



HHS Public Access

Author manuscript

J Trauma Stress. Author manuscript; available in PMC 2018 June 06.

Published in final edited form as:

J Trauma Stress. 2017 June ; 30(3): 209–218. doi:10.1002/jts.22186.

Comparing Trauma Exposure, Mental Health Needs, and Service Utilization across Clinical Samples of Refugee, Immigrant, and U.S.-Origin Children

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Abstract

Most mental health services for trauma-exposed children and adolescents were not originally developed for refugees. Information is needed to help clinicians design services to address the consequences of trauma in refugee populations. We compared trauma exposure, psychological distress, and mental health service utilization among children and adolescents of refugee-origin, immigrant-origin, and U.S.-origin referred for assessment and treatment by U.S. providers in the National Child Traumatic Stress Network (NCTSN). We used propensity score matching to compare trauma profiles, mental health needs, and service use across three groups. Our sample comprised refugee-origin youth ($n = 60$, 48.3% female, mean age = 13.07 years) and propensity-matched samples of immigrant-origin youth ($n = 143$, 60.8% female, mean age = 13.26 years), and U.S.-origin youth ($n = 140$, 56.1% female, mean age = 12.11 years). On average, there were significantly more types of trauma exposure among refugee youth than either U.S.-origin youth ($p < .001$) or immigrant youth ($p < .001$). Compared with U.S.-origin youth, refugee youth had higher rates of community violence exposure, dissociative symptoms, traumatic grief, somatization, and phobic disorder; in contrast, the refugee group had comparably lower rates of substance abuse and oppositional defiant disorder (p s ranging from .030 to $< .001$). This clinic-

referred sample of refugee-origin youth presented with distinct patterns of trauma exposure, distress symptoms, and service needs that merit consideration in services planning.

An immense gap exists between the mental health risks faced by refugee children and adolescents (hereafter *youth*) who have resettled in the U.S., and knowledge of how to effectively address their needs. Few refugee youth who need mental health services receive care (Ellis et al., 2010; Fazel, Reed, Panter-Brick, & Stein, 2012). When refugee families do access services, little information is available to guide mental health service providers regarding their trauma histories, mental health profiles, and service utilization patterns. A growing literature notes the distinctiveness of the experience of refugee youth who are displaced by war-related violence (Bean, Derluyn, Eurelings-Bontekoe, Broekaert, & Spinhoven, 2007; Lustig et al., 2004) relative to immigrants who migrate to pursue better economic opportunities or for other reasons. Yet both groups share the challenges of acculturation, daily stressors of resettlement, and potential exposure to other types of traumatic events such as abuse or community violence (Bean et al., 2007). Thus, a careful comparison of the presenting clinical issues and mental health services received by refugee youth with nonrefugee reference groups can place their experience in context and shed light on the specific needs of this high-risk yet understudied, underserved, and highly diverse population. To that end, the present study compared the clinical and service profiles of refugee youth with those of non-refugee immigrant, and U.S. born youth to improve our understanding of common versus unique aspects of their circumstances and service needs.

Investigations employing a cumulative trauma exposure framework to model preflight, flight, and resettlement stressors in refugee youth and families have generally found dose-response relations with a broad range of mental health outcomes (Ehnholt & Yule, 2006; Ellis, MacDonald, Lincoln, & Cabral, 2008; Lustig et al., 2004). A growing number of studies in Europe report on traumatic histories and psychological distress of refugee youth (Bean et al., 2007; Fazel, Doll, & Stein, 2009; Hjern, Angel, & Jeppson, 1998; Montgomery & Foldspang, 2005). In the U.S., an emerging body of research is shedding light on the mental health of refugees from diverse regions including Somalia (Ellis et al., 2010; Ellis et al., 2011), Sudan (Geltman et al., 2005), West Africa (Akinsulure-Smith, 2012; Akinsulure-Smith, Ghiglione, & Wollmershauser, 2009), Vietnam and Cambodia (Fox, Rossetti, Burns, & Popovich, 2005; Sack, Him, & Dickason, 1999), Iraq (Jamil et al., 2007), Afghanistan (Mghir, Freed, Raskin, & Katon, 1995), and Bosnia (Weine et al., 1995). Nevertheless, few published studies include samples from multiple national and ethnic backgrounds (D. Birman et al., 2008; M. Fazel et al., 2009), and no studies have employed multi-site designs. Accordingly, the aim of this exploratory study was to compare and contrast trauma histories, clinical profiles, and patterns of service utilization across 3 service-referred groups of diverse ethnic backgrounds: *refugee-origin* (hereafter *refugee*) youth, and matched samples of *immigrant* and *U.S.-origin nonrefugee nonimmigrant* youth (hereafter *U.S.-origin*). Although a current paucity of evidence and theory precluded *a priori* hypothesis formulation, we reasoned that if refugee youth exhibited distinctly different trauma exposure/distress/service utilization profiles, they may require services adapted and tailored to their specific needs. Conversely, if refugee profiles resembled those of immigrant and

