ORIGINAL RESEARCH ARTICLE



The Refugee and Immigrant Core Stressors Toolkit (RICST): Understanding the Multifaceted Needs of Refugee and Immigrant Youth and Families Through a Four Core Stressors Framework

Seetha H. Davis¹ · Jeffrey P. Winer¹ · Sarah C. Gillespie² · Luna A. Mulder¹

Received: 13 November 2020 / Revised: 13 June 2021 / Accepted: 30 June 2021 / Published online: 9 July 2021 © The Author(s), under exclusive licence to Springer Nature Switzerland AG 2021

Abstract

Research indicates that refugee and immigrant youth commonly face four core stressors during resettlement in a new country and culture: trauma, acculturative stress, resettlement stress, and isolation. This Four Core Stressors framework can be used to educate providers about these populations' unique needs and support assessment of relevant socioecological factors influencing health. To facilitate education, training, and dissemination of this framework and complement existing provider resources, we developed the Refugee & Immigrant Core Stressors Toolkit (RICST), a free, web-based toolkit that provides an overview of the Four Core Stressors framework, assessment questions across the four domains, scaffolding to identify needs and points of triage, and recommended interventions. Public hosting of the RICST via REDCap began in March 2018. In addition to the toolkit, users are prompted to provide location of service delivery, intended purpose of use, and interface feedback. Between March 2018 and October 2020, the RICST was used over 2300 times across 6 continents. Most providers used the toolkit to learn more about the needs of refugee and immigrant youth in general, and several noted that it is a valuable educational tool for staff unfamiliar with these populations. Open-ended qualitative feedback indicated high usability. Amidst historically high levels of forced displacement, tools to support provider effectiveness in working with these populations are increasingly needed. The RICST shows promise as an educational, assessment, and treatment-planning tool for providers working with refugee and immigrant families globally. Future directions include location-specific resource mapping and culture-specific intervention strategies.

Keywords Refugee · Immigrant · Mental health · Provider education

Globally, rates of migration and forced displacement are at a historic high with almost 80 million forcibly displaced people, 40% of whom are children (UNHCR, 2020). Forced displacement may be related to war or armed conflict; persecution based on identity, political affiliation, or social status; climate change; and/or other factors related to humanitarian crisis. Such experiences—as well as the migration journey itself—may lead refugee and immigrant youth to encounter more potentially traumatic events and adversity than youth of other populations. Past research indicates that refugee and immigrant youth often have unique mental health and healthcare needs, compared to youth of other backgrounds,

- Seetha H. Davis seetha.davis@childrens.harvard.edu
- Trauma and Community Resilience Center, Boston Children's Hospital, Boston, MA, USA
- Institute of Child Development, University of Minnesota, Minneapolis, MN, USA

including more traumatic exposures and higher rates of psychological distress (Betancourt et al., 2017; Ellis et al., 2011; Kliewer et al., 2020; Trentacosta et al., 2016; Yayan et al., 2020).

Sources of stress experienced by forcibly displaced youth are not limited to pre-resettlement trauma and often include daily stressors in the resettlement context, including discrimination and bullying (Beiser & Hou, 2016; Ellis et al., 2008; Miller & Rasmussen, 2017). Discrimination, alienation, and lack of social support are commonly reported by refugee and immigrant youth and have been linked to greater psychological distress and reduced coping capacity (Correa-Velez et al., 2010; Ellis et al., 2008; Lindencrona et al., 2008). Factors related to resettlement itself, such as access to food, housing, and employment, and economic or financial strain, are also linked to stress and mental health disorders for refugee populations, especially those living in Western countries (Aragona et al., 2012; Lindencrona et al., 2008). In addition to social



and environmental stressors, for refugee and immigrant children, acculturative stress (e.g., the challenges associated with learning a new language and norms of a new culture) is linked to child psychosocial difficulties, especially in cases of caregiver-child conflict or caregiver distress (Betancourt et al., 2015; Joyce & Liamputtong, 2017; Sim et al., 2018).

This complex network of stressors—and the diverse service sectors needed to provide effective support—can make assessment, treatment planning, and triage complicated for providers seeking to support refugee and immigrant youth and families. Many providers serving refugee and immigrant youth report that they feel ill-equipped to assess and respond to these youth's psychosocial and behavioral health needs (Forrest-Bank et al., 2019; Weissman et al., 2005). Additionally, refugee youth themselves commonly report frustration with providers' lack of understanding of their unique sources of stress and resilience (e.g., O'Higgins, 2012). To deliver effective care, providers must collaborate with other service sectors and with communities, as coordinating with service providers, community members, and key stakeholders across multiple sectors (e.g., medical, legal, mental health, case management) is critical to engaging families in treatment and sustaining service delivery (Ellis et al., 2013; Fazel, 2018; Ho et al., 2019; Pollard et al., 2014; Schwartz et al., 2012). All of this work must then be delivered and sustained through trauma-informed, culturally responsive strategies across all levels of service provision (Ellis et al., 2019; Hook et al., 2013, 2017).

To support providers in navigating this complexity, enhance provider and system effectiveness in serving refugee and immigrant youth, and promote equity in quality of mental healthcare for refugee and immigrant populations, psychosocial assessment and service planning may be best organized using the evidence-informed Four Core Stressors framework (Abdi, 2018; Ellis et al., 2019). The Four Core Stressors framework posits that refugee and immigrant youth commonly face four core stressors in resettlement: traumatic stress, acculturative stress, resettlement stress, and isolation stress (see Fig. 1). Interventions that assess and address stress across these four domains—not only trauma or clinical symptoms—may significantly improve mental health outcomes and psychosocial functioning among refugee and immigrant youth (Cardeli, Baldwin et al., 2020; Kaplin et al., 2019; Tyrer & Fazel, 2014). Providers and systems working with (or aspiring to work with) refugee and immigrant youth may find that integration of the Four Core Stressors framework, and associated tools, into their prevention and intervention programming improves provider effectiveness, comfort, and confidence in serving refugee and immigrant youth and families.

