.1. Descriptive statistics

Table 1 shows the items of the DSSYR and their mean ratings. Participants were particularly concerned about their family, not having enough money and feeling uncertain about the future. Table 2 shows the items of the SLE, along with the percentage of participants who endorsed each item. The most commonly reported stressful life events were experiencing a very stressful life event where they thought that they were in great danger (88.0%), witnessing physical violence (87.6%) and witnessing a very stressful life event where they thought that someone else was in great danger (79.4%). Table 3 shows the mean ratings of internalizing symptoms (HSCL) and PTSD symptoms (RATS).

3.2. Network accuracy and stability

Supplementary Figures S1, S2 show the results of the tests for network edge accuracy. Confidence intervals were generally broad and overlapping, indicating that the rank order of edge values should be interpreted with caution. Supplementary Figures S3, S4 show the results of the tests for network stability with a centrality stability coefficient of 0.7 (indicating the estimated maximum number of cases that can be removed from the data to maintain a correlation of at least 0.7 with 95% probability). For model 1, the correlation stability coefficient was 0.129 for betweenness, 0 for closeness and 0.438 for strength. For model 2, it was 0 for betweenness, 0 for closeness and 0.361 for strength. Therefore, the centrality rank order of betweenness and closeness is not stable enough to be interpreted, the centrality difference of strength is the only one that should be interpreted in the two models.

TABLE 3 Endorsement of HSCL and RATS symptoms.

	Mean	SD	Range
HSCL			
Anxiety	1.90	0.55	1.00–3.80
Depression	2.06	0.56	1.00–3.43
RATS			
Avoidance	2.92	0.92	1.00–4.00
Intrusion	2.38	0.73	1.00–4.00
Hyperarousal	2.52	0.86	1.00–4.00

3.3. Network visualization

The visualized network models are presented in Figure 1 (model 1 with the HSCL subscales anxiety and depression) and Figure 2 (model 2 with the RATS subscales avoidance, intrusion and hyperarousal). Different colors indicate different clusters of nodes that share a similar role in the network. Edge weight ranged from 0.008 (ds7 – depression) to 0.346 (anxiety – depression) in model 1 and from 0.014 (ds11 – ds12) to 0.231 (ds1 – ds4) in model 2. Model 1 had a density of 0.927 (246/253 edges) and a mean weight of 0.164 and model 2 had a density of 0.902 (249/276 edges) and a mean weight of 0.118.

There are 5 clusters in model 1 and 4 clusters in model 2. Both figures show that these include two clearly identifiable clusters of material stressors (DSs items 1–4). There also seems to be a cluster of items that represent discrimination and stigmatization (DSs items 5 and 12). Interestingly, a "feeling of being treated unfairly compared to others" (DSs item 12) has a similar role as "feelings of unsafety" (DSs item 5) in relation to other stressors, events or mental health outcomes. Comparing both models, results indicate that while symptoms of anxiety and depression play a distinct role in relation to DSs and SLEs, the PTSD symptoms avoidance, intrusion and hyperarousal do not play a distinct role in this context, as they were assigned the same cluster as all SLEs and some DSs. Finally, the network structures and clusters show that the remaining daily stressors have the same role in the network as stressful life events and post-traumatic stress symptoms, and that they are not necessarily associated with mental health outcomes. However, DSs items 7, 9, 10, and 13 do correlate with depression.

3.4. Centrality indices

Tables 4, 5 show mean centrality values by node type and Figures 3, 4 show the standardized centrality values per item and by node type for model 1 and 2, respectively. Same as the visualization, these strength centrality values indicate that depression, anxiety and daily stressors (particularly material and discrimination stressors) are most strongly connected and play a more central role than other stressors.

4. Discussion

In this study, we set out to explore and add nuance to the concept of DSs for the population of refugees, which is critical to further optimize treatment and care. Below, we will discuss our results with