U.S.-origin youth, refugees may require less tailored and adapted interventions and may be adequately served by mainstream or immigrant-focused programs.

Method

Procedure

The present study used data from the Core Data Set (CDS), a quality improvement initiative designed to standardize assessment procedures across National Child Traumatic Stress Network (NCTSN) sites. The CDS was the first quality improvement initiative of its kind, consisting of data collected between 2004 and 2010 at 56 centers across the United States, including community-based organizations, hospitals, and universities that provide youth mental health services (Pynoos et al., 2008). The CDS included demographic and core clinical characteristics, trauma history details, and treatment services information for 14,088 youth, aged birth to 21 years, who presented for assessment and treatment following exposure to trauma. Licensed clinical providers with a Master's degree or higher were trained to administer, score, and interpret the CDS protocol. Clinicians obtained information from multiple respondents and sources to complete the CDS battery (i.e., directly from clients and caregivers, collateral reports and records) at intake and every 3 months until treatment completion. Real-time reports, quality control procedures (e.g., data verification checks), and ongoing consultation, technical assistance, and monitoring were provided by the University of California – Los Angeles (UCLA)/Duke University National Center for Child Traumatic Stress—the coordinating center for the NCTSN. All procedures were approved by the Duke University Health System Institutional Review Board (IRB; Durham, N.C.) and the respective IRBs of all participating NCTSN sites.

Participants

A subsample of 339 children and adolescents from the CDS was used in the present study. This sample was derived by first dividing the diverse youth in the CDS into three mutually exclusive groups based on 2 intake questions: (1) “*Is the child (and/or family) a refugee, asylum seeker, or immigrant with a history of exposure to community violence?*” and (2) “*Did the child (and/or family) experience war, terrorism or political violence outside of the U.S.?*” Refugee status was operationally defined as affirmative answers to both questions and may thus have included refugee children born in the U.S. to refugee families (thereby “Refugee Origin” youth). Immigrant status was defined as answering “Yes” to question (1) and “No” to (2); and U.S.-Origin status was defined as answering “No” to both questions. Additional intake questions were used as validity checks for refugee and immigrant classification (e.g., reported country of origin was compared to U.S. State Department data on refugee and immigrant countries of origin). As the sample of refugee youth was small ($n = 60$) in relation to the total sample ($N = 14,088$), propensity matching, detailed further in the Data Analysis section, was used to select the 2 comparison groups. The resulting sample of 343 youth included 3 groups comparable in age and gender *Refugee Youth* ($n = 60$, 48.3% female, mean age = 13.07 years), *Immigrant Youth* ($n = 143$, 60.8% female, mean age = 13.26 years), and *U.S.-Origin Non-Refugee/Non-Immigrant Youth* ($n = 140$, 56.1% female, mean age = 12.11 years). Demographic characteristics and descriptive statistics for each group are presented in Table 1.

Some differences emerged between the immigrant and refugee groups regarding countries of origin. Much of the immigrant sample (82.2%) originated from either Mexico, or Central or South America, whereas this was the case for only 34.5% of the refugee sample. The refugee sample had higher representation from African (25.9% vs. 3.7%) and European (20.7% vs. 8.2%) nations when compared to the immigrant sample. Both samples had a small proportion originating from countries in Asia (12.1% of refugees and 5.9% of immigrants).