Importantly, when considering ways to support providers caring for refugee and immigrant youth, it is necessary to consider *where* those providers are working. Although many refugee and immigrant youth reside in Western countries such as Germany, Canada, or the US, the vast majority, about 85% of forcibly displaced people globally,

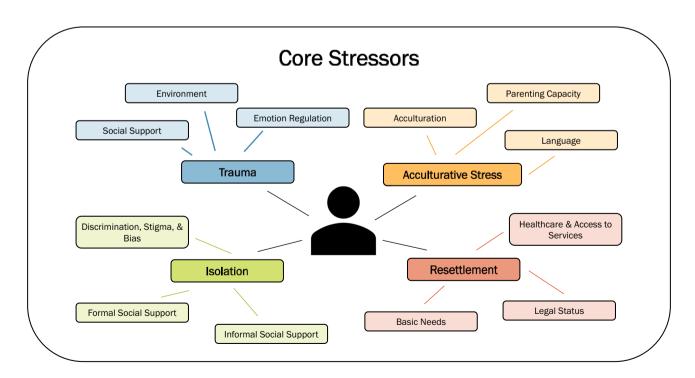


Fig. 1 The Four Core Stressors framework



live in low- or middle-income countries (LMICs; UNHCR, 2020). With the majority of refugees and immigrants living in LMICs, the systems that frequently care for migrant populations often lack capacity to support and/or train providers in caring for special populations with unique experiences. Thus, as global mental health implementation science research indicates, there is a demonstrated need for resources and tools that are low-cost, time-efficient, scalable, and easily accessible in order to reach providers in LMICs and to build system capacity to care for refugee and immigrant youth (Betancourt & Chambers, 2016; Chambers et al., 2020; Wainberg et al., 2017).

Existing Resources for Building Provider Effectiveness to Serve Refugee and Immigrant Youth and Families

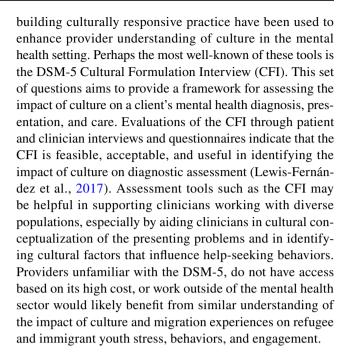
Expert-Led Trainings

Many existing resources for health professionals serving global migrant populations seek to build provider effectiveness through face-to-face trainings (traditionally held in person, but increasingly delivered virtually). These training programs are growing quickly and demonstrate improvements in both provider cultural competence and ethnic minority patient satisfaction with services (Govere & Govere, 2016; Lie et al., 2011; McGregor et al., 2019), but the evidence base for their efficacy remains sparse, as program evaluations often understandably lack control groups (Govere & Govere, 2016; McGregor et al., 2019).

One exemplar provider training program that presents promising results is the Cross-Cultural Trauma-Informed Care (CC-TIC) training, which supports providers in learning about refugee and immigrant communities and building skills in cultural humility, trauma-informed care, and community-based intervention delivery (Im & Swan, 2020). Evaluation of training outcomes demonstrates improvements in provider knowledge and cultural humility in serving refugee populations through collaborative mechanisms (Im & Swan, 2020). For providers who do not have access to the full 2-day CC-TIC training—including those who reside outside the U.S.—or lack the time to dedicate to such resources (e.g., providers for whom refugee and immigrant youth comprise a small portion of their caseloads), more freely available, less time-intensive tools are also necessary to augment provider effectiveness.

Non-Web-Based Interview and Assessment Tools

In addition to structured training programs, provideradministered assessment and clinical interview tools aimed at



Freely Available Web-Based Tools

Freely available online tools are understandably the most easily available resources to providers, and such tools have become even more important for service systems since the COVID-19 pandemic (Kimber et al., 2020). To date, there are multiple web-based applications and resources to directly support refugee and immigrant mental health, including RefAid, FindHello, AsylumDK, Settle In, and Refugee Buddy. Step by Step, an online mental health intervention funded by the World Health Organization, was included in a pilot study with Syrian refugees in Germany and demonstrated the feasibility and promise of using digital interventions with refugee populations (Burchert et al., 2019). The majority of available resources focus on direct use by refugee and immigrant individuals (usually adults), with few focusing specifically on building service provider effectiveness in serving refugee and immigrant youth.

Several existing online platforms offer free didactic resources that aim to educate service providers about refugee and immigrant youth. Free, web-accessible written resources, e.g., J.M. Rey's IACAPAP e-Textbook of Child and Adolescent Mental Health, include background information and mental health concerns specific to forcibly displaced populations that is geared toward providers working in low-resource settings globally (Pacione et al., 2012). Switchboard, an excellent technical assistance platform funded through the US Office of Refugee Resettlement, hosts e-learning modules, resource libraries, and individualized technical assistance (e.g., trainings, webinars, etc.) to support service providers caring for refugee populations. Another innovative refugee health online platform, Bridging Refugee Youth and Children's Services (BRYCS),



focuses specifically on refugee youth, presenting educational content for providers across service sectors, including education and healthcare. Through IACAPAP, Switchboard, and BRYCS, there is a wealth of information and educational content freely available to providers seeking to learn more about refugee and immigrant populations—especially for providers based in North America—yet few resources are interactive or provide suggestions based on provider-generated information. To further augment the knowledge gained from these resources, service providers may benefit from additional interactive and youth-specific tools that assist directly in service provision.

The RICST

Given the demonstrated need for provider resources that build cultural responsivity and cross-sector collaborative skills—and the importance of these resources being freely accessible to providers globally—we developed the Refugee and Immigrant Core Stressors Toolkit (RICST). The RICST is based on the Four Core Stressors framework, which illustrates four domains of commonly experienced stress (traumatic, acculturative, resettlement, and isolation) for refugee and immigrant youth and families. The RICST seeks to disseminate this clinically accessible (i.e., limited professional and/or sector-specific jargon) and actionable (i.e., clear recommendations are provided based on identified needs) toolkit to providers across service sectors working with refugees and immigrants globally.