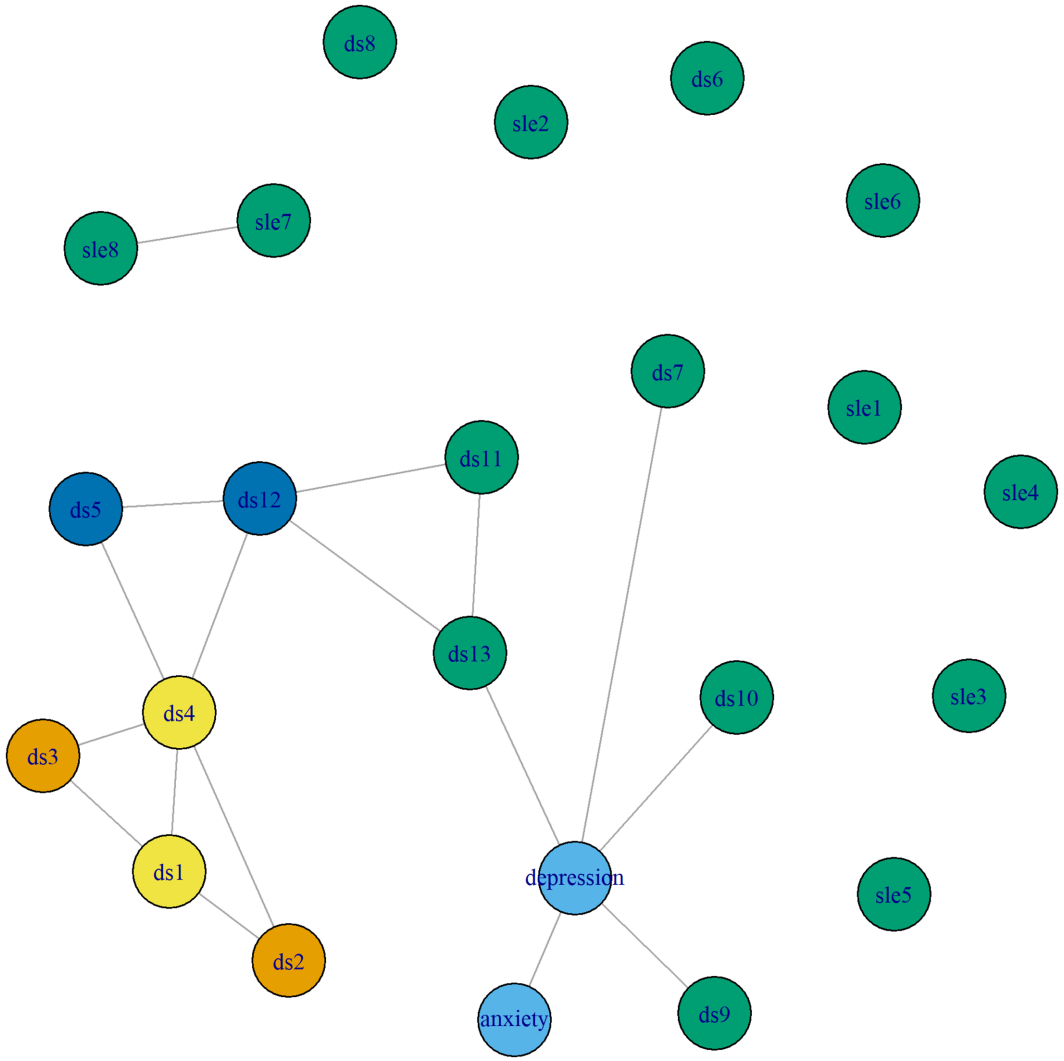

FIGURE 1
Network model 1 with the HSCL subscales anxiety and depression.

regard to how DSs differ from SLEs and how DSs can be grouped in a meaningful way. At the same time, we will discuss some practical and theoretical implications.

The concept of PTSD has proven to be useful for diagnosis and treatment and has led to a proliferation of evidence-based therapies (Bisson and Olff, 2021). Yet, it is still contested and criticized for various reasons. For instance, a number of comorbidities typically accompany PTSD diagnoses, such as somatic symptom disorder, depression or substance abuse (Nesterko et al., 2020; Brady et al., 2021; Im et al., 2022; Kratzer et al., 2022). Further, there is a variety of trauma-related disorders including adjustment disorder and acute stress disorder, as well as others, such as borderline personality disorder, that have been linked to adverse childhood experiences (sexual abuse in particular) (Oral et al., 2016). With special relevance for refugees, the concept of PTSD neglects the role of daily stressors which may perpetuate or trigger trauma reactions due to their chronic nature (Maercker et al., 2018).

Consistent with this critique and the ecological model of refugee distress (Miller and Rasmussen, 2017), our results show that daily stressors generally have a significant relationship with mental health outcomes (specifically depression), but correlate much less with the RATS subscales avoidance, intrusion and hyperarousal. SLEs, on the other hand, are much less connected to anxiety and depression symptoms. The fact that anxiety and depression are related to DSs but not to SLEs suggests that DSs are highly significant for measures of internalizing symptoms. This confirms previous research (Jayawickreme et al., 2017; Mootoo et al., 2019) and goes to show that refugees may suffer from mental health symptoms even when they fail to reach the "trauma threshold" (Van der Kolk, 2000; De Schryver et al., 2015). Although scales measuring post-traumatic stress are essential for individuals with clinical symptom levels, we can deduce that dominant concepts such as PTSD fail to capture the complete range of relevant factors for the study or assessment of mental distress in this population (Miller and Rasmussen, 2017; Villanueva O'Driscoll et al., 2017). Considering this, the way PTSD is conceptualized now is too narrow, and, as Silove et al. (2017) have suggested, the range of mental health outcomes resulting from forced displacement can be viewed as a continuum rather than distinct and arbitrary categories.

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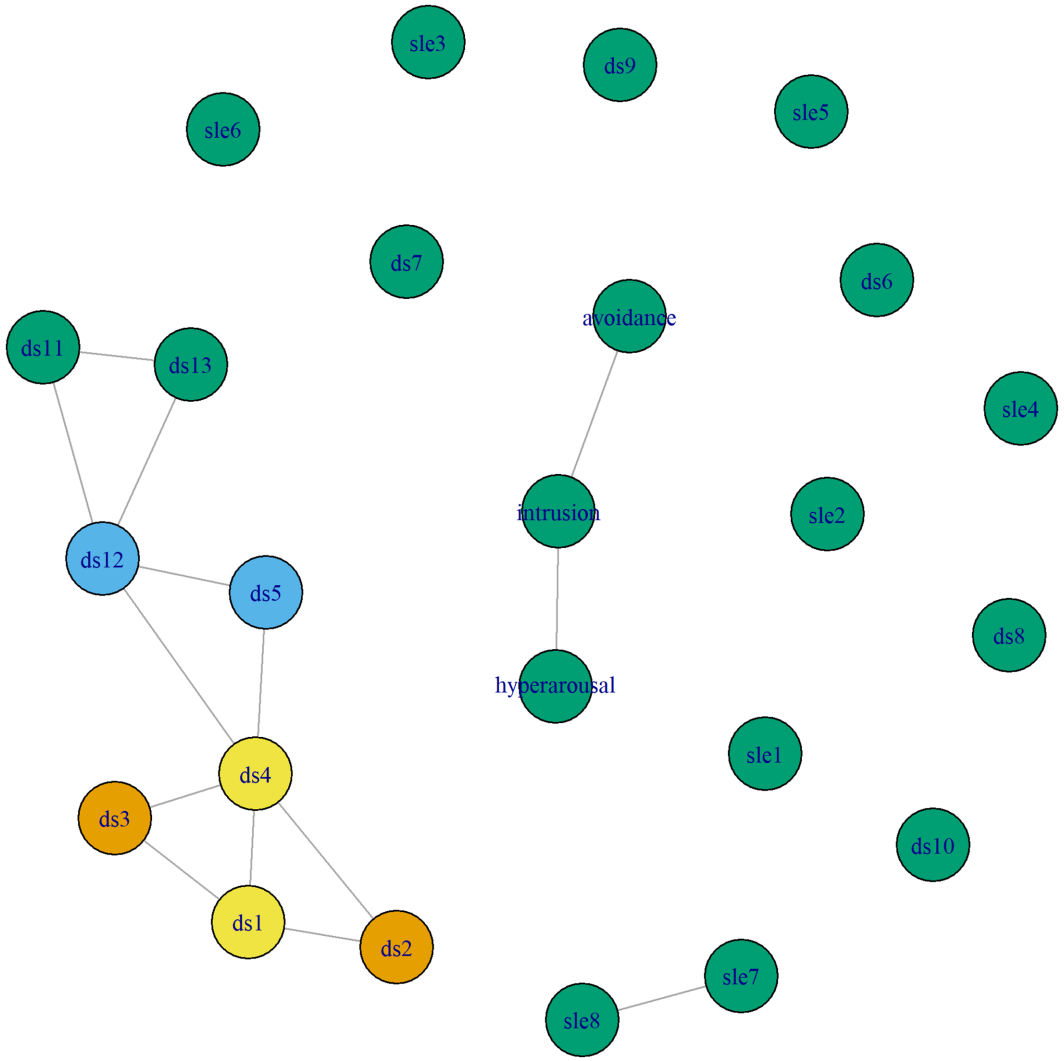