The groups did not differ significantly with respect to primary residence. However, the *Immigrant Youth* did have a higher proportion of Hispanics than either the *Refugee Youth* or the *U.S.-Origin Non-Refugee/Non-Immigrant Youth* (70.6% vs 35.6% and 30.9%, respectively). Likewise the *Immigrant Youth* were more likely to be in a home where the primary language spoken was Spanish than either the *Refugee Youth* or the *U.S.-Origin Non-Refugee/Non-Immigrant Youth* (70.3% vs 36.4% and 16.0% respectively).

Measures

All forms were available in English and Spanish; some instruments were available in other languages. All translated versions were forward- and back-translated. Most sites had bilingual Spanish-speaking staff; interpreters were often available to help families who spoke other languages to respond to English-language questions.

Demographic characteristics—Standard sociodemographic questions used terms and definitions for race and ethnicity that complied with the Federal Office of Management and Budget guidelines.

Clinical evaluation—Per NCTSN procedures, trained clinicians rated the degree to which youth met criteria for approximately 13 *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association [APA], 1994) disorders (e.g., depression; posttraumatic stress disorder [PTSD], generalized anxiety), as well as the presence of other trauma-related symptoms (e.g., dissociation) and behavioral problems at intake and at each follow-up evaluation. Ratings were made on a 3-point scale comprised of 0 (*not present*), 1 (*possibly present/subclinical*), and 2 (*definitely present/met full criteria*). We collapsed *probable* and *definite* ratings together to increase statistical power and model parsimony.

Indicators of severity (IOS)—Indicators of severity were designed to capture impairments in day-to-day functioning commonly observed in trauma-exposed populations. Respondents used a 3-point scale consisting of 0 (not a problem), 1 (somewhat a problem), and 2 (very much a problem) to rate the degree to which various types of impairment in behavior and functioning were present across a range of domains, including academic problems, behavior problems in school or home, substance use, and other medical problems or disabilities. An IOS total score (possible range = 0 to 28) was created by summing across all indicators.

Trauma History Profile—The clinician-administered Trauma History Profile (THP) is derived from the UCLA PTSD Reaction Index (Steinberg, Brymer, Decker, & Pynoos, 2004)

and assesses exposure to 19 different types of trauma using a 3-point scale. Definitions for the maltreatment trauma types were consistent with definitions used in the National Child Abuse and Neglect Data System (NCANDS) glossary. Trained clinicians endorsed whether the event did not occur, did occur, or was suspected to occur based on clinical interviews with the child, caregiver, and/or other collateral reporters (e.g., case workers). Each trauma rating was accompanied by specific instructions, definitions, and examples to enhance accuracy. For this study, only confirmed occurrences of trauma exposure per clinician rating were included. Additional trauma-related details (age of onset, duration, frequency, perpetrator, etc.) were also collected for each trauma type endorsed.

Service utilization—Service utilization (as assessed at intake and follow-up) referred to services received 30 days prior to the intake assessment, as well as services received during the most recent 30 days of care at an NCTSN center. Services tallied included case management, in-home counseling, outpatient treatment, involvement with juvenile justice or probation systems, child welfare programs and school based supports.

Data Analysis

We used propensity score matching to select comparison groups from families who self-identified (based on the 2 questions listed above) as *Immigrant* (born outside the U.S. but not meeting refugee criteria) or *U.S.-Origin* (neither refugees, nor immigrants, based on the 2 questions and born in US). This matching technique facilitates unambiguous comparisons of group profiles by accounting for matched demographics that may be associated with group membership (e.g., immigrant/refugee status). Matching can thus reduce the possibility of bias introduced by inherent demographic differences between comparison groups and thereby more closely simulate a matched-cohort design based on a probability sample (Pearl, 2000). Matching variables included having: at least one confirmed trauma type; follow-up data on final treatment disposition; and complete information on age, race, Latino ethnicity, public insurance, primary residence, geographical region, and medical problems or disabilities. The propensity matching algorithm applied these criteria to the resulting matched sample ($n = 7,369$) to estimate the probability of refugee classification.