The RICST is a free, web-based toolkit developed collaboratively with refugee and immigrant mental health providers and stakeholders that support education, assessment, and intervention-planning for service providers—especially those with limited experience providing mental health support-working with refugee and immigrant youth and families. RICST users navigate each of the four core stressors, engage with sample assessment questions to understand each stressor in depth, rate youth on a spectrum of risk, and receive intervention strategies specific to the assessed risk (i.e., low, medium, high) and stressor domain (i.e., resettlement, acculturation, isolation, trauma). Interactive components accompany didactic content to support learning and knowledge-transfer in assessment and treatment-planning that is relevant for all providers supporting mental health and well-being, independent of service sector.

In March 2018, the RICST began being hosted publicly on REDCap, a secure web application supported by Boston Children's Hospital. This public hosting was initiated in part to increase user access; previously, the Refugee Services Toolkit, as the RICST was known at the time, was available only with the creation of a password-protected account through the National Child Traumatic Stress Network (NCTSN) Learning Center.

The Present Study

In this descriptive pilot investigation, we examine RICST users between March 2018 and October 2020 in their engagement with and use of the RICST as an educational, assessment, and/or intervention-planning tool. We also provide areas of future expansion for the RICST to further build provider capacity in serving refugee and immigrant youth and their families.

Methods

Users

Between March 2018 and October 2020, the RICST was accessed more than 2300 times. New users (88.3%) were mostly based in North America (US, Canada, or Mexico; 86%); however, across all users, locations were reported across every continent except Antarctica. Users from North America were from 44 US states and 7 Canadian provinces. Twelve of the 25 reported countries are categorized as low-or middle-income countries (LMICs), according to World Bank classifications (World Bank, 2017). See Figs. 2 and 3 for maps of user locations.

Users accessed the RICST through the Boston Children's Hospital Trauma and Community Resilience Center website, the NCTSN refugee resources page, and at https://is.gd/Corestressortool. At present, the RICST is not advertised on any other platforms but has been highlighted or referenced in a number of presentations, trainings, and workshops led by members of the Boston Children's Hospital Trauma and Community Resilience Center since 2018.

Design and Components of the RICST

The RICST includes (1) an overview of the Four Core Stressors framework, including the graphic in Fig. 1; (2) stressor-specific educational content and sample guiding questions; (3) scaffolding to assess refugee/immigrant youth on a spectrum of low-moderate-high risk for each stressor; (4) specific intervention suggestions and strategies for the provided risk assessment (e.g., interventions for youth rated moderate-risk for traumatic stress); and (5) user feedback and usability questions at the end.

(1) Overview of the Four Core Stressors framework

Figure 1 is provided to all users of the RICST to introduce and orient them to the four core stressors framework. Users are reminded that content and sample questions provided in the toolkit are meant to guide learning, assessment, and treatment planning and are not intended to replace clinical judgment.



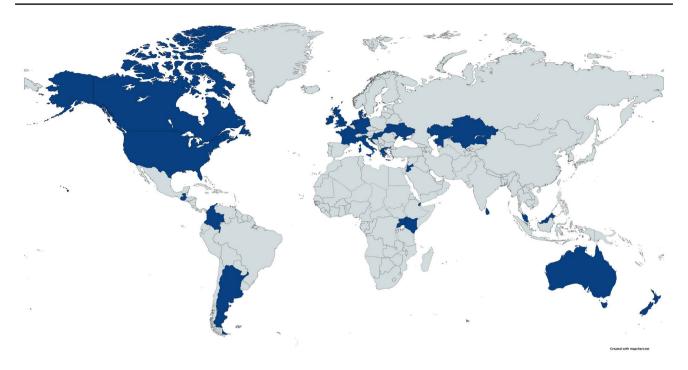


Fig. 2 Self-reported country location of new RICST users, with countries of use marked in blue (black)

(2) Stressor-specific educational content and guiding questions

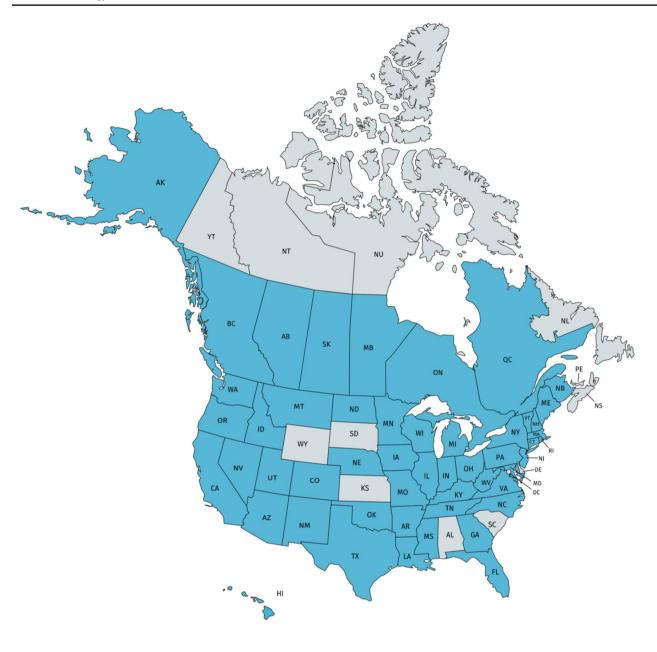
Traumatic stress is presented as a potential response after experiencing an intense event that threatens or causes harm to a child's physical or emotional well-being. The migration journey—pre-migration, migration, and resettlement—is presented to facilitate understanding of different types of traumas that may occur during each step of the migration journey. Next, users explore three domains of traumatic stress: emotion regulation, social support, and environment. Each of these domains contains sample questions, including "Is this child exhibiting symptoms of a depressed or irritable mood, anxiety, attention or concentration problems, or behavior problems?", "Does the family have connections to family or other supports in the community?", and "Is there ongoing trauma in this child's life (e.g., domestic violence, community violence, accidents, or traumatic loss)?".

Acculturative stress is defined as stress that refugee and immigrant children and families experience as they try to navigate between their new culture and their culture of origin, with examples of youth conflicts with caregivers over cultural norms and problems trying to fit in at school. Users explore sample questions for three domains of acculturative stress: acculturation, language, and parenting capacity. Sample questions include "Do caregivers or children worry that any of their family members are 'too American'?', "Are the child and family able to navigate the city on their own (e.g., read signs, take public transportation)?", and "Does the child have frequent conflicts with the caregivers?".

