

# The “Lost Boys of Sudan”

## Functional and Behavioral Health of Unaccompanied Refugee Minors Resettled in the United States

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**Objective:** To assess the functional and behavioral health of unaccompanied Sudanese refugee minors approximately 1 year after resettlement in the United States.

**Design:** A descriptive survey.

**Setting:** Local refugee foster care programs affiliated with the US Unaccompanied Refugee Minors Program.

**Participants:** A total of 304 Sudanese refugee minors enrolled in the US Unaccompanied Refugee Minors Program.

**Main Outcome Measures:** Health outcomes were assessed using the Harvard Trauma Questionnaire and the Child Health Questionnaire. Outcomes included the diagnosis of posttraumatic stress disorder and scores on all Child Health Questionnaire subscales and global single-item assessments.

**Results:** Twenty percent of the minors had a diagnosis of posttraumatic stress disorder and were more likely to have lower (worse) scores on all the Child Health Questionnaire subscales. Low functional and behavioral health scores were seen mainly in functioning in the home and in subjective health ratings. Social isolation and history of personal injury were associated with posttraumatic stress disorder.

**Conclusions:** Unaccompanied Sudanese minors have done well in general. The minors function well in school and in activities; however, behavioral and emotional problems manifest in their home lives and emotional states. The subset of children with traumatic symptoms had characteristics that may distinguish them from their peers and that may inform future resettlement services for unaccompanied minors in the United States.

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**D**URING THE PAST 30 YEARS, much research has been conducted regarding the health status and psychological outcomes of refugees, particularly Asian refugees. In Thai refugee camps, Cambodian adolescents were found to have high levels of emotional distress related to their experiences with violence.<sup>1</sup> Longitudinal studies<sup>2,3</sup> of Cambodian refugee adolescents in the United States also found significant levels of psychological distress, school failure, and posttraumatic stress disorder (PTSD). Significantly traumatized children in the former Yugoslavia were also found to experience an extremely high prevalence of PTSD.<sup>4</sup> In contrast, Bosnian child refugees in the United States were found to have relatively lower-than-expected rates of PTSD and depression.<sup>5</sup> However, another study<sup>6</sup> of Bosnian refugees reported that 77% of the children had experienced behavioral symptoms attributed to specific exposures to war violence

and deprivation. Similar levels of distress have been found in other refugee populations, such as Guatemalans,<sup>7</sup> Afghans,<sup>8</sup> and Somalis.<sup>9</sup> Refugee children who are not accompanied by parents or other adult biological family members when resettled in other countries also seem to be at particularly high risk for distress-related symptoms and are less likely to receive psychological care.<sup>10</sup> A study<sup>11</sup> of former unaccompanied Vietnamese children repatriated to Vietnam suggested that a broad range of factors contributed to their emotional and behavioral problems.

In 2000, the United States began the resettlement of unaccompanied Sudanese refugee minors from the Kakuma refugee camp in Kenya, a group labeled the “Lost Boys of Sudan” by the news media. In the late 1980s, war forced these very young children to flee their burning villages as their parents and families were often killed. They reportedly witnessed significant atrocities, such as immediate family members being stabbed or mutilated.<sup>12</sup> Seek-

ing refuge in Ethiopia, an estimated 25 000 children trekked hundreds of miles across the savannah and desert. Along the way, hyenas and lions stalked, injured, and killed many of the youth. In 1991, the Ethiopian government expelled the Sudanese refugees, with many fleeing to Kenya in the face of attacks from soldiers and helicopter gunships. In these migrations, the children forded rivers, in which many drowned, nearly drowned, or were killed by crocodiles. Once in Kenya, thousands of the Sudanese refugees registered at the Kakuma camp, where they lived in small groups sharing a shelter and resources or with foster families. Most received some limited but voluntary education and other assistance, although violence, hunger, and inadequate living conditions remained substantial problems.<sup>12</sup>

In this study we examined the functional and behavioral health status of this group of young Sudanese refugees approximately 1 year after their arrival in the United States. Our focus was directed at the extent to which their experiences of psychologically traumatic events, refugee resettlement, and demographics were associated with clinical symptoms, psychosocial functioning, and general health status. This effort was undertaken to assess the programmatic needs of initiatives to relocate unaccompanied refugee children to the United States and to provide insight into the clinical and psychosocial expression of early traumatic experiences in children who seek refuge in unfamiliar cultural settings.

