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Abstract

Purpose – The purpose of this paper is to investigate the prevalence of household food insecurity among immigrant women connected to perinatal programs offered through a community-based organization in Edmonton, and to explore their experiences in coping with food insecurity.

Design/methodology/approach – This study utilized a mixed methods research design. A community-based participatory research approach was used to engage health workers who were connected to immigrant women and families through the Multicultural Health Brokers Cooperative in Edmonton. Through the health workers a sample of 213 immigrant women connected to their perinatal programs completed the Household Food Security Survey. Following the survey, 17 women completed semi-structured interviews which were analyzed using content analysis.

Findings – The vast majority of women (94 percent (n = 199)) lived in food insecure households, and 53 percent (n = 112) in severely food insecure. In semi-structured interviews, women specifically described not having enough money to buy vegetables, fruit and meat, and perceiving a lack of control over foods they ate and offered to their families.

Practical implications – This study highlights the need for support to be provided to immigrant families for acquiring healthy food in Canada.

Originality/value – The mixed methods design with a decent sample of often underrepresented research participants highlights an area in need of further research and greater support.

Keywords Immigrants, Refugees, Mixed methods, Food insecurity, Pregnancy, Community-based

Paper type Research paper

Introduction

Poor diet quality in pregnancy can increase the risk of complications for both mother and baby as well as the long-term risk of chronic disease such as diabetes and cardiovascular disease (Barker, 1997; Olson 2008; Rasmussen et al., 2009). Evidence consistently shows that lower socioeconomic status is negatively associated with aspects of a healthy pregnancy, including women’s ability to access and consume healthy foods, and meet gestational weight gain guidelines (Laraia et al., 2010; Olson, 2010; Hromi-Fiedler et al., 2011). Moreover, the increased nutrient and caloric demands of pregnancy put pregnant women of low socioeconomic status at a higher risk of food insecurity (Laraia et al., 2006), defined as “inadequate or insecure access to food because of financial constraints” (Tarasuk et al., 2014).

Household food insecurity is a significant public health issue in Canada, with 12.6 percent of households experiencing some degree of food insecurity. As such, it is estimated that food insecurity among pregnant women in Canada is increasing.
insecurity affects four million individuals, and one in six children (Tarasuk et al., 2016). The prevalence of household food insecurity is greater (19.6 percent) among families that recently immigrated (<5 years) to Canada compared to the national average (12.6 percent), revealing that households of recent immigrants are more likely to experience food insecurity (Tarasuk et al., 2016). However, when PROOF (2017) (the Food Insecurity Policy Research team based at the University of Toronto, Canada) examined the association between recent immigration and food insecurity, they found that recent immigration status did not remain independently associated with food insecurity once the analysis was adjusted for covariates such as income, education, household composition and home ownership. This indicates that similarly to households of Canadian-born individuals, immigrants with low income who rent their dwellings and are lone parents of young children are at greater risk of food insecurity (PROOF, 2017). In addition, among recent immigrants to Canada, English proficiency is significantly associated with food insecurity, with families who report poor English having higher rates of food insecurity (Vahabi et al., 2011). Language barriers may not only prevent immigrants from accessing employment that generates sufficient income, but also hinder their ability to navigate food systems in their new countries (Hadley et al., 2010; Vahabi et al., 2011).

Between 2011 and 2016, Canada received 1,212,080 immigrants, categorized by Statistics Canada as economic immigrants, immigrants sponsored by family, and refugees (hereafter called immigrants unless specific facts and categories are being discussed) (Statistics Canada, 2017). Of those, nearly half were women of childbearing age who might experience pregnancy and childbirth in Canada while being at an increased risk for food insecurity. During the same period, the province of Alberta received approximately 208 thousand immigrants (Statistics Canada, 2017), and almost 40 percent of them settled in the Edmonton Metropolitan Area (Statistics Canada, 2016a, b). Many immigrant women (including those with refugee status) might have received additional support to help them settle and integrate into life in Canada from community-based organizations (CBOs).

A previous study we conducted within a CBO in Edmonton that provides additional support to immigrant women during pregnancy and postpartum suggested that Northeast African women struggled with the high cost of healthy foods in Canada (Quintanilha et al., 2016). Yet, to our knowledge, no data are available on the prevalence and experiences of food insecurity among pregnant and postpartum, immigrant women linked to CBOs in Edmonton. The objectives of this study were: to investigate the prevalence of household food insecurity among women connected to perinatal programs within one CBO and their families, and to explore the experiences of women coping with food insecurity using a mixed methods research design.

Methods

Research approach

We used a community-based participatory research (CBPR) approach to engage health workers who were connected to immigrant women and families through the Multicultural Health Brokers (MCHB) Cooperative in Edmonton. The MCHB is an independently run health worker (i.e. health broker) cooperative that provides perinatal services and supports to at-risk immigrant women and families, including economic immigrants, refugees and refugee claimants, in difficult life circumstances. The MCHB offers clients strategic services related to housing, food security, and education (including language training for women) (Torres et al., 2013).