Resettlement stress is defined as stress experienced as refugee and immigrant youth and families try to establish lives in a new place. In the Four Core Stressors framework, resettlement stress primarily focuses on access to, or barriers to, foundational health, safety, and infrastructure needs. Examples include difficulties finding adequate housing or employment, transportation difficulties, and financial stressors such as poverty. Users explore sample questions for four domains of resettlement stress: basic needs, healthcare and access to services, legal status, and special considerations for children separated from families or held in detention. Sample questions include "Is the family experiencing any current housing problems?", "Does the family have access to regular medical, mental health, vision, and/or dental care?", "Do family members need access to legal representation?", and "Was the child separated from family at the border? Does the child feel anger toward or blame parents or other adults for failing to provide adequate care and protection?".

Finally, isolation stress includes stress experienced as a result of minority status in a new country, including loss of social status, discrimination, and feelings of loneliness or loss of a social support network. Users explore sample questions related to three domains of isolation stress: informal social support, formal social support, and discrimination, stigma, and bias. Sample questions include: "Does child or family report feeling lonely a lot of the time?", "Does the child or family have any adults at school or work who are helpful and supportive to them?", and "Does child or family report being frequently harassed by law enforcement or neighbors?".





Created with mapchart.net

Fig. 3 Self-reported state/province location of new RICST users in the US and Canada, with regions of use marked in blue (dark gray)

(3) Risk assessment

Following educational content and guiding questions related to each stressor, users are given a risk assessment table that provides specific examples for how youth who are low-, moderate-, and high-risk within a given stressor may present. Anchors for each level of risk relate to whether a given stressor interferes with youth functioning at school, at home, and in social situations and/or how a stressor detracts from the safety of the youth's social environment. A low-risk rating indicates a high level of functioning and/or a safe social environment,

whereas medium risk indicates diminished functioning and/or a distressed social environment and high risk indicates severe impairment in functioning and/or a threatening social environment. Users are then prompted to select the level of risk for that particular stressor: low, moderate, or high risk.

(4) Intervention strategies

After selecting a risk rating, users are presented with intervention strategies specific to the stressor and the risk rating. Intervention strategies commonly encourage collaboration



with other service sectors, community members, and/or cultural brokers. Examples include "Work with cultural brokers and interpreters when connecting with services" and "Work with schools to address immediate issues related to discrimination or bullying." Users also receive strategies for lower risk ratings, such that low-, moderate-, and high-risk suggestions are provided to users who report the highest levels of risk.

After completing the toolkit, users can select to download a PDF of their risk ratings for each core stressor, along with the associated intervention strategies recommended for each stressor, across levels of risk. Clinically, we are aware that users have brought PDFs, printouts, or content derived from the toolkit to team meetings and supervision as anchor points for discussion (personal communication with Spurwink Services in Maine, US, 2020).

(5) User and usability questions

In addition to the content of the RICST, users are prompted to complete multiple-choice questions about location of service delivery ("In which region do you work?") and intended purpose of use ("How did you use the toolkit today?"), as well as open-ended interface feedback ("Do you have any feedback or suggestions about the toolkit?"). User information and feedback are reviewed by the toolkit development team and used to inform subsequent iterations of the RICST.

Data Analysis

Descriptive analyses were used to understand user location, purpose of use, and engagement with the toolkit. Informed by qualitative inductive content analysis methods (Elo & Kyngäs, 2008), open-ended qualitative feedback was aggregated, and patterns were identified through team discussion to further understand purpose of use and future directions for toolkit improvement.

This study was determined not to be human subjects research, and therefore determined exempt from further institutional oversight by the Boston Children's Hospital Institutional Review Board.

Results

Of users who opened the toolkit, 377 (15.9%) reached the final landing page where we solicited user feedback, although 510 initial users (21.5%) navigated through and engaged with content and risk assessments for each of the core stressors. Users who engaged with the risk assessment function most frequently indicated high risk for each of the core stressors. Specifically, resettlement stress reported the greatest percentage of high risk ratings (46.2%), followed by isolation (42.6%), trauma (42.0%), and acculturation (39.6%).

The majority of users (64.3%) reported using the RICST to learn more about the needs of refugee and immigrant populations in general, rather than assessing the needs of a specific client (35.7%). Qualitative feedback (n = 17) also indicated that the RICST was used as both an educational and assessment tool. Through open-ended feedback, users expressed appreciation for the "specificity," "organization," and "detail" of the RICST. One user commented on the tool's benefit in training volunteers unfamiliar with refugee and immigrant populations. Users recommended adding resources for finding culturally responsive services in their specific community, developing "more specific questions" for each stressor subcomponent, and further emphasizing the systemic barriers to care for refugee and immigrant communities. See Table 1 for selected quotes detailing purpose of use and suggestions for further toolkit development.

Table 1 Quotes from RICST users regarding purpose of use and future directions

Purpose of use—educational tool	"I used this toolkit to help inform me about the many stress factors for immigrant communities and ways to intervene to help."
	"Somevolunteers struggle to understand [refugee youth's] problems and seem judgmental about a lot of things about the clients. This information will be helpful to our volunteers to understand our clients and how they can assist them."
Purpose of use—assessment tool	"This is a great tool that I will use to assist in providing care for my clients."
	"I really liked the organization and detail of this assessment tool."
	"This is a great assessment for refugee youth."
Future directions—adding new content	"Would love to see more specific questions related to each subcategory."
	"I wonder if it would be beneficial to really highlight the overall lack of available resources to refugeesin general refugees are placed in a system that is not set up to support them with quality care."
	"More specific resources for connecting people to culturally supportive services."