FIGURE 2
Network model 2 with the RATS subscales avoidance, intrusion and hyperarousal.

TABLE 4 Mean centrality values by node type for model 1.

	Betweenness	Closeness	Strength	Expected influence
Depression	0.927	0.911	0.846	0.846
Anxiety	0.000	0.856	0.533	0.533
Daily stressors	0.274	0.758	0.328	0.328
Stressful life events	0.000		0.020	0.020

TABLE 5 Mean centrality values by node type for model 2.

	Betweenness	Closeness	Strength	Expected influence
Avoidance	0.000		0.067	0.067
Hyperarousal	0.000		0.183	0.183
Intrusion	0.083		0.249	0.249
Daily stressors	0.295	0.797	0.304	0.304
Stressful life events	0.000		0.019	0.019

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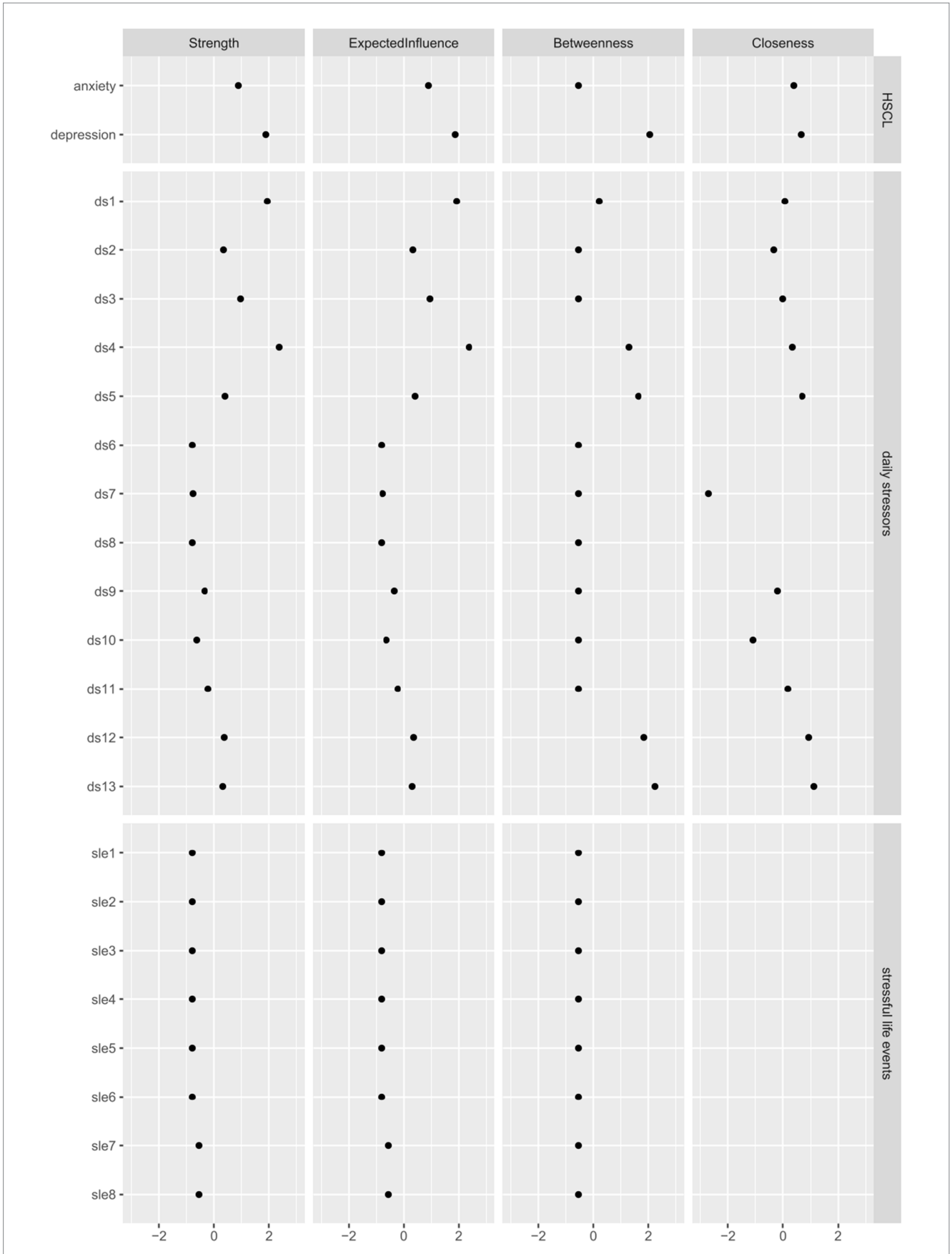

FIGURE 3
Standardized centrality values for model 1.