All refugee-origin youth with matching data available were included in the model. For each modeled refugee child, the algorithm randomly selected members of the 2 comparison groups with an estimated propensity that fell within 0.01 of the refugee's estimate. Matching both comparison groups (immigrant and U.S.-origin) at approximately 3 to 1 for refugees with complete matching data ($n = 60$) produced both immigrant ($n = 143$) and US origin ($n = 140$) contrast samples. Table 1 summarizes demographic information and matching variables for the three groups (except medical problems, see Table 2). We used independent-group *t*-tests to evaluate between-group differences on demographic variables, total types of trauma exposure, psychological distress, and service utilization; we used Chi-square tests for categorical variables. Missing data were limited and consistent with criteria for missing at random and were thus addressed by listwise deletion of records. Propensity matching yielded comparison groups similar to the refugee group with respect to all matching variables except race and ethnicity; the distribution of these variables in the immigrant and

U.S.-origin groups was thus statistically adjusted in subsequent analyses. Random assignment also produced comparison groups with a slightly higher proportion of females.

Results

Trauma Exposure

Table 2 lists trauma exposures by group. Compared to both contrast groups, refugee youth reported significantly more total trauma types, and different trauma exposure profiles (evidenced by higher rates of exposure to forced displacement, community violence, and traumatic loss/separation/bereavement). The high incidence of forced displacement among refugee families relative to the other groups was expected given that refugee experiences often involve forced eviction.

Clinical Evaluation and Indicators of Severity

Table 3 presents clinical evaluations of participants and IOS ratings across groups. For the clinical evaluation ratings, refugees received significantly higher ratings of phobic disorder than both contrast groups, and higher ratings for traumatic grief, dissociation, and somatization than U.S.-origin youth. For self-reported IOS data, refugees received lower suicidality ratings than immigrants (12.5% vs 23.6% respectively).

Treatment Foci

Examination of treatment focus revealed that although refugee youth (by definition) had histories of political violence (either inside or outside their country of origin), only 16 (29.0%) were receiving services for which war/political violence was a focus. Other treatment foci for refugee youth included traumatic loss, separation, or bereavement (12.7%), cultural adjustment (12.7%), sexual assault/rape (9.1%), forced displacement (7.3%), emotional abuse/psychological maltreatment (7.3%), impaired caregiver (5.5%), physical maltreatment/abuse (3.6%) and physical assault (3.6%). Although 9.3% of immigrants ($n = 13$) and 21.1% ($n = 27$) of U.S.-origin youth were receiving services focused on domestic violence, only one refugee (1.8%) had such a treatment focus. No refugees were seen for interpersonal or community violence, illness/medical problems, serious injury/accident, or natural disaster as the primary treatment foci.

Service Utilization

Table 4 lists types of services accessed by the three groups during the month prior to intake. Refugees were significantly more likely to receive in-home counseling and primary care treatment than immigrant youth. Refugees were also significantly more likely to have attended a special class or school than U.S.-origin youth. Noticeably more refugees had received case management/care coordination than the other 2 groups. This difference was not statistically significant; however, the relatively high overall use of case management services and the modest sample size combined to restrict the statistical power to detect this specific difference (there is only a 41.0% probability of rejecting the null hypothesis of no difference when the true difference is this size).

Number of Trauma Types by Total IOS and Clinical Evaluation Scores

We used a general linear model (adjusted for age and gender) to examine relations among these variables by modeling total number of trauma types, refugee status (refugee vs. immigrant vs. U.S.-origin), and their interaction term as predictors, and total IOS and clinical evaluation as criterion variables. Total trauma types predicted both IOS and clinical evaluation total scores (both p values $<.001$). Refugee/immigrant status predicted IOS total score ($p = .011$) but not clinical problems ($p = .324$); both immigrant and U.S.-origin youth had significantly higher average predicted IOS total scores than refugees. The test of interaction between refugee status and total trauma types in predicting IOS did not reach significance ($p = .810$).

Discussion

This exploratory study compared clinical presenting issues, treatment foci, and concurrent services received across matched samples of refugee, immigrant, and U.S.-origin youth referred for mental health services at multiple trauma treatment sites across the U.S. Refugee youth reported more total types of trauma and different types of trauma than immigrant and U.S.-origin youth. In particular, refugee youth had higher rates of exposure to forced displacement, community violence, and traumatic loss. Despite reporting a different trauma exposure profile, refugee youth were engaged in treatment for a range of current stressors and traumas, including bereavement, cultural adjustment, and abuse. Refugee youth also exhibited dose-response relations between total trauma types (a predictor) and clinical evaluation and indicators of severity (as outcomes). These findings are unique in that they provide a window into a heterogeneous sample of refugee and immigrant youth from diverse backgrounds who were receiving mental health services at a variety of NCTSN member sites. To date, few studies of refugees have investigated mental health needs and service use across multiple treatment settings throughout the United States (Sujoldzic, Peternel, Kulenovic, & Terzic, 2006).