Discussion

The Refugee & Immigrant Core Stressors Toolkit (RICST) demonstrates initial promise as a resource for enhancing provider effectiveness and building system capacity to meet the multifaceted psychosocial needs of refugee and immigrant youth and their families. Users in this pilot investigation reported finding the RICST beneficial in learning about migrant populations broadly, assessing specific youth clients, and identifying concrete points of triage and intervention strategies. Positive feedback regarding the organization of the RICST supports the general utility of the Four Core Stressors framework in guiding learning and service provision for providers caring for refugee and immigrant youth. Additional positive feedback regarding detail and specificity suggests that the RICST is beneficial in providing sample questions for each stressor, examples at each level of risk, and concrete intervention strategies particular to stressor and risk rating, with future RICST iterations informed by developmental stages (e.g., early childhood vs. adolescence) and social context (e.g., newly arrived vs. second-generation immigrants). The utility of these interactive and concrete characteristics may help inform future iterations and updates of the RICST and could be helpful in developing other free and web-based resources to build provider effectiveness in serving diverse populations. Indeed, the frequency of high risk ratings across all four stressors underscores the high levels of stress in refugee and immigrant populations and the need for such tools to support providers in delivering effective care.

Although cultural responsivity and interdisciplinary collaboration were not directly measured for users before and after using the tool, descriptive and qualitative data indicating use of the RICST for both educational purposes and direct patient care suggest that the RICST supports the general tenants of cultural responsivity. Users build cultural knowledge through engagement with the Four Core Stressors framework and can more readily apply that knowledge in client interactions by utilizing the open-ended questions provided in the RICST. Open-ended questions might enhance provider effectiveness in assessing these domains and encourage a stance of curiosity and humility, logic that also guided the development of the aforementioned Cultural Formulation Interview (Lewis-Fernández et al., 2014). Similarly, user feedback praising the provided intervention strategies—especially those that encourage collaboration with other service sectors and communities suggests that engagement with the tool may help build provider awareness and openness to cross-sector collaboration and community partnership. If the provider is not already a member of, and deeply embedded within, the refugee or immigrant community, these strategies include partnering with cultural brokers or community health workers who are individuals from the community the provider seeks to serve. In doing so, mental health services are likely to be more effective, trusted, and culturally responsive (Brar-Josan & Yohani, 2019; Cardeli, Phan et al., 2020).

The RICST may be particularly exciting in its potential scalability and utility in supporting providers working around the globe, as it targets existing providers and requires few resources to use (Betancourt & Chambers, 2016). Although in the current analysis the majority of users were based in North America, RICST access from providers in other parts of the world—including 12 LMICs—indicates demand for provider resources in this domain. As a free, web-based, brief toolkit, the RICST may be uniquely positioned as a useful tool for providers with limited institutional resources to support extended trainings or expensive materials—a situation familiar to many providers in LMICs (Kakuma et al., 2011; Saraceno et al., 2007). Institutions with capacity to support e-learning might consider incorporating the RICST into formal training for providers working with diverse populations, as ease of scalability is a key factor in adopting new medical education content within healthcare settings (Frehywot et al., 2013; Kakuma et al., 2011). Further, the provision of digital training resources enables scalability and reach of both the trainings themselves and research that can inform further development and enhancement of those training resources (Fairburn & Patel, 2017). As we seek to improve the RICST and consider other tools that may build provider effectiveness in this realm, it is critical to highlight the necessity of reaching providers in LMICs, where the majority of refugee and immigrant youth reside, to promote mental health(care) equity globally. Future development of the RICST could prioritize translation into languages other than English to expand accessibility for LMIC (and non-LMIC) providers. Similarly, as with many currently available online resources (e.g., Switchboard, BRYCS), the RICST focuses on agencies in North America; expansion of the RICST could enable additional, location-specific resource-mapping, which may further support providers in LMICs to collaborate in intervention efforts with local entities.

Users also suggested additional content to further develop and expand the RICST, including emphasizing systemic barriers that exacerbate the four core stressors, expanding information about accessing culturally appropriate services, and adding additional questions for each stressor sub-category. Bolstering educational and assessment content in each of these areas, as well as adding culture-specific intervention strategies and youth-specific stressors (e.g., related to school), may facilitate further provider effectiveness. Relatedly, adding content and questions that highlight complementary strengths for each core stressor may help providers



understand and assess sources of stress alongside sources of strength and resilience (Abdi et al., under review). In addition to expanding the RICST itself, future evaluations of the RICST could integrate more concrete assessments of provider cultural-responsivity and cross-sector collaboration to corroborate the reported preliminary findings. Further investigations could also explore usability and accessibility directly through implementation research, as researchers have done recently with app-based mental health resources (Burchert et al., 2019; Sander et al., 2020).

This pilot study has several limitations that should be noted. First, users provided feedback and information about their location and purpose of use as they wished; not every user completed feedback. Users who navigated away from the toolkit before the final page (84.1%) did not complete usability questions and attrition is a documented problem for online provider learning platforms (Brennan et al., 2019). Thus, key information about why users closed the toolkit before completing was unavailable to inform future RICST revisions. Second, we did not collect information about the users themselves, beyond location; in particular, we do not have data on user service sector (e.g., mental health, education, etc.), professional role (e.g., social worker, community health worker, school nurse) or level of familiarity/experience with refugee/immigrant populations. Future user evaluations of the RICST will seek to gain further clarity in these and other domains. Third, the toolkit is intentionally designed for providers with minimal knowledge of refugee and immigrant populations. As a result, suggested intervention strategies are intentionally broad. A further understanding of the RICST user population (e.g., mental health providers vs. community health workers vs. interpreters vs. educators) and when users engage the toolkit (e.g., prior to meeting with a client vs. direct assessment with client present vs. seeking general knowledge) could inform where recommendation specificity could be best enhanced. Finally, engagement with the risk assessment function was independent of purpose of use, such that users seeking to learn about refugee and immigrant populations in general (rather than an individual client) still provided risk ratings in order to learn about intervention strategies. Data from risk ratings may not be indicative of assessed risk of a specific youth, but rather a hypothesized case or an aggregate of common cases. A future iteration of the toolkit could utilize branching logic in REDCap to allow users to select if they wanted general information and recommendations or the ability to assess a specific youth.