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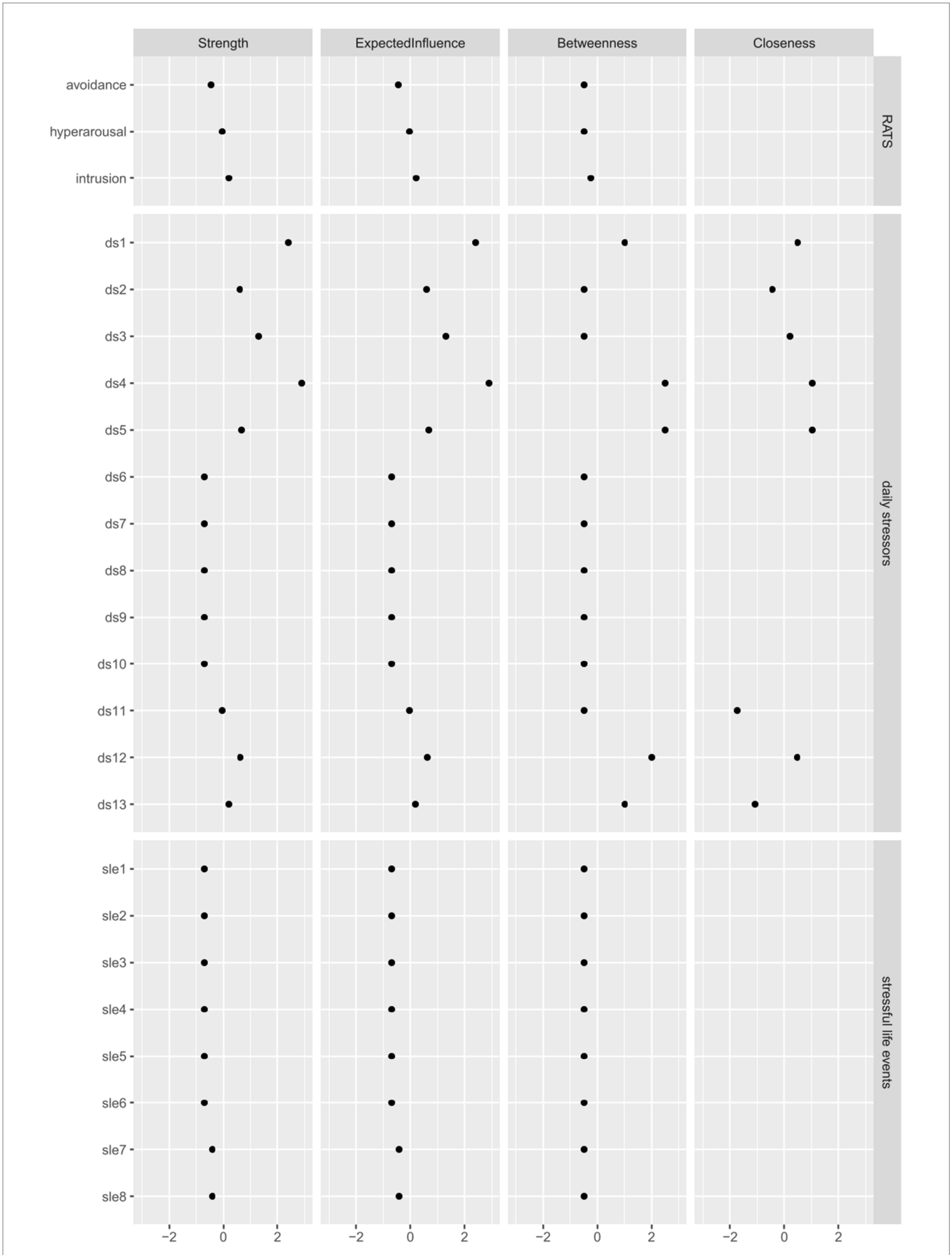

FIGURE 4
Standardized centrality values for model 2.

Specifically, the fact that material (DSs items 1–4) and some discrimination stressors (DSs items 5 and 12) play a distinctive role in relation to other stressors and mental health outcomes as well as their correlation with depression suggest that they play a prominent role with important implications for therapy and treatment. Often, DSs are seen as obstacles for trauma treatment, rather than as a direct source of psychological suffering and not as a focus of intervention in their own right. In this regard, the centrality of these factors underlines the relevance of stepped care approaches and suggests that psychiatric treatment may benefit from the integration of community care and social work (Fazel and Betancourt, 2018).

For practitioners, this implies that psychosocial interventions or transdiagnostic approaches (Murray et al., 2014) are warranted in addition to trauma-focused approaches. Further, the divergence between DSs and SLEs in our results suggests that practitioners need to support specific coping strategies for specific stressors (Behrendt et al., 2023). Depending on the different kinds of stressors at play, refugees may benefit more from particular types and sources of support (Kocijan-Hercigonja et al., 2009). For example, the study by Goodkind et al. (2014) provides an illustration of an intervention tackling social isolation. Finally, tackling daily stressors directly, including the precarious living conditions in both transit and settlement situations, is key to improve the mental health of refugees.

The second aim of this study was to investigate how different types of daily stressors can be grouped meaningfully. In line with the scale measuring post-migration stress in adult refugees developed recently by Malm et al. (2020), we found a cluster of material stressors, as well as a cluster of discrimination stressors. Our finding that discrimination stressors formed a distinctive category also aligns with the results of Keles et al. (2017), who describe a difference between daily stressors in the general population (e.g., interpersonal conflicts) and stressors that are specific to the migration and acculturation context (e.g., discrimination). They suggest that the latter have a direct effect on depression in UYRs, whereas the relationship between general daily stress and depression is more reciprocal. Further, the fact that in our network model, experiencing discrimination has the same role as feeling unsafe further illustrates the drastic consequences of social exclusion on mental health (Saasa et al., 2021).

Our items "worries about the family," as well as "feeling bored" and "uncertainty about the future" all correlated strongly with depression. They correspond with the dimensions "family and home country concerns" and "social strain" in the scale developed by Malm et al. (2020) and with the category "stressors related to the asylum process and visa status" in the scale used by Carlsson and Sonne (2018). Their heightened significance makes sense considering the impact of family support and legal status documented by previous research (Jakobsen et al., 2017; Derluyn and Ang, 2020). Arguably, these items have a social dimension in common and might therefore be grouped as social stressors, which have also been found to be central factors in the study by Jayawickreme et al. (2017). Whereas they were not clustered as a distinctive group in our network model, the clusters social stressors and material stressors did become apparent in studies using factor analysis and our findings seem to validate these previous attempts of categorizing DSs (Malm et al., 2020; Behrendt et al., 2022; Pfeiffer et al., 2022). Therefore, scales measuring DSs need to comprise subscales for material stressors and social stressors, specifically social exclusion stressors.