Our findings, based on youth referred for trauma-informed mental health services, suggest that refugees share some clinical characteristics with immigrant and U.S.-origin youth, yet also differ in important ways. Refugees exhibited distinctive patterns of trauma exposure, symptoms, and service utilization compared to their immigrant and U.S.-origin peers. Consistent with prior research (Ehnholt & Yule, 2006; Fazel et al., 2012), refugees reported more total *types* of trauma exposure than both contrast groups. Although refugees and immigrants share many service needs associated with acculturation and resettlement, refugees' more pervasive histories of trauma and loss may indicate a particularly at-risk population that may benefit from specialized mental health services and public policies that address their complex histories, needs, and circumstances (Isakson, Legerski, & Layne, 2015). The findings indicate the importance of a comprehensive clinical assessment for refugee youth, who may have experienced a broad range of traumas, and seek treatment for reasons beyond forced displacement. Case formulation for refugee children and adolescents seeking treatment is an integrative process, and should capture the broad range of traumas and resettlement stressors characteristic of this population.

Refugee youth reported an increased likelihood of having an impaired caregiver compared to U.S.-origin youth, and higher rates of community violence exposure than immigrant youth. Given the very limited resettlement assistance furnished in the US, many refugees resettle in areas with lower-cost housing and high community violence (American Psychological Association, 2010). Daily hardships experienced by youth and adults affected by conflict (Newnham, Pearson, Stein, & Betancourt, 2015) and resettled in high-income nations (Fazel et al., 2012; Nickerson, Steel, Bryant, Brooks, & Silove, 2011) can play a larger role in later mental health outcomes than early traumas. Consideration of current stressors and hardships are an important addition to clinical case assessments.

Refugee youth reported lower rates of sexual maltreatment than both immigrants and U.S.-origin youth; however, this finding may reflect underreporting due to stigma and merits careful examination in future studies. Refugee youth also manifested a distinctive clinical profile in the form of higher rates of traumatic grief, phobia, dissociation, and somatization; and lower rates of sexual behavior problems, oppositional defiant disorder, and substance abuse compared to U.S.-origin youth. Consistent with a dose-response model, these high rates of trauma-related symptoms may reflect higher rates and cumulative effects of trauma exposure among refugees. Such somatization has been observed among refugee and immigrant groups (Betancourt et al., 2012; Lin, Carter, & Kleinman, 1985) and may reflect culturally-linked manifestations of distress (Ellis et al., 2008; Ellis et al., 2011). The low rates of behavior problems and substance abuse for refugees relative to the other groups suggest that refugee youth referred for services may also have unique protective factors in relation to certain clinical problems.

Refugees' patterns of service use carry implications for intervention and policy. Although all refugee youth (by definition) experienced war and political violence, less than 30% were receiving treatment for which war exposure was a primary therapeutic focus. This evidence is consistent with findings concerning the relative importance of postmigration factors among traumatized refugee populations with extensive premigration trauma (Birman & Tran, 2008; Fazel et al., 2012; Simich, Beiser, & Mawani, 2003). The inherent complexities of war and political violence may involve multiple traumas including loss of loved ones, deprivation, exposure to violence, and displacement, each of which may compound the effects of subsequent resettlement and acculturative stressors (Betancourt, Borisova, de la Soudière, & Williamson, 2011; Birman et al., 2005; Layne et al., 2010). Proximal stressors generated by resettlement may thus be more salient and immediate concerns for refugees in treatment (Beiser, 2006; Birman & Tran, 2008). For example, a recent treatment study with refugees and immigrants (Beehler, Birman, & Campbell, 2012) found that youth reported more than 4 types of traumatic events on average. Nevertheless, the primary focus of treatment involved trauma processing for only a small fraction of youth, and instead centered on current and ongoing stressors (e.g., relationship or school problems).