As global rates of migration continue to rise, the need to support providers in caring for the psychosocial needs of refugee and immigrant youth becomes increasingly urgent. The RICST—an educational, assessment, and intervention-planning tool—demonstrates promise in building provider effectiveness through understanding four core stressors common to refugee and immigrant youth, especially as it

addresses a growing need for accessible, web-based provider resources to promote mental health (Fairburn & Patel, 2017; Muñoz et al., 2018). Further evaluation of the RICST's ability to support culturally responsive, trauma-informed, and collaboration-focused service provision is needed to better understand its value and utility. Future resources, trainings, and assessment tools that aim to build provider capacity to support refugee and immigrant youth mental health may benefit from drawing on the RICST to conceptualize, organize, and disseminate brief, low-cost, and accessible tools in order to support providers and stakeholders working with refugee and immigrant youth.

Acknowledgements We thank Colleen Barrett Bixby, Molly Benson, Heather Baldwin, Heidi Ellis, Alisa Miller, Emma Cardeli, Saida Abdi, and Osob Issa for their work in the development of the Refugee & Immigrant Core Stressors Toolkit. We are also grateful to the service providers and community members who provided feedback for the initial iterations of the toolkit that shaped its current state.

Funding This study was supported in part by a grant from the Substance Abuse and Mental Health Services Administration (1U79SM080047).

Declarations

Competing interests The authors declare no competing interests.

References

Abdi, S. M. (2018). *Mental health of migrant children*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190632366. 013.12

Aragona, M., Pucci, D., Mazzetti, M., & Geraci, S. (2012). Post-migration living difficulties as a significant risk factor for PTSD in immigrants: A primary care study. *Italian Journal of Public Health*, 9(3), 1–8. https://doi.org/10.2427/7525

Beiser, M., & Hou, F. (2016). Mental health effects of premigration trauma and postmigration discrimination on refugee youth in Canada. *Journal of Nervous and Mental Disease*, 204(6), 464–470. https://doi.org/10.1097/NMD.0000000000000016

Betancourt, T. S., Abdi, S., Ito, B. S., Lilienthal, G. M., Agalab, N., & Ellis, B. H. (2015). We left one war and came to another: Resource loss, acculturative stress, and caregiver-child relationships in somali refugee families. *Cultural Diversity and Ethnic Minority Psychology*, 21(1), 114–125. https://doi.org/10.1037/a0037538

Betancourt, T. S., & Chambers, D. A. (2016). Optimizing an era of global mental health implementation science. In *JAMA Psychiatry* (Vol. 73, Issue 2, pp. 99–100). American Medical Association. https://doi.org/10.1001/jamapsychiatry.2015.2705

Betancourt, T. S., Newnham, E. A., Birman, D., Lee, R., Ellis, B. H., & Layne, C. M. (2017). Comparing trauma exposure, mental health needs, and service utilization across clinical samples of refugee, immigrant, and U.S.-Origin children. *Journal of Traumatic Stress*, 30(3), 209–218. https://doi.org/10.1002/jts.22186

Brar-Josan, N., & Yohani, S. C. (2019). Cultural brokers' role in facilitating informal and formal mental health supports for refugee youth in school and community context: A Canadian case study. *British Journal of Guidance and Counselling*, 47(4), 512–523. https://doi.org/10.1080/03069885.2017.1403010



- Brennan, E. M., Sellmaier, C., Jivanjee, P., & Grover, L. (2019). Is online training an effective workforce development strategy for transition service providers? Results of a Comparative Study. *Journal of Emotional and Behavioral Disorders*, 27(4), 235–245. https://doi.org/10.1177/1063426618819438
- Burchert, S., Alkneme, M. S., Bird, M., Carswell, K., Cuijpers, P., Hansen, P., Heim, E., Harper Shehadeh, M., Sijbrandij, M., van't Hof, E., & Knaevelsrud, C. (2019). User-centered app adaptation of a low-intensity E-mental health intervention for Syrian refugees. Frontiers in Psychiatry, 9(JAN), 663. https://doi.org/10.3389/fpsyt.2018.00663
- Cardeli, E., Baldwin, H., Davis, S. H., & Ellis, B. H. (2020). Prevention and early intervention programs for vulnerable populations. In J. G. Beck & D. Sloan (Eds.), *The Oxford Handbook of Traumatic Stress Disorders* (2nd ed.). Oxford University Press.
- Cardeli, E., Phan, J., Mulder, L., Benson, M. A., Adhikari, R., & Ellis, B. H. (2020). Bhutanese refugee youth: the importance of assessing and addressing psychosocial needs in a school setting. Journal of School Health, 90(9), 731–742. https://doi.org/10.1111/josh.12935
- Chambers, D. A., Pintello, D., & Juliano-Bult, D. (2020). Capacity-building and training opportunities for implementation science in mental health. *Psychiatry Research*, 283, 112511. https://doi.org/10.1016/j.psychres.2019.112511
- Correa-Velez, I., Gifford, S. M., & Barnett, A. G. (2010). Longing to belong: Social inclusion and wellbeing among youth with refugee backgrounds in the first three years in Melbourne. *Australia. Social Science and Medicine*, 71(8), 1399–1408. https://doi.org/ 10.1016/j.socscimed.2010.07.018
- Ellis, B. H., Abdi, S. M., & Winer, J. P. (2019). Mental health practice with immigrant and refugee youth: A socioecological framework. In Mental health practice with immigrant and refugee youth: A socioecological framework. American Psychological Association. https://doi.org/10.1037/0000163-000
- Ellis, B. H., MacDonald, H. Z., Lincoln, A. K., & Cabral, H. J. (2008). Mental health of somali adolescent refugees: The role of trauma, stress, and perceived discrimination. *Journal of Consulting and Clinical Psychology*, 76(2), 184–193. https://doi.org/10.1037/0022-006X.76.2.184
- Ellis, B. H., Miller, A. B., Abdi, S. M., Barrett, C., Blood, E. A., & Betancourt, T. S. (2013). Multi-tier mental health program for refugee youth. *Journal of Consulting and Clinical Psychology*, 81(1), 129–140. https://doi.org/10.1037/a0029844
- Ellis, B. H., Miller, A. B., Baldwin, H., & Abdi, S. M. (2011). New directions in refugee youth mental health services: Overcoming barriers to engagement. *Journal of Child & Adolescent Trauma*, 4(1), 69–85. https://doi.org/10.1080/19361521.2011.545047
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. https://doi.org/10. 1111/j.1365-2648.2007.04569.x
- Fairburn, C. G., & Patel, V. (2017). The impact of digital technology on psychological treatments and their dissemination. In *Behaviour Research and Therapy* (Vol. 88, pp. 19–25). Elsevier Ltd. https://doi.org/10.1016/j.brat.2016.08.012
- Fazel, M. (2018). Psychological and psychosocial interventions for refugee children resettled in high-income countries. In *Epidemiology and Psychiatric Sciences* (Vol. 27, Issue 2, pp. 117–123). Cambridge University Press. https://doi.org/10.1017/S2045796017000695
- Forrest-Bank, S. S., Held, M. L., & Jones, A. (2019). Provider perspectives of services addressing the mental health needs of resettled refugee youth. *Child and Adolescent Social Work Journal*, *36*(6), 669–684. https://doi.org/10.1007/s10560-019-00602-1
- Frehywot, S., Vovides, Y., Talib, Z., Mikhail, N., Ross, H., Wohltjen, H., Bedada, S., Korhumel, K., Koumare, A. K., & Scott, J. (2013). E-learning in medical education in resource constrained low- and middle-income countries. In *Human Resources for Health* (Vol. 11, Issue 1, pp. 1–15). BioMed Central. https://doi.org/10.1186/1478-4491-11-4