4.1. Limitations

Some limitations deserve our attention. The inclusion of diverging (sub)samples provided a sufficiently large sample to conduct a network analysis (Epskamp et al., 2018; Schönfelder et al., 2021). However, the diverse settings in which our participants were recruited complicate a straightforward analysis, as participants may have experienced different kinds and intensities of DSs in different study countries. Further, we may not have been able to detect DSs that occur after arrival in a host country (e.g., DSs item 8 "difficulties in obtaining legal documents") as many participants were still on the move. Similarly, there was limited assessment of DSs pre- and peri-migration in some subsamples. These missing values may have skewed our results as they may have concerned a particularly vulnerable subgroup of our sample. In contrast, it is possible that some stressful life events showed little variance because of a ceiling effect. Other confounding variables that are closely linked to DSs but were not regarded in this study include legal status and social support, e.g., whether or not participants had contact with their parents. Another point of attention is that some items that we had added in the ChildMove study had to be omitted here in order to allow for the inclusion of the additional dataset. Some of these items turned out to be quite highly reported (e.g., "difficulties to communicate with others due to the foreign language"). The language barrier is therefore a potentially important DS. Related to this, the participants' cultural background and cultural fit with the host society may have implications for their perception of DSs. Future studies may remedy these shortcomings by collecting more data to compare different study contexts and control for these variables or selecting more homogeneous samples. Finally, the field may benefit from an analysis of the content overlap of the scales we used, similar to that examined by Fried et al. (2022) in the context of depression.

5. Conclusion

This study is one of the first to employ network analysis to study the concept of DSs and has allowed us to confirm and expand previous studies (De Schryver et al., 2015; Rasmussen et al., 2018; Mootoo et al., 2019). Our results legitimize previous findings and may be interpreted as evidence that while methodologically controversial approaches such as factor analysis can be useful to explore the nature and possible categorization of DSs, using a network approach offers a viable way forward. Although more research is needed to further flesh out the various subgroups, our study suggests that practitioners, policy-makers and researchers need to direct their attention to both material and social determinants of refugees' mental health. This is particularly relevant against the background of negative political attitudes toward refugees in host countries and a deteriorating human rights situation in Europe (Council of Europe, 2019). Next to improving the precarious living conditions for this population, practitioners and policy-makers

alike urgently need to tackle racism and promote social inclusion and support.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Committee of Ethics in Research at the University of West Attica, the Hellenic Data Protection Authority, the Italian National Research Council's Committee on Research Ethics and Bioethics and the Ethics committee of the Faculty of Psychology and Educational Sciences at Ghent University. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

MB, AR, HG, and ID contributed to conception and design of the study. MB, MV, MR, SA, and OU collected the data. MB organized the database, performed the statistical analysis, and wrote the first draft of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1134667/full#supplementary-material

SUPPLEMENTARY FIGURE S1
Results of network edge accuracy analyses for model 1.

SUPPLEMENTARY FIGURE S2
Results of network edge accuracy analyses for model 2.

SUPPLEMENTARY FIGURE S3
Results of network stability analyses for model 1.

SUPPLEMENTARY FIGURE S4
Results of network stability analyses for model 2.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders. 5th ed.* Washington, DC: American Psychiatric Association.

Bamford, J., Fletcher, M., and Leavey, G. (2021). Mental health outcomes of unaccompanied refugee minors: a rapid review of recent research. *Curr. Psychiatry Rep.* 23:46. doi: 10.1007/s11920-021-01262-8

Bean, T., Derluyn, I., Eurelings-Bontekoe, E., Broekaert, E., and Spinhoven, P. (2006). Validation of the multiple language versions of the reactions of adolescents to traumatic stress questionnaire. *J. Trauma. Stress.* 19, 241–255. doi: 10.1002/jts.20093

Bean, T., Derluyn, I., Eurelings-Bontekoe, E., Broekaert, E., and Spinhoven, P. (2007). Validation of the multiple language versions of the Hopkins symptom Checklist-37 for refugee adolescents. *Adolescence* 42, 51–71.

Bean, T., Eurelings-Bontekoe, E., Derluyn, I., and Spinhoven, P. (2004). *Stressful life events (SLE): User's manual.* Oegstgeest, Netherlands: Stichting Centrum '45.

Behrendt, M., Lietaert, I., Bal, S., and Derluyn, I. (2023). Coping strategies of unaccompanied refugee minors shortly after arrival in Belgium. *Transcult. Psychiatry*, 1–13. doi: 10.1177/13634615231165138

Behrendt, M., Lietaert, I., and Derluyn, I. (2021). Continuity and social support: a longitudinal study of unaccompanied refugee minors' care networks. *J. Immigr. Refug. Stud.* 20, 398–412. doi: 10.1080/15562948.2021.1930322

Behrendt, M., Pfeiffer, E., Devlieger, I., Adeyinka, S., Rota, M., Uzureau, O., et al. (2022). The impact of daily stressors on unaccompanied young refugees' mental health: a longitudinal study. *Am. J. Orthopsychiatry* 92, 681–691. doi: 10.1037/ort0000644

Birkeland, M. S., Greene, T., and Spiller, T. R. (2020). The network approach to posttraumatic stress disorder: a systematic review. *Eur. J. Psychotraumatol.* 11, 1–14. doi: 10.1080/20008198.2019.1700614

Bisson, J. I., and Olff, M. (2021). Prevention and treatment of PTSD: the current evidence base. *Eur. J. Psychotraumatol.* 12, 1–4. doi: 10.1080/20008198.2020.1824381

Blackmore, R., Boyle, J. A., Fazel, M., Ranasinha, S., Gray, K. M., Fitzgerald, G., et al. (2020). The prevalence of mental illness in refugees and asylum seekers: a systematic review and meta-analysis. *PLoS Med.* 17:e1003337. doi: 10.1371/journal.pmed.1003337

Brady, K. T., McCauley, J. L., and Back, S. E. (2021). "The comorbidity of post-traumatic stress disorder (PTSD) and substance use disorders" in *Textbook of addiction treatment: International perspectives*. eds. N. El-Guebaly, G. Carrà, M. Galanter and A. M. Baldacchino (Cham: Springer International Publishing), 1327–1339.