Consistent with their needs for supportive services, and as seen in prior studies (Birman et al., 2008; Birman et al., 2005), refugees utilized more special classes at school than U.S.-origin youth; and received more in-home counseling services than immigrant youth, perhaps because specialized outreach services were available to refugees through resettlement organizations. However, refugees were less likely (consistent with their clinical problem

profile) to be involved with probation or child welfare service providers. Finally, compared to immigrant youth, refugee youth were more likely to access care through a primary care physician or pediatrician, stressing the importance of the potential role of these providers.

The challenges refugee families face in balancing past trauma with present-day resettlement and acculturative stressors (e.g., housing, employment, health care) within the context of the new language, norms, and laws of a new culture (Fazel et al., 2012) call for assessment-driven, flexibly tailored, multi-level interventions that are implemented in creative and engaging ways (Davies & Webb, 2000; Isakson et al., 2015). For example, school-based interventions for refugees show promise for building social support, assisting with acculturative and resettlement stressors, and identifying and engaging students with serious needs (Ehnholt, Smith, & Yule, 2005; Ellis et al., 2012; Fazel et al., 2009; Kia-Keating & Ellis, 2007). Further, group-based interventions may present an avenue for engaging youth who may be more socially isolated, normalizing symptoms, improving emotion regulation and creating a therapeutic community that fosters healing in a supportive environment. Such early steps may constitute non-stigmatizing ways to engage and retain refugee youth in mental healthcare.

Although diverse, our refugee sample was small, nonrandom, and may reflect arrival patterns during the last decade, differential access to services, and variations in availability of interpreters at NCTSN sites. As such, the findings should be interpreted with care and may not be generalizable to the broader refugee, migrant, and U.S.-origin communities. The sample was also limited to war-affected refugees due to the wording of the CDS questionnaire and may thus have excluded refugees affected by more subtle political persecution or other hazards. Further, the clinical evaluation variables were based on clinical judgments by trained and licensed clinicians—an operational definition that resembles routine clinical care in the U.S., yet lacks the rigor of structured diagnostic tools. In addition, the age range reflects the broad range of children seen for clinical services; clinical needs of very young children may differ from older youth, and findings and recommendations made here are most appropriate to the ages most common in our sample (school-age through adolescence). Last, the diversity of refugee and immigrant groups in the sample prohibited the systematic validation of all measures for all cultural groups; in addition, comparisons between ethnic groups was not possible given the sample size, so further research is needed to understand whether different ethnic groups have distinct clinical presentations and associated needs.

Our findings suggest that refugees report a distinct pattern of trauma exposure and have specialized treatment needs. Although refugees often possessed extensive histories of political violence exposure, a minority were receiving services for which this exposure was a focus. Whether a focus on “current” problems (e.g., ongoing separations, cultural adjustment) is optimally beneficial because proximal problems are more potent determinants or key mediators of current functioning, or instead reflects practitioners' tendency to gravitate towards more comfortable terrain (by “treating the familiar”) is a fruitful avenue for further study. Nonetheless, a significant strength of this study remains the breadth of conditions evaluated and information on patterns of service use among refugee children and adolescents in the U.S. These findings are unique in the literature to date. Future studies of

mental health service utilization among refugee youth can profitably examine barriers and facilitators to accessing services as well as indicators of resilience, using larger, nationally representative, and more ethnically diverse samples.

Acknowledgments

This manuscript was developed (in part) under grants from the Center for Mental Health Services (CMHS) (3U79SM05428210S and U79 SM061246-01) from the, Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services (HHS), Grant #1K01MH077246 from the National Institute of Mental Health (NIMH), and a Sidney Sax Early Career Fellowship from the National Health and Medical Research Council of Australia (NHMRC).

The authors express gratitude to Ernestine C. Briggs, Ph.D., and Carrie Purbeck Trunzo, MHA, UCLA/Duke University National Center for Child Traumatic Stress, Duke University Medical Center; Linda Gaskins, MA, formerly of the UCLA/Duke University National Center for Child Traumatic Stress; and Rebecca Vivrette, Ph.D., of the University of Maryland, Baltimore, for their assistance in the development of this study. We thank the 56 provider sites within the NCTSN, and in particular, the children and families who contributed to this study and furthered our understanding of trauma and psychological distress.