- Govere, L., & Govere, E. M. (2016). How effective is cultural competence training of healthcare providers on improving patient satisfaction of minority groups? A Systematic Review of Literature. Worldviews on Evidence-Based Nursing, 13(6), 402–410. https://doi.org/10.1111/wvn.12176
- Ho, S., Javadi, D., Causevic, S., Langlois, E. V., Friberg, P., & Tomson, G. (2019). Intersectoral and integrated approaches in achieving the right to health for refugees on resettlement: a scoping review. In *BMJ Open* (Vol. 9, Issue 7). BMJ Publishing Group. https://doi.org/10.1136/bmjopen-2019-029407
- Hook, J. N., Davis, D. E., Owen, J., Worthington, E. L., & Utsey, S. O. (2013). Cultural humility: Measuring openness to culturally diverse clients. *Journal of Counseling Psychology*, 60(3), 353–366. https://doi.org/10.1037/a0032595
- Hook, J. N., Davis, D., Owen, J., & DeBlaere, C. (2017). Cultural humility: engaging diverse identities in therapy. American Psychological Association. https://www.apa.org/pubs/books/4317453
- Im, H., & Swan, L. E. T. (2020). Capacity building for refugee mental health in resettlement: Implementation and evaluation of crosscultural trauma-informed care training. *Journal of Immigrant* and Minority Health, 22(5), 923–934. https://doi.org/10.1007/ s10903-020-00992-w
- Joyce, L., & Liamputtong, P. (2017). Acculturation stress and social support for young refugees in regional areas. *Children and Youth Services Review*, 77, 18–26. https://doi.org/10.1016/j.childyouth. 2017.03.016
- Kakuma, R., Minas, H., Van Ginneken, N., Dal Poz, M. R., Desiraju, K., Morris, J. E., Saxena, S., & Scheffler, R. M. (2011). Human resources for mental health care: current situation and strategies for action. In *The Lancet* (Vol. 378, Issue 9803, pp. 1654–1663). Elsevier. https://doi.org/10.1016/S0140-6736(11)61093-3
- Kaplin, D., Parente, K., & Santacroce, F. (2019). A review of the use of trauma systems therapy to treat refugee children, adolescents, and families. *Journal of Infant Child and Adolescent Psychotherapy*, 18(4), 417–431. https://doi.org/10.1080/15289168.2019.1687220
- Kimber, M., McTavish, J. R., Vanstone, M., Stewart, D. E., & MacMillan, H. L. (2020). Child maltreatment online education for healthcare and social service providers: Implications for the COVID-19 context and beyond. *Child Abuse and Neglect*. https://doi.org/10.1016/j.chiabu. 2020.104743
- Kliewer, W., Kheirallah, K. A., Cobb, C. O., Alsulaiman, J. W., Mzayek, F., & Jaddou, H. (2020). Trauma exposure and posttraumatic stress symptoms among Syrian refugee youth in Jordan: Social support and gender as moderators. *International Journal of Psychology*, ijop.12695. https://doi.org/10.1002/ijop.12695
- Lewis-Fernández, R., Aggarwal, N. K., Lam, P. C., Galfalvy, H., Weiss, M. G., Kirmayer, L. J., Paralikar, V., Deshpande, S. N., Díaz, E., Nicasio, A. V., Boiler, M., Alarcón, R. D., Rohlof, H., Groen, S., Van Dijk, R. C. J., Jadhav, S., Sarmukaddam, S., Ndetei, D., Scalco, M. Z., Vega-Dienstmaier, J. M. (2017). Feasibility, acceptability and clinical utility of the Cultural Formulation Interview: mixed-methods results from the DSM-5 international field trial. In British Journal of Psychiatry (Vol. 210, Issue 4, pp. 290–297). Royal College of Psychiatrists. https://doi.org/10.1192/bjp.bp.116.193862
- Lewis-Fernández, R., Krishan Aggarwal, N., Baarnhielm, S., Rohlof, H., Kirmayer, L. J., Weiss, M. G., Jadhav, S., Hinton, L., Alarcon, R. D., Bhugra, D., Groen, S., van Dijk, R., Qureshi, A., Collazos, F., Rousseau, C., Caballero, L., Ramos, M., & Lu, F. (2014). Culture and psychiatric evaluation: Operationalizing cultural formulation for DSM-5. *Psychiatry*, 77(2), 130–154. https://doi.org/10.1521/psyc.2014.77.2.130
- Lie, D. A., Lee-Rey, E., Gomez, A., Bereknyei, S., & Braddock, C. H. (2011). Does cultural competency training of health professionals improve patient outcomes? A systematic review and proposed algorithm for future research. *Journal of General Internal Medicine*, 26(3), 317–325. https://doi.org/10.1007/s11606-010-1529-0