Carlsson, J., and Sonne, C. (2018). "Mental health, pre-migratory trauma and post-migratory stressors among adult refugees" in *Mental health of refugee and conflict-affected populations*. eds. Morina, N and Nickerson, A (Cham: Springer), 15–35.

Council of Europe (2019). A distress call for human rights. The widening gap in migrant protection in the Mediterranean. Available at: https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/LIBE/DV/2021/03-15/p7.2019recommendationonmigrantsintheMediterranean_EN.pdf

De Schryver, M., Vindevogel, S., Rasmussen, A. E., and Cramer, A. O. J. (2015). Unpacking constructs: a network approach for studying war exposure, daily stressors and post-traumatic stress disorder. *Front. Psychol.* 6, 1–10. doi: 10.3389/fpsyg.2015.01896

Derluyn, I., and Ang, W. (2020). Family relationships and intra-family expectations in unaccompanied young refugees. In HaeneL. De and C. Rousseau (Eds.), *Working with refugee families: trauma and exile in family relationships* 103–116. Cambridge: Cambridge University Press

Derluyn, I., Orsini, G., Adeyinka, S., Behrendt, M., Rota, M., Uzureau, O., et al. (2022). Impact of flight experiences on the mental health of unaccompanied minors on the move. The ChildMove Project, Ghent University. Available at: https://childmove.eu

Derluyn, I., Orsini, G., Verhaeghe, F., Elhaj, R., Lietaert, I., and Pfeiffer, E. (2023). The impact of trauma and daily hardships on the mental health of unaccompanied refugee minors detained in Libya. *BJPsych Open* 9:E8. doi: 10.1192/bjo.2022.622

Derluyn, I., and Vervliet, M. (2012). "The wellbeing of unaccompanied refugee minors" in *Health inequalities and risk factors among migrants and ethnic minorities*. eds. D. Ingleby, A. Krasnik, V. Lorant and O. Razum (Antwerpen, België; Appeldoorn, Nederland: Garant), 95–109.

Ehntholt, K. A., Trickey, D., Harris Hendriks, J., Chambers, H., Scott, M., and Yule, W. (2018). Mental health of unaccompanied asylum-seeking adolescents previously held in British detention centres. *Clin. Child Psychol. Psychiatry* 23, 238–257. doi: 10.1177/1359104518758839

El-Awad, U., Fathi, A., Vasileva, M., Petermann, F., and Reinelt, T. (2021). Acculturation orientations and mental health when facing post-migration stress: differences between unaccompanied and accompanied male middle eastern refugee adolescents, first-and second-generation immigrant and native peers in Germany. *Int. J. Intercult. Relat.* 82, 232–246. doi: 10.1016/j.ijintrel.2021.04.002

Epskamp, S., Borsboom, D., and Fried, E. I. (2018). Estimating psychological networks and their accuracy: a tutorial paper. *Behav. Res. Methods* 50, 195–212. doi: 10.3758/s13428-017-0862-1

Epskamp, S., Cramer, A. O., Waldorp, L. J., Schmittmann, V. D., and Borsboom, D. (2012). qgraph: network visualizations of relationships in psychometric data. *J. Stat. Softw.* 48, 1–18. doi: 10.18637/jss.v048.i04

Fazel, M., and Betancourt, T. S. (2018). Preventive mental health interventions for refugee children and adolescents in high-income settings. *Lancet Child Adolesc. Health* 2, 121–132. doi: 10.1016/S2352-4642(17)30147-5

Fried, E. I., Flake, J. K., and Robinaugh, D. J. (2022). Revisiting the theoretical and methodological foundations of depression measurement. *Nat. Rev. Psychol.* 1, 358–368. doi: 10.1038/s44159-022-00050-2

Goodkind, J. R., Hess, J. M., Isakson, B., LaNoue, M., Githinji, A., Roche, N., et al. (2014). Reducing refugee mental health disparities: a community-based intervention to address postmigration stressors with African adults. *Psychol. Serv.* 11, 333–346. doi: 10.1037/a0035081

Hajak, V. L., Sardana, S., Verdeli, H., and Grimm, S. (2021). A systematic review of factors affecting mental health and well-being of asylum seekers and refugees in Germany. *Front. Psych.* 12:643704. doi: 10.3389/fpsyt.2021.643704

Hevey, D. (2018). Network analysis: a brief overview and tutorial. *Health Psychol. Behav. Med.* 6, 301–328. doi: 10.1080/21642850.2018.1521283

Höhne, E., van der Meer, A. S., Kamp-Becker, I., and Christiansen, H. (2020). A systematic review of risk and protective factors of mental health in unaccompanied minor refugees. *Eur. Child Adolesc. Psychiatry* 31, 1–15. doi: 10.1007/s00787-020-01678-2

Holland, P. W., Laskey, K. B., and Leinhardt, S. (1983). Stochastic blockmodels: first steps. *Soc. Networks* 5, 109–137. doi: 10.1016/0378-8733(83)90021-7

Im, H., Swan, L. E., Warsame, A. H., and Isse, M. M. (2022). Risk and protective factors for comorbidity of PTSD, depression, and anxiety among Somali refugees in Kenya. *Int. J. Soc. Psychiatry* 68, 134–146. doi: 10.1177/0020764020978685

IOM (2019). Manual on community-based mental health and psychosocial support in emergencies and displacement. Available at: https://www.iom.int/mhpsed

Jakobsen, M., Meyer DeMott, M. A., Wentzel-Larsen, T., and Heir, T. (2017). The impact of the asylum process on mental health: a longitudinal study of unaccompanied refugee minors in Norway. *BMJ Open* 7:e015157. doi: 10.1136/bmjopen-2016-015157