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Table 1
Demographic Characteristics for Refugee, U.S.-Origin, and Immigrant Samples

Sample Characteristics	Refugee (N = 60) ^a		U.S.-Origin (N = 139) ^a		Immigrant (N = 140) ^a	
	n	%	n	%	M	%
Age, years ^b	13.07	4.13	12.11	4.73	13.26	3.87
Female	N	%	N	%	N	%
	29	48.3	78	56.1	87	60.8
Race ^c						
White	19	33.9	44	31.7	18	12.6
Black	31	55.4	82	59.0	107	74.8
Other	6	10.7	13	9.4	18	12.6
Hispanic or Latino ^c	21	35.6	43	30.9	101	70.6
Place of birth						
United States ^{c,d}	4	6.8	139	100	-	-
Africa	15	25.9	-	-	5	3.7
Asia	7	12.1	-	-	8	5.9
Europe	12	20.7	-	-	11	8.2
Latin America	20	34.5	-	-	111	82.2
Primary residence						
Home w/ parents	45	81.8	97	69.8	103	72.0
With relatives	5	9.1	6	4.3	17	11.9
Foster care	2	3.6	12	8.6	8	5.6
Residential treatment	2	3.6	7	5.0	3	2.1
Other	1	1.8	17	12.2	12	8.4
Primary language spoken at home ^{c,d}						
English	9	20.5	78	78.0	15	12.7
Spanish	16	36.4	16	16.0	83	70.3
Other	18	40.9	4	4.0	13	11.0
Public insurance	21	35.0	67	48.2	47	32.9
Region						

Sample Characteristics	Refugee (<i>N</i> = 60) ^a		U.S.-Origin (<i>N</i> = 139) ^b		Immigrant (<i>N</i> = 140) ^c	
	<i>n</i>	%	<i>n</i>	%	<i>M</i>	%
Midwest	13	21.7	25	17.9	15	10.5
Northeast	27	45.0	67	47.9	73	51.0
South	9	15.0	24	17.1	35	24.5
West	11	18.3	23	16.4	20	14.0

^aSample sizes vary due to listwise deletion.

^bAges are presented as mean (*n* column) and standard deviation (% column).

^cSuperscripts ^c and ^d indicate a statistically significant bivariate relationship between variables and refugee status at *p* < .05 level according to chi-square or likelihood ratio tests with refugee status comparisons defined as: ^b immigrants vs. refugees and ^c U.S.-origin vs. refugees.

Table 2
Type of Trauma Exposure for Refugee, U.S.-Origin, and Immigrant Samples

Trauma Exposure	Refugee (N = 60) ^a		U.S.-Origin (N = 140) ^a		Immigrant (N = 143) ^a	
	n	%	n	%	n	%
Number of trauma types ^{b, c}	5.43	2.46	3.79	2.39	3.63	2.03
Sexual maltreatment/abuse ^c	4	7.3	17	12.7	27	19.1
Sexual assault/rape	10	18.2	20	14.8	26	18.8
Physical maltreatment/abuse	19	33.9	44	32.1	46	33.6
Physical assault	12	23.1	21	15.7	19	14.0
Emotional abuse/ Psychological maltreatment	18	31.6	51	37.2	46	33.3
Neglect	13	22.8	30	21.9	21	14.9
Domestic violence	21	40.4	66	49.3	50	36.8
Illness/medical	11	19.6	29	20.9	25	17.5
Serious injury/accident	10	17.5	15	11.0	23	16.4
Natural disaster	6	10.7	17	12.4	15	10.8
Kidnapping	2	3.6	4	2.9	2	1.4
Traumatic loss or separation	36	62.1	64	47.4	72	50.3
Forced displacement ^{b, c}	32	53.3	2	1.4	4	2.8
Impaired caregiver ^c	19	35.2	59	43.1	23	16.5
Extreme interpersonal violence	6	11.5	12	8.8	19	13.5
Community violence ^b	25	46.3	35	25.7	46	32.4
School violence	10	18.9	24	17.4	28	19.6
Other trauma	11	20.8	17	13.3	24	19.5

^aSample sizes vary due to listwise deletion.