- Lindencrona, F., Ekblad, S., & Hauff, E. (2008). Mental health of recently resettled refugees from the Middle East in Sweden: The impact of pre-resettlement trauma, resettlement stress and capacity to handle stress. Social Psychiatry and Psychiatric Epidemiology, 43(2), 121–131. https://doi.org/10.1007/s00127-007-0280-2
- McGregor, B., Belton, A., Henry, T. L., Wrenn, G., & Holden, K. B. (2019). Improving behavioral health equity through cultural competence training of health care providers. In *Ethnicity & disease* (Vol. 29, Issue Suppl 2, pp. 359–364). NLM (Medline). https://doi.org/10.18865/ed.29.S2.359
- Miller, K. E., & Rasmussen, A. (2017). The mental health of civilians displaced by armed conflict: An ecological model of refugee distress. *Epidemiology and Psychiatric Sciences*, 26(2), 129–138. https://doi.org/10.1017/S2045796016000172
- Muñoz, R. F., Chavira, D. A., Himle, J. A., Koerner, K., Muroff, J., Reynolds, J., Rose, R. D., Ruzek, J. I., Teachman, B. A., & Schueller, S. M. (2018). Digital apothecaries: a vision for making health care interventions accessible worldwide. *MHealth*, 4, 18–18. https://doi.org/10.21037/mhealth.2018.05.04
- O'Higgins, A. (2012). Vulnerability and agency: Beyond an irreconcilable dichotomy for social service providers working with young refugees in the UK. *New Directions for Child and Adolescent Development*, 2012(136), 79–91. https://doi.org/10.1002/cad.20012
- Pacione, L., Measham, T., Kronick, R., Meloni, F., Ricard-Guay, A., Rousseau, C., Ruiz-Casares, M., Kronick London Street, R., & Edward, by R. (2012). The mental health of children facing collective adversity: poverty, homelessness, war and displacement. In J. Rey (Ed.), IACAPAP Textbook of Child and Adolescent Mental Health. International Association for Child and Adolescent Psychiatry and Allied Professions.
- Pollard, R. Q., Betts, W. R., Carroll, J. K., Waxmonsky, J. A., Barnett, S., deGruy, F. V., Pickler, L. L., & Kellar-Guenther, Y. (2014). Integrating primary care and behavioral health with four special populations: Children with special needs, people with serious mental illness, refugees, and deaf people. *American Psychologist*, 69(4), 377–387. https://doi.org/10.1037/a0036220
- Sander, L. B., Schorndanner, J., Terhorst, Y., Spanhel, K., Pryss, R., Baumeister, H., & Messner, E. M. (2020). 'Help for trauma from the app stores?' A systematic review and standardised rating of apps for Post-Traumatic Stress Disorder (PTSD). In *European Journal of Psychotraumatology* (Vol. 11, Issue 1). Taylor and Francis Ltd. https://doi.org/10.1080/20008198.2019.1701788
- Saraceno, B., van Ommeren, M., Batniji, R., Cohen, A., Gureje, O., Mahoney, J., Sridhar, D., & Underhill, C. (2007). Barriers to improvement of mental health services in low-income and

- middle-income countries. In *Lancet* (Vol. 370, Issue 9593, pp. 1164–1174). Elsevier. https://doi.org/10.1016/S0140-6736(07) 61263-X
- Schwartz, J. I., Rabin, T. L., & Doolittle, B. R. (2012). Integrated care of refugees in a primary care residency clinic. *Journal of Graduate Medical Education*, 4(4), 551–551. https://doi.org/10.4300/jgme-d-12-00176.1
- Sim, A., Bowes, L., & Gardner, F. (2018). Modeling the effects of war exposure and daily stressors on maternal mental health, parenting, and child psychosocial adjustment: A cross-sectional study with Syrian refugees in Lebanon. *Mental Health*, 5, 1–12. https://doi. org/10.1017/gmh.2018.33
- Trentacosta, C. J., Ziadni, M. S., Lumley, M. A., & Arfken, C. (2016).
 Potentially Traumatic Events and Mental Health Problems among Children of Iraqi Refugees: THe Roles of Relationships with Parents and Feelings about School CHOIR BodyMap Analyses View Project Using DVDs to Motivate Change at Psychotherapy Onset View Project. https://doi.org/10.1037/ort0000186
- Tyrer, R. A., & Fazel, M. (2014). School and community-based interventions for refugee and asylum seeking children: A systematic review. *PLoS One*, 9(2), e89359. https://doi.org/10.1371/journal.pone.0089359
- UNHCR. (2020). UNHCR figures at a glance. https://www.unhcr.org/ en-us/figures-at-a-glance.html
- Wainberg, M. L., Scorza, P., Shultz, J. M., Helpman, L., Mootz, J. J., Johnson, K. A., Neria, Y., Bradford, J. M. E., Oquendo, M. A., & Arbuckle, M. R. (2017). Challenges and opportunities in global mental health: a research-to-practice perspective. In *Current Psychiatry Reports* (Vol. 19, Issue 5, p. 28). Current Medicine Group LLC 1. https://doi.org/10.1007/s11920-017-0780-z
- Weissman, J. S., Betancourt, J., Campbell, E. G., Park, E. R., Kim, M., Clarridge, B., Blumenthal, D., Lee, K. C., & Maina, A. W. (2005). Resident physicians' preparedness to provide cross-cultural care. *JAMA*, 294(9), 1058–1067. https://doi.org/10.1001/jama.294.9. 1058
- World Bank. (2017). World Bank, List of Economies. https://www.who.int/airpollution/data/countryregion_2017.pdf?ua=1
- Yayan, E. H., Düken, M. E., Özdemir, A. A., & Çelebioğlu, A. (2020). Mental health problems of Syrian refugee children: Post-traumatic stress, depression and anxiety. *Journal of Pediatric Nursing*, *51*, e27–e32. https://doi.org/10.1016/j.pedn.2019.06.012

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