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## METHODS

### PARTICIPANTS

We surveyed a convenience sample of the 476 Sudanese minors in refugee foster care programs affiliated with the US Unaccompanied Refugee Minors Program (URMP). All 476 Sudanese minors, who arrived in the United States in late 2000 through early 2001 through the URMP, were eligible to enroll in the study. Local URMP staff solicited the participation of the youths and obtained informed consent. Staff attested to the youths' comprehension and agreement to participate. The study was conducted from February 2002 through July 2002 in collaboration with the URMP lead agencies, contracted by the US Department of State: the Lutheran Immigration and Refugee Service and Migration and Refugee Services of the US Conference of Catholic Bishops. The study was approved and monitored by the institutional review board of the Boston University Medical Center. In addition, all local resettlement programs sought and received permission from their respective state child protective services for the youths to participate.

### TRAINING OF RESEARCH STAFF

Using a videotaped orientation, investigators trained staff from 10 of 13 local URMP agencies to perform the assessments. The orientation reviewed an introduction of the study, informed consent and enrollment, implementation of the interview and instruments, potential problems or confusing questions (to minimize biasing responses), confidentiality, and assistance with potential emotional responses evoked by the questions. The nationwide scope of the study and the geographic dispersion of the refugees at each URMP site made it impractical to use independent interviewers. Staff members, some of whom were Sudanese, were familiar with the youths' schedules and backgrounds

and thus could facilitate participation and completion of the study. Although not experienced as research staff, the URMP staff members were instructed not to assist the Sudanese minors in completing questions or to offer clarifications to questions (except as described further in the "Instruments" subsection).

## INSTRUMENTS

Staff conducted interviews with either small groups or individuals. Youths wrote their own answers on their individual questionnaire packets and then were allowed to seal the packets in an envelope. Consequently, the setting should not have influenced responses owing to concerns about staff involvement or awareness of responses. All participating youths spoke and read English, although with varying levels of proficiency. All instruments were written and administered in English. Because youths were from several different ethnic and linguistic groups, it was not possible to conduct the study in the primary language of the refugees without excluding those from minority ethnic and linguistic groups. A staff member simultaneously read the questions out loud while the youths also read the questions and completed their answers on their copies. This strategy had been used in a pilot workshop conducted by the investigators with 1 local program and was effective in increasing comprehension and completion of measures as the youths' spoken English fluency was generally better than their written fluency. The strategy has also been used in previously published research.<sup>13</sup>

The pilot workshop used 2 of the instruments later used in the study: the Harvard Trauma Questionnaire (HTQ) and the Ways of Coping instrument. The workshop also used focus groups to gather information about the youths' experiences and responses. Other instruments in the pilot workshop included the Youth Self Report. Researchers used feedback from participants, staff, and foster parents in planning this study. In particular, many of the youths found that the Youth Self Report's concepts were too colloquial, culturally inappropriate, or a poor match to their maturity level. Feedback from focus groups also allowed prioritization of important background variables included in this study. Feedback from foster parents was important in understanding the youths' responses to the assessment process and the parents' understanding of key background and behavioral issues.

It was the consensus of the researchers and program staff that youth would not be willing to devote multiple sessions or more than 2 hours to the study. Therefore, brevity of the instruments was important. This time constraint prevented us from conducting comprehensive evaluations with multiple or longer instruments with diagnostic validity. Last, in addition to identifying time constraints, the workshop also allowed researchers to identify potentially confusing questions or concepts.

The 5 instruments used in the present study, which were selected and finalized based on the workshop feedback, were formatted in large, easily readable fonts. To ensure comprehensibility and cultural appropriateness, they were piloted with 8 young adult male Sudanese refugees, including 4 recently resettled through the standard resettlement program. This process, combined with the pilot workshop, allowed investigators to identify potentially confusing questions. Investigators drafted scripted clarifications for these questions that were provided to the URMP staff to ensure uniform comprehension by the youth. In addition, 1 question that was culturally confusing was translated into Dinka, the language of most of the youths, and then back-translated to ensure comprehension. Questions were written at Flesch-Kincaid literacy levels ranging from the second to seventh grades. Flesch Reading Ease scores ranged from 70.3 to 81.3, better than the accepted target ranges. Last, all questions for specific items and scales on the instruments

were in closed-ended, "check box" format that did not require the respondents to have strong written English skills.