Jayawickreme, N., Mootoo, C., Fountain, C., Rasmussen, A., Jayawickreme, E., and Bertuccio, R. F. (2017). Post-conflict struggles as networks of problems: a network analysis of trauma, daily stressors and psychological distress among Sri Lankan war survivors. *Soc. Sci. Med.* 190, 119–132. doi: 10.1016/j.socscimed.2017.08.027

Jensen, T. K., Skar, A. S., Andersson, E. S., and Birkeland, M. S. (2019). Long-term mental health in unaccompanied refugee minors: pre- and post-flight predictors. *Eur. Child Adolesc. Psychiatry* 28, 1671–1682. doi: 10.1007/s00787-019-01340-6

Keles, S., Idsøe, T., Friborg, O., Sirin, S., and Oppedal, B. (2017). The longitudinal relation between daily hassles and depressive symptoms among unaccompanied refugees in Norway. *J. Abnorm. Child Psychol.* 45, 1413–1427. doi: 10.1007/s10802-016-0251-8

Kocijan-Hercigonja, D., Rijavec, M., Marusic, A. N. A., and Hercigonja, V. (2009). Coping strategies of refugee, displaced, and non-displaced children in a war area. *Nord. J. Psychiatry* 52, 45–50. doi: 10.1080/080394898422562

Kratzer, L., Knefel, M., Haselgruber, A., Heinz, P., Schennach, R., and Karatzias, T. (2022). Co-occurrence of severe PTSD, somatic symptoms and dissociation in a large sample of childhood trauma inpatients: a network analysis. *Eur. Arch. Psychiatry Clin. Neurosci.* 272, 897–908. doi: 10.1007/s00406-021-01342-z

Leger, J., Barbillon, P., and Chiquet, J. (2021). Blockmodels: latent and stochastic block model estimation by a 'V-EM' algorithm. R package version. Available at: https://CRAN.R-project.org/package=blockmodels

Lorenzen, M. (2018). The mixed motives of unaccompanied child migrants from Central America's northern triangle. *J. Migr. Hum. Secur.* 5, 744–767. doi: 10.1177/233150241700500402

Maercker, A., Heim, E., and Kirmayer, L. J. (2018). *Cultural clinical psychology and PTSD*. Göttingen, Germany: Hogrefe Verlag

Malm, A., Tinghög, P., Narusyte, J., and Saboonchi, F. (2020). The refugee post-migration stress scale (RPMS) – development and validation among refugees from Syria recently resettled in Sweden. *Confl. Heal.* 14, 2–12. doi: 10.1186/s13031-019-0246-5

Miller, K. E., and Rasmussen, A. (2010). War exposure, daily stressors, and mental health in conflict and post-conflict settings: bridging the divide between trauma-focused and psychosocial frameworks. *Soc. Sci. Med.* 70, 7–16. doi: 10.1016/j.socscimed.2009.09.029

Miller, K. E., and Rasmussen, A. (2014). War experiences, daily stressors, and mental health five years on: elaborations and future directions. *Intervention* 12, 33–42. doi: 10.1097/WTF.0000000000000066

Miller, K. E., and Rasmussen, A. (2017). The mental health of civilians displaced by armed conflict: an ecological model of refugee distress. *Epidemiol. Psychiatr. Sci.* 26, 129–138. doi: 10.1017/S2045796016000172

Mootoo, C., Fountain, C., and Rasmussen, A. (2019). Formative psychosocial evaluation using dynamic networks: trauma, stressors, and distress among Darfur refugees living in Chad. *Confl. Heal.* 13:30. doi: 10.1186/s13031-019-0212-2

Morina, N., Akhtar, A., Barth, J., and Schnyder, U. (2018). Psychiatric disorders in refugees and internally displaced persons after forced displacement: a systematic review. *Front. Psych.* 9:433. doi: 10.3389/fpsyt.2018.00433

Morvan, Y., Fried, E. I., and Chevance, A. (2020). Network modeling in psychopathology: hopes and challenges. *L'Encephale* 46, 1–2. doi: 10.1016/j.encep.2020.01.001

Müller, L. R. F., Gossmann, K., Hartmann, F., Buter, K. P., Rosner, R., and Unterhitzenberger, J. (2019). 1-year follow-up of the mental health and stress factors in asylum-seeking children and adolescents resettled in Germany. *BMC Public Health* 19:908. doi: 10.1186/s12889-019-7263-6

Murray, L. K., Dorsey, S., Haroz, E., Lee, C., Alsiary, M. M., Haydary, A., et al. (2014). A common elements treatment approach for adult mental health problems in low- and middle-income countries. *Cogn. Behav. Pract.* 21, 111–123. doi: 10.1016/j.cbpra.2013.06.005

Nesterko, Y., Jäckle, D., Friedrich, M., Holzapfel, L., and Glaesmer, H. (2020). Prevalence of post-traumatic stress disorder, depression and somatisation in recently arrived refugees in Germany: an epidemiological study. *Epidemiol. Psychiatr. Sci.* 29:e40. doi: 10.1017/S2045796019000325

Netland, M. (2005). Event-list construction and treatment of exposure data in research on political violence. *J. Trauma. Stress.* 18, 507–517. doi: 10.1002/jts.20059

Neuner, F. (2010). Assisting war-torn populations--should we prioritize reducing daily stressors to improve mental health? Comment on Miller and Rasmussen. *Soc. Sci. Med.* 71, 1381–1384. doi: 10.1016/j.socscimed.2010.06.030

O'Higgins, A., Ott, E. M., and Shea, M. W. (2018). What is the impact of placement type on educational and health outcomes of unaccompanied refugee minors? A systematic review of the evidence. *Clin. Child. Fam. Psychol. Rev.* 21, 354–365. doi: 10.1007/s10567-018-0256-7

Oral, R., Ramirez, M., Coohey, C., Nakada, S., Walz, A., Kuntz, A., et al. (2016). Adverse childhood experiences and trauma informed care: the future of health care. *Pediatr. Res.* 79, 227–233. doi: 10.1038/pr.2015.197