Superscripts ^b and ^c indicate a statistically significant bivariate relationship between variables and refugee status at $p < .050$ level according to chi-square or likelihood ratio tests with refugee status comparisons defined as: ^b U.S.-Origin vs. Refugees, ^c Immigrants vs. Refugees.

Table 3
Clinical Problems by Refugee, U.S.-Origin, and Immigrant Samples

Clinical Issue	Refugee (N = 60) ^a		U.S. Origin (N = 140) ^a		Immigrant (N = 143) ^a	
	N	%	N	%	N	%
Acute stress disorder	12	21.8	33	25.8	30	21.3
Post-traumatic stress disorder	37	66.1	78	60.5	92	65.2
Traumatic complicated grief ^b	26	46.4	37	28.7	57	40.1
Dissociation ^b	28	50.0	26	20.2	52	36.9
Somatization ^b	24	42.9	31	24.2	46	32.6
Generalized anxiety	35	62.5	66	51.6	68	48.2
Separation disorder	14	25.0	20	15.6	19	13.5
Panic disorder	2	3.6	3	2.3	11	7.8
Phobic disorder ^{b,c}	4	7.1	1	0.8	2	1.4
Obsessive compulsive disorder	3	5.4	3	2.3	4	2.8
Depression	29	51.8	75	59.1	86	61.0
Attachment problems	24	42.9	55	43.0	57	40.1
Sexual behavioral problems ^b	5	8.9	24	18.8	10	7.1
Oppositional defiant disorder ^b	8	14.5	42	32.8	23	16.3
Conduct disorder	3	5.4	17	13.3	11	7.8
General behavioral problems	22	39.3	69	53.9	51	36.2
Attention deficit hyperactivity disorder	11	19.6	35	27.3	19	13.5
Suicidality	3	5.4	12	9.3	22	15.6
Substance abuse ^b	2	3.6	17	13.3	12	8.5
Sleep disorder	15	26.8	29	22.5	22	15.6

^aSample sizes vary due to listwise deletion.

Superscripts ^b and ^c indicate a statistically significant bivariate relationship between variables and refugee status at $p < .050$ level according to chi-square or likelihood ratio tests with refugee status comparisons defined as: ^b U.S.-Origin vs. Refugees, ^c Immigrants vs. Refugees.

Table 4
Services Utilized for Refugee, U.S.-Origin, and Immigrant Samples

Health Service	Refugee (N = 54) ^a		US-Origin (N = 139) ^a		Immigrant (N = 141) ^a	
	N	%	N	%	N	%
Inpatient psychiatric unit	1	1.9	1	0.7	4	2.8
Residential treatment center	3	5.6	8	5.8	5	3.6
Detention center, jail, or prison	1	1.9	7	5.1	3	2.1
Group home	-	-	1	1.4	2	1.4
Treatment foster care	1	1.9	3	2.2	2	1.4
Probation officer or court counselor ^b	1	1.9	14	10.2	3	2.1
Day treatment program	2	3.7	3	2.2	1	0.7
Case management or care coordination	23	42.6	41	29.5	43	30.5
In-home counseling ^c	6	11.8	9	6.5	5	3.6
Outpatient therapy	15	28.3	42	30.7	24	17.0
Outpatient treatment from a psychiatrist	5	9.4	16	11.6	9	6.4
Primary care physician pediatrician ^c	10	23.3	16	11.9	8	5.8
School counselor, psychologist, or social worker	14	29.8	36	26.9	28	20.1
Special class or special school ^b	22	41.5	25	18.2	39	27.9
Child Welfare or Department of Social Services ^b	8	16.0	43	31.6	27	19.6
Foster care	3	5.6	12	8.7	13	9.2
Therapeutic recreation services	4	7.4	7	5.0	6	4.3
Hospital emergency room	2	3.8	8	5.8	12	8.6
Self-help groups (e.g., Alcoholics Anonymous, Narcotics Anonymous)	-	-	3	2.2	1	0.7

^aSample sizes vary due to listwise deletion.

Superscripts ^b and ^c indicate a statistically significant bivariate relationship between variables and refugee status at $p < 0.050$ level according to chi-square or likelihood ratio tests with refugee status comparisons defined as: ^b U.S.-Origin vs. Refugees, ^c Immigrants vs. Refugees.