This article reports quantitative results from 3 questionnaires. Because all participants did not answer every question, the number of respondents to particular questions varies slightly throughout the article. Percentages, when reported, reflect the number of respondents for that particular question unless stated otherwise. The first instrument was an ad hoc assessment of migration history, exposures to physically and emotionally traumatic events, current and past living conditions, and demographic information. After assessing the pilot workshop and feedback, investigators wrote questions based on known experiences of the Sudanese refugees that were deemed important to functional and behavioral health. Formats were based on existing instruments for assessment of traumatic exposures. Examples of topics included emotionally traumatic exposures (particularly violence) directed at the youths and witnessed by the youths; physically traumatic experiences, such as near-drowning; the presence of biological family and friends during migrations and in refugee camps; survival of immediate family members; experiences with refugee status determination interviews and cultural orientation; resettlement services; and home environments in the United States.

The second questionnaire was the HTQ.<sup>14</sup> A diagnosis of PTSD was defined as a score of 2.5 or greater. The HTQ has been used extensively to document PTSD in refugee populations; however, it has not been validated for Sudanese individuals. The HTQ was chosen because of its extensive use with refugees and its ability to provide graded responses to specific symptom questions and a diagnostic score. In this article, we present analyses using mainly the diagnostic score.

The third questionnaire was a short-form, self-report prototype of the Child Health Questionnaire (CHQ), a widely used health-related quality-of-life instrument.<sup>15-18</sup> Although the CHQ self-report has not been previously used with a Sudanese population, it has been tested and validated across other multicultural settings.<sup>19-22</sup> The CHQ measures the physical and psychosocial well-being of children through a variety of concepts, including physical functioning; bodily pain; general health perception; change in health over time; physical, behavioral, and emotional problems that affect social roles in school or activities; self-esteem; mental health; general behavior; family activities; and family cohesion. The CHQ is scored on a scale of 0 to 100, with higher scores associated with better health-related quality of life. Staff members instructed participants to assume that the word "family" in the CHQ referred to the people with whom they were currently living, that is, the refugees' household members. The CHQ includes basic demographic information and questions regarding medical care seeking for somatic complaints (eg, abdominal pain) and problems (eg, injuries and enuresis) often associated with behavioral and emotional problems. Multitrait analyses and internal validation were conducted and showed that the instrument performed well in this sample. In internal validation of the CHQ for this study's sample, the median observed  $\alpha$  coefficient<sup>23</sup> was 0.73 (range, 0.61-0.82).

## ANALYTIC METHODS

The HTQ and the CHQ were scored according to published criteria or cutoff values.<sup>14,15</sup> For the CHQ, which lacked external norms, we compared mean scores between groups of youths dichotomized by PTSD diagnosis. Analytic methods included *t* tests for comparisons of independent means and  $\chi^2$  analyses for comparisons of prevalences. Multivariate stepwise logistic regression analysis was conducted to identify background factors associated with PTSD. Explanatory variables included demographics, war and violence exposures, and aspects of the re-

settlement and migration process that were statistically significant in bivariate exploratory analyses. In exploratory analyses, 2 types of foster home placement were positively associated with a diagnosis of PTSD. Therefore, for multivariate analyses, this variable was dichotomized around these 2 placements ("living alone with an American family or in a group home with other Sudanese minors," yes or no).

## RESULTS

Questionnaires were returned by 304 (73%) of 416 eligible individuals at 10 participating URMP sites (64% of 476 youths enrolled in all 13 URMP sites). Two of the nonparticipating sites' caseloads included fewer than 5 Sudanese youths. One of these 2 small caseload sites could not obtain state child protective services approval for participation, and the other did not participate because of understaffing. A third site did not participate because of staff turnover at the time of study implementation. Information about nonparticipants at these sites was not available to the investigators; however, national URMP staff confirmed that the demographic characteristics of the Sudanese youths in these 3 local programs were similar to the nationwide sample with respect to age, sex, ethnicity, and time in the United States.