Pfeiffer, E., Behrendt, M., Adeyinka, S., Devlieger, I., Rota, M., Uzureau, O., et al. (2022). Traumatic events, daily stressors and posttraumatic stress in unaccompanied young refugees during their flight: a longitudinal cross-country study. *Child Adolesc. Psychiatry Ment. Health* 16, 26–12. doi: 10.1186/s13034-022-00461-2

Ponnamperuma, T., and Nicolson, N. A. (2018). The relative impact of traumatic experiences and daily stressors on mental health outcomes in Sri Lankan adolescents. *J. Trauma. Stress.* 31, 487–498. doi: 10.1002/jts.22311

R Core Team (2020). R: A language and environment for statistical computing. R Foundation for Statistical Computing. Vienna, Austria. Available at: https://www.R-project.org/

Rasmussen, A., and Jayawickreme, N. (2020). Introduction to the special collection: developing valid psychological measures for populations impacted by humanitarian disasters. *Confl. Heal.* 14:10. doi: 10.1186/s13031-020-00260-6

Rasmussen, A., Miller, K. E., and Verkuilen, J. (2018). "Conceptualization and measurement of traumatic events among refugees and other war-affected populations" in *Mental health of refugee and conflict-affected populations*. eds. N. Morina and A. Nickerson (Cham: Springer)

Riley, A., Varner, A., Ventevogel, P., Taimur Hasan, M. M., and Welton-Mitchell, C. (2017). Daily stressors, trauma exposure, and mental health among stateless Rohingya refugees in Bangladesh. *Transcult. Psychiatry* 54, 304–331. doi: 10.1177/1363461517705571

Saasa, S., Okech, D., Choi, Y. J., Nackerud, L., and Littleton, T. (2021). Social exclusion, mental health, and social well-being among African immigrants in the United States. *Int. Soc. Work*. 65, 787–803. doi: 10.1177/0020872820963425

Schmittmann, V. D., Cramer, A. O., Waldorp, L. J., Epskamp, S., Kievit, R. A., and Borsboom, D. (2013). Deconstructing the construct: a network perspective on psychological phenomena. *New Ideas Psychol.* 31, 43–53. doi: 10.1016/j.newideapsych.2011.02.007

Schönfelder, A., Rath, D., Forkmann, T., Paashaus, L., Lucht, L., Teismann, T., et al. (2021). Child abuse and suicidality in the context of the interpersonal psychological theory of suicide: a network analysis. *Br. J. Clin. Psychol.* 60, 425–442. doi: 10.1111/bjc.12293

Seglem, K. B., Oppedal, B., and Roysamb, E. (2014). Daily hassles and coping dispositions as predictors of psychological adjustment. *Int. J. Behav. Dev.* 38, 293–303. doi: 10.1177/0165025414520807

Sierau, S., Schneider, E., Nesterko, Y., and Glaesmer, H. (2019). Alone, but protected? Effects of social support on mental health of unaccompanied refugee minors. *Eur. Child Adolesc. Psychiatry* 28, 769–780. doi: 10.1007/s00787-018-1246-5

Silove, D., Ventevogel, P., and Rees, S. (2017). The contemporary refugee crisis: an overview of mental health challenges. *World Psychiatry* 16, 130–139. doi: 10.1002/wps.20438

UNHCR, Unicef, and IOM. (2019). Refugee and migrant children in Europe. Overview of Trends. January–December 2018. Available at: https://eea.iom.int/sites/default/files/publication/document/Refugee_Migrant_Children_Europe_Overview_Jan-Dec_2018_IOM-UNHCR-UNICEF.pdf

Van der Kolk, B. (2000). Posttraumatic stress disorder and the nature of trauma. *Dialogues Clin. Neurosci.* 2, 7–22. doi: 10.31887/DCNS.2000.2.1/bvdkolk

Vervliet, M. (2013). The trajectories of unaccompanied refugee minors: Aspirations, agency and psychosocial well-being. Doctoral dissertation, Ghent University, Belgium.

Vervliet, M., Lammertyn, J., Broekaert, E., and Derluyn, I. (2014). Longitudinal follow-up of the mental health of unaccompanied refugee minors. *Eur. Child Adolesc. Psychiatry* 23, 337–346. doi: 10.1007/s00787-013-0463-1

Villanueva O'Driscoll, J., Serneels, G., and Imeraj, L. (2017). A file study of refugee children referred to specialized mental health care: from an individual diagnostic to an ecological perspective. *Eur. Child Adolesc. Psychiatry* 26, 1331–1341. doi: 10.1007/s00787-017-0981-3

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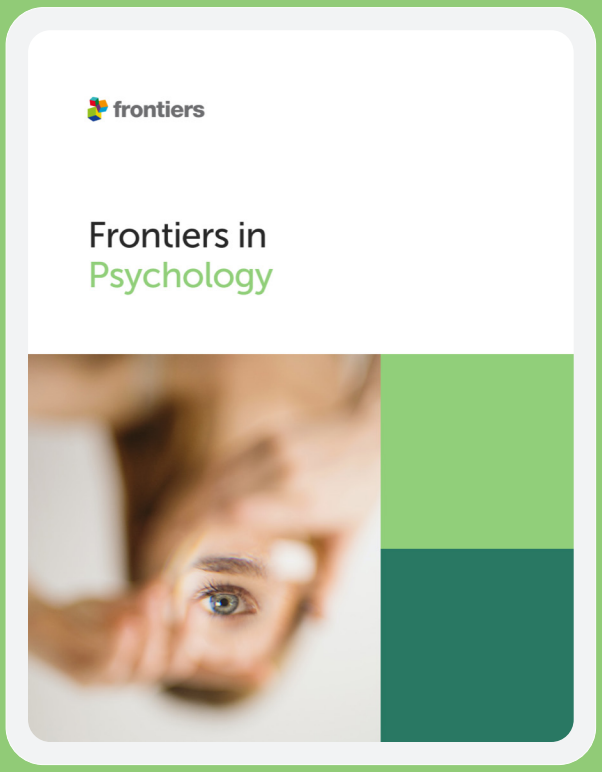

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