The CHQ was completed by 286 respondents (94%). The mean age of the respondents was 17.6 years, and 84% were boys. Of the 304 youths enrolled, 287 (94%) reported a tribal ethnicity, with 245 being Dinka (85%) and 28 being Nuer (10%). Overall, 271 youths (92%) had lived in the Kakuma camp. Others had resettled from elsewhere in Kenya, Ethiopia, and Egypt. Eighty-seven percent of the youths had been in the United States for more than 6 months (mean, 13.6 months) at the time of the study.

## WAR AND VIOLENCE EXPOSURES

In questions about their refugee flight and experiences, 273 youths (93%) reported that their villages had been attacked. Most (74%) were in their villages during the attacks, and most were either in their homes (58%) or elsewhere in the village (15%). Initially, most of the youths fled with immediate biological family or friends (64%). In addition, 69% of the respondents reported that they had biological family (either immediate or extended) with them in the refugee camps. Of these, 87% reported having multiple family members with them.

Most of the youths directly witnessed or were the victims of war-related violence. Many of the youths reported witnessing close friends or family being tortured (60%), injured (74%), or killed (76%). Twenty percent of the youths reported having been tortured themselves. Physical trauma was also highly prevalent, with 29% of the minors reporting injuries; 47%, near-drowning; 32%, near-suffocation; 31%, head trauma; and 26%, loss of consciousness.

## RESETTLEMENT PROCESS AND MIGRATION TO THE UNITED STATES

On migrating to the United States, 74% of the youths found that the immigration interviews and processing

were emotionally very difficult (46%) or a little difficult (28%) for them to complete. Best-interest determinations and refugee status determinations entailed detailed inquiry into human rights abuses experienced by the youths and family outcomes. In addition, nearly half of the youths believed that more could have been done to prepare them for life in the United States; 91% found their cultural orientation program in Africa to have been helpful. Although 89% of the respondents believed that their resettlement agency had done enough for them, in open-ended comments some expressed a need for more detailed and ongoing orientation overseas and in the United States. The youths expressed a desire for more training regarding US social and cultural issues (as opposed to orientation about the racial minority status of blacks in the United States). Several youths indicated confusion about social and cultural interactions between themselves as African immigrants and African Americans and between different ethnic groups in the United States, for example, blacks and Latinos. Regarding cultural and social adjustment, however, many responded that they felt very comfortable (42%) or a little comfortable (45%) with US society and culture in general.

#### SOCIAL AND LIVING SITUATIONS IN THE UNITED STATES

Living situations varied mainly among 4 groupings: group homes with other Sudanese minors (20%); independent living with a Sudanese family, for example, an older sibling (18%); foster care with an American family but no other Sudanese people (16%); and foster care with an American family and other Sudanese individuals (36%). Ten percent of the youths reported other settings. Half of all respondents were living in urban neighborhoods. Group activities are a substantial part of the unaccompanied minors programs' social activities: 91% of 296 youths reported involvement with other Sudanese people, with 49% reporting weekly activities and another 37% reporting monthly activities. Of the youths who participated, 90% found them helpful. Despite this high level of involvement with group activities, one fourth of the minors felt lonely or isolated where they lived. Nearly all felt safe at home (96%) and at school (95%).

#### SYMPTOMS OF PSYCHOLOGICAL TRAUMA

Overall, 241 youths completed the entire HTQ; however, up to 289 completed individual questions. Twenty percent (48 of 241) of the youths scored in the diagnostic range for PTSD. Several individual HTQ questions, mainly those related to reexperiencing traumatic events, had high prevalences of affirmative responses. Fifty-eight percent of 284 youths reported frequent "recurrent thoughts of the most hurtful event." Other questions with high prevalences of frequent symptoms were "feeling as though the event was happening again" (40%), recurrent nightmares (38%), feeling on guard (37%), sudden emotional responses when reminded of the event (37%), avoiding activities that remind them of the hurtful event (36%), and avoiding thoughts associated with the hurtful event (32%).

#### FUNCTIONAL AND BEHAVIORAL HEALTH OUTCOMES

On the CHQ global health single-item rating, 24% of 298 respondents rated their general health as excellent; 34%, very good; 32%, good; 8%, fair; and 3%, poor. On the bodily pain single-item rating, 23% of the youths reported no bodily pain or discomfort during the previous 4 weeks; 19%, once/twice; 37%, a few times; 7%, fairly often; 6%, very often; and 7%, every day. Comparing their health at the time of the study with that on arrival in the United States, 54% of the youths rated their health as much better; 24%, somewhat better; 17%, about the same; 2%, somewhat worse; and 2%, much worse.

On the global behavior single-item rating asking respondents to compare themselves with their peers, 42% rated their behavior as excellent; 35%, very good; 18%, good; 3%, fair; and 1%, poor. The family (ie, household) cohesion single-item rating asks respondents to rate their families' (ie, household's) ability to get along with one another. On this rating, 31% of the youths rated their family cohesion as excellent; 35%, very good; 22%, good; 10%, fair; and 3%, poor.

In analyzing CHQ subscales, mean scores for all subscales were significantly lower for youths with PTSD compared with those without PTSD. The youths tended to score high on CHQ subscales that corresponded to daily functioning outside of the home, that is, in school and activities with peers. However, as a group, the youths had much lower mean scores for bodily pain, general health, mental health, family (ie, household) activities, and family (ie, household) cohesion (**Table 1**).

The CHQ also revealed high prevalences of seeking medical care for somatic complaints and health problems often associated with behavioral or emotional problems (76% of 293 respondents), including headaches (50% of 286), stomachaches (39% of 289), bad dreams or trouble falling asleep (31% of 291), anorexia (30% of 285), injuries due to accidents (28% of 290), chest pains (27% of 287), lack of energy for a long time (22% of 282), diarrhea or constipation (17% of 284), and enuresis (8%).

#### DEMOGRAPHIC VARIABLES AND TRAUMA EXPOSURES ASSOCIATED WITH PTSD

In bivariate analysis, a variety of factors were associated with PTSD. The presence of any biological family or friends during migrations or in Kakuma was not associated with either increased or decreased risk of PTSD. However, separation from immediate family and direct personal injury were associated with increased risk of PTSD. Conversely, being at home in the village during the attack was associated with a reduced risk of PTSD. Witnessing violence directed at family, friends, or strangers was not associated with PTSD, whereas being directly injured or tortured was. In particular, head trauma was associated with a doubled risk of PTSD.

Some experiences in the United States also were associated with PTSD in bivariate analyses. Living in a group home or being in foster care alone with an American family, feeling lonely or isolated where they live, and less participation and satisfaction with group activities were associated with having PTSD. In contrast, living in an urban

**Table 1. Results of the Child Health Questionnaire Subscales Compared With the Harvard Trauma Questionnaire Score Diagnostic for Posttraumatic Stress Disorder**

CHQ Subscale	CHQ Subscale Score			P Value
	Overall, mean (SD)	PTSD, mean	No PTSD, mean	
Physical functioning	84.4 (19.7)	79.2	87.7	<.01
Roles: social/emotional	82.1 (24.5)	70.5	86.9	<.01
Roles: social/behavioral	90.5 (19.5)	84.8	93.5	.02
Roles: social/physical	89.4 (21.3)	81.9	92.1	.04
Bodily pain	64.9 (28.5)	51.3	69.1	<.01
Behavior	82.3 (17.3)	77.5	84.6	<.01
Mental health	66.1 (17.0)	54.4	69.4	<.01
Self-esteem	83.7 (14.7)	76.7	85.8	<.01
General health	67.2 (17.1)	63.0	70.3	.01
Family activities	71.1 (25.6)	54.5	77.3	<.01
Family cohesion	76.1 (25.5)	69.6	79.1	.03

\*Abbreviations: CHQ, Child Health Questionnaire; PTSD, posttraumatic stress disorder.

neighborhood and having been in the United States less than 6 months were not associated with PTSD. Most variables related to cultural and social adjustment or training were not associated with PTSD except that Sudanese youths who expressed the need for better preparation for their migration to the United States and less comfort with US society and culture were more likely than others to have PTSD. Finally, feeling safe at home and at school were associated with a reduced risk of PTSD.

Variables significant at the  $P < .05$  level from exploratory analyses were entered into a stepwise multivariate logistic regression analysis. Ever having been injured was independently associated with an increased likelihood of PTSD. Other overseas variables did not prove to be associated with PTSD. However, foster care placement and a variety of other experiences in the United States were associated with increased risk of PTSD (**Table 2**).

#### COMMENT

The findings from this study suggest that the Sudanese youths surveyed exhibited generally high functional outcomes despite years of deprivation and trauma during childhood. This observation, supported by recent research on coping skills among youths at 1 of the sites participating in this study,<sup>24</sup> provides some assurance that efforts to provide a safe and supportive environment for traumatized refugee children can be associated with good health and psychosocial outcomes. Although this study cannot address the specific utility of particular services or interventions, findings support efforts to address the needs of refugee children through resettlement programs such as the URMP.

Despite the general resilience of the surveyed minors, there was an important subset of children who exhibited clinical and psychosocial sequelae and whose experiences seemed to have differentiated them from their peers. Minors with PTSD were more likely to have been separated from immediate family during attacks on their villages as part of a larger background of the most traumatized youths being those who had been in their villages near their immediate family when attacked. Hav-

**Table 2. Associations of Background and Demographic Variables With the Harvard Trauma Questionnaire Score for Posttraumatic Stress Disorder by Multivariate Logistic Regression Analysis**

Variable	Odds Ratio (95% Confidence Interval)
Feels safe at school (vs not feeling safe at school)	0.19 (0.05-0.70)
Finds activities with Americans to be helpful (vs no participation or not finding them helpful)	0.35 (0.13-0.96)
Living in group home or in foster care alone with an American family (vs other home setting)	2.70 (1.24-5.87)
Ever injured (vs not ever injured)	2.87 (1.29-6.39)
Feels lonely at home (vs not feeling lonely at home)	3.38 (1.49-7.68)

ing been a direct victim of violent acts was associated with PTSD, whereas the universal experience of witnessing violence may have offered shared opportunities for recovery from that trauma. By grouping the Sudanese children into small household units in Kakuma, relief agencies may have afforded opportunities for the children to share and understand their common experiences of trauma, such as their migrations and exposures to wild animals; in contrast, the Sudanese youths may have found it more difficult to verbalize and share with others their less common, individual direct victimization, perhaps in part owing to PTSD.

Their US experiences may also have contributed to the youths' psychosocial and health status. Children who were living alone in foster care with an American family or in a group home felt more isolated or lonely and participated less frequently in group activities and were also more likely to have PTSD and lower CHQ scores. This suggests that relative levels of family and community engagement after arriving in the United States may mediate the ultimate impact of early trauma on later psychosocial functioning. This study, however, cannot distinguish whether individual characteristics (such as having

PTSD) of the Sudanese youths led to specific home placements in the United States or whether the home placements themselves factored into the persistence or development of PTSD symptoms.

This relationship of home setting to behavioral and functional health outcomes of unaccompanied refugee minors may prove to be important in the resettlement of children into cultural settings profoundly different from that of their origins. In contrast to the Sudanese refugees, Bosnian refugees tended to be more familiar with Western and US culture and lifestyles. This familiarity may explain why a study<sup>5</sup> of Bosnian adolescents after 1 year of being in the United States did not reveal expected levels of psychological distress despite the high rates of traumatic exposures and symptoms of children in Bosnia<sup>4,25</sup> and shortly after arrival in the United States.<sup>6</sup> In the case of the Sudanese minors, it is also unclear whether racial differences between the youths and their foster families (as was the case for most placements) may have compounded cultural differences. Risk factors identified in this study may be used to guide home placement decisions in the United States for future unaccompanied minors.

The potential importance of cultural adjustment in mediating behavioral outcomes of unaccompanied refugee minors resettled in a third country, such as the United States, is significant. The expressed desire for extended cultural orientation should be considered overseas and in the United States. The overseas orientation of refugees bound for the United States is heavily focused (and rightly so) on practical matters, such as food, housing, transportation, and finances, with only 1 of 13 curriculum units devoted to cultural adjustment.<sup>26</sup> Because of the more intensive social services and supports received by unaccompanied refugee minors in the United States, their orientation needs may differ from those of other refugees resettled through the regular resettlement process. As such, orientation for unaccompanied minors might include fewer of the practical matters and more social and cultural content. Similarly, particular attention should be given to the emotional needs of minors who have experienced direct physical trauma, such as torture or injury.

After resettlement in the United States, refugees are typically dispersed, with rapidly decreasing contact with resettlement agencies. Consequently, much US research on refugees focuses on discrete clinic populations in the United States or populations in refugee camps overseas that limit generalizability to the broader refugee populations in the United States. In contrast, the present study used a screening protocol implemented by resettlement agencies. The study had a pragmatic focus on general well-being and functional health instead of diagnoses. Although the "Lost Boys of Sudan" may be viewed as unique, many other refugees experience similarly traumatic situations and migrations. The Sudanese youths' experiences may seem extreme, but they are becoming typical of children in contemporary refugee crises in Somalia, Bosnia, Rwanda, and, more recently, the Darfur region of Sudan. Consequently, the lessons of this study should be informative for policy decisions regarding other refugees and for the development of relief or resettlement services for unaccompanied minors. Results can be used to help refine existing programs and to guide the development of new, ameliorative initiatives.

This study has several limitations. The small number of instruments reduced the study's ability to determine other specific mental health outcomes, such as depression or anxiety, that may have related to the sense of loneliness or isolation felt by some of the youths. In addition, the inability to survey all Sudanese youths resettled in the United States could bring into question the generalizability of the study. These flaws reflect the pragmatic difficulties of surveying refugees, a challenge that has constrained previous research; however, selective, purposive sampling of refugee populations has been shown to be statistically valid.<sup>27</sup> More extensive sampling and time involved would have limited the study's ability to enroll participants. Despite this, the study's utility is supported by the observation that the 3 sites that did not participate did not serve a distinctive group of Sudanese minors, and almost three quarters of the eligible children at the 10 participating sites participated. In keeping with our findings, a study<sup>10</sup> of Sudanese refugee children in Uganda, although using a different trauma instrument, found that traumatic symptoms were highly prevalent, as did another study<sup>13</sup> of adult Sudanese refugees in Uganda.

The reliance on a single instrument to assess background experiences may be subject to recall bias, although forgetting past events may have been less of an issue than denied or altered memories of highly traumatic events. Similarly, because of the role of staff members or the effects of trauma, some youths may not have answered questions truthfully, or at all, if they reflected on resettlement services or troubled them emotionally. However, the instrument was written to capture pertinent experiences known to have affected the Sudanese refugees. Instrument development and selection was completed with feedback and advice from the author of the psychological best-interest determinations of the Kakuma Sudanese minors for the United Nations High Commissioner for Refugees.<sup>12</sup>

The choice of instruments partly reflected the feasibility and acceptability issues of conducting a voluntary study with adolescent refugees who had already been intensely scrutinized by local communities and the news media. Overloading respondents with multiple other instruments likely would have further reduced completion rates. The choice of the HTQ represented a logical emphasis on traumatic symptoms based on the well-documented experiences of the Sudanese refugees. It also had the added benefit of offering a diagnostic classification for a highly prevalent mental health disorder. The choice of the self-report version of the CHQ reflected its general focus on physical and behavioral problems and their impact on daily life functioning. In addition, this version of the CHQ matched well with the maturity levels of the Sudanese youths encountered in this study. Last, as noted in the introduction, this study was not conducted in an attempt to define psychopathologic characteristics of Sudanese refugee minors but rather to describe general psychosocial functioning and health status in relation to the presence of traumatic clinical symptoms and refugee experiences.

Although the survey was constructed with careful attention to cultural, linguistic, and literacy issues, some question formats were still confusing to some respondents. Some minors had difficulty with the Likert scales. This may reflect differing levels of English fluency and

lack of familiarity with this format for data gathering. Several factors, though, suggest that comprehension was sufficient. First, the results of the CHQ statistically correlated with those of the HTQ. Second, open-ended responses were generally appropriate to the question. Third, sequential questions in which the response to the following question was related to the response to the first question were answered appropriately.

Successful integration of refugees into US society (emphasizing work and school success) may be difficult in the face of functional health impairments. The Sudanese minors seemed to function well in school and activities outside the home. However, problems emerge in their home lives and emotional states, as evidenced by low scores on the CHQ family and mental health subscales. This finding suggests that the criteria used to assess the "success" of resettlement programs should include broader measures of household or family life and emotional well-being. In this manner, the findings of this study outline not only the promise and challenges of resettling refugee children but also the important opportunities for innovative social service and health care interventions. As such, a comprehensive approach could help ensure that future cohorts of unaccompanied refugee minors in the United States will reach their full psychological and physical potential to live full and vibrant lives.

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