A CBPR approach is viable for working with minority groups, and addressing health disparities that affect people living in marginalized communities (Israel et al., 2010). The principles of CBPR guided this study, with health brokers deciding on the most appropriate ways to create an exchange among themselves, the researchers, and participants, as well as actively participating in the planning and implementation of quantitative and qualitative data collection strategies. As researchers, we sought consistency with ethical principles of all health brokers and women involved throughout the research process, as to ensure respectful data generation that truly reflected participants’ realities (Edwards et al., 2008).
Research design

We used an exploratory sequential mixed method research (MMR) design (Creswell and Plano Clark, 2011). MMR is defined as “research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study” (Tashakkori and Creswell, 2007, p. 4). The exploratory sequential MMR design meant that quantitative surveys were administered and analyzed, and followed up by qualitative interviews that were aimed at explaining, elaborating and illustrating quantitative data (Creswell and Plano Clark, 2011). Quantitative and qualitative results were mixed and interpreted together in the discussion of findings.

Quantitative phase

We used the Household Food Security Survey Module (HFSSM) from the Canadian Community Health Survey (CCHS) to assess food insecurity in a convenience sample of women connected to the MCHB perinatal programs in the Fall of 2016. The HFSSM consists of 18 questions that monitor households’ experiences of food insecurity over the previous 12 months (Tarasuk et al., 2016). The questions in the HFSSM focus on “self-reports of uncertain, insufficient or inadequate food access, availability and utilization due to limited financial resources, and the compromised eating patterns and food consumption that may result” (Government of Canada, 2012), while distinguishing the experiences of food insecurity of adults from those of children in the household (Tarasuk et al., 2016). In the HFSSM survey, possible responses in relation to the experiences of adults or children are often true, sometimes true, never true and do not know/refuse to answer. Some of these questions are followed sub-questions that specifically examine the frequency of shortages and disruptions in food consumption. In the USA, food insecurity is monitored using the same questionnaire but the classification of households’ food insecurity status and terminology differs from what is used in Canada (Tarasuk et al., 2016).

We introduced the HFSSM questionnaire during a health brokers’ monthly meeting, and explained the purpose of investigating food insecurity among women. We emphasized the sensitivity of some of the questions that would be asked about individuals’ households, and worked with health brokers to define terms that could be confusing to their clients (e.g. balanced meals were defined as healthy meals that included a variety of foods). Health brokers who felt they had the time to administer the questionnaire with women connected to perinatal programs in their respective communities over the following four weeks were provided with printed questionnaires. Health brokers discussed the study with their clients in a setting that the brokers perceived as appropriate (e.g. during home visits or before/after prenatal classes), obtained informed consent and invited women to complete the questionnaire.

The HFSSM was conducted in women’s mother tongue. Women’s personal information and demographics were not collected. Many of the women were involved with child protective services, and the health brokers were not comfortable recording information that would enable their clients’ identification. However, we were able to record women’s country/region of origin based on the ethnic background of the health broker that administered their questionnaire.

Responses to the HFSSM were recorded on paper questionnaires, transferred to Harris et al. (2009), and analyzed using STATA (Version 14, StataCorp LP). Based on the number of positive responses (i.e. yes or often true/sometimes true) to the 18 questions in the HFSSM, households were classified as being food secure or marginally, moderately or severely food insecure (Table I). Whereas food secure households have no indication of any income-related problems of access to food, severe food insecure households have extensive compromises in adults and/or children’s eating patterns (Tarasuk et al., 2016).

The proportion of families who reported being food secure, having marginal food insecurity, moderate food insecurity or severe food insecurity was determined in the whole group, and also categorized by whether the families did or did not have children. Because we did not collect any demographic information, we relied on the HFSSM’s answers to determine the number of households that had children under the age of 18. The proportion of families responding affirmatively to each of the items on the HFSSM were also explored. Finally differences in food
security status by women and their families country/region of origin, as classified by Citizenship and Immigration Canada (2014) – e.g. Africa and Middle East vs Asia and Pacific, were assessed using Fisher’s exact test, as some categories contained fewer than five observations. A $p < 0.05$ was considered statistically significant.

**Qualitative phase**

The results from the quantitative phase guided purposeful sampling during the qualitative phase of the study. We had learned that women from Africa and the Middle East were more likely to experience food insecurity than those from other regions in the world; therefore, we approached health brokers from African communities who had previously worked with us, and invited them to collaborate in conducting semi-structured interviews with women in their communities (Quintanilha et al., 2016). We explained to health brokers that our main purpose was to explore pregnant and postpartum women’s experiences with food insecurity. The health broker representing the Somali community expressed interest in participating after discussing the study with women in her program. We conducted interviews with a sample of Somali women who the health broker identified as experiencing food insecurity. These interviews were conducted four months after the HFSSM questionnaires were administered, and although some women could have participated in the quantitative phase, we did not establish any inclusion/exclusion criteria in relation to their previous involvement.

The interviews were conducted after family classes (when childcare was provided) hosted at the MCHB Cooperative on the weekends. An English-speaker researcher moderated the interview, and the health broker carried out real-time interpretation. Most Somali women (13 out of 17) requested not to have their interviews audio recorded, and, as a result, the researcher took notes as the health broker interpreted participants’ answers. The researcher debriefed with the Somali health broker after interviews to clarify women’s answers. The first few interview questions investigated women’s sociodemographic and household characteristics, including country of birth, refugee status, number of years living in Canada, number of children and adults in the household, and source of income. The remaining questions were aimed at exploring women’s perceptions of the foods available in their homes in terms of quantity, quality and representation of their cultural heritage. Additionally, we explored women’s sense of control over what was available to and consumed by their families, and ended the interviews with a question about what women believed could be in place in order to help them have access to the foods they need/want.

Interview notes were typed into word documents, whereas recorded interviews were transcribed verbatim. All interview data were organized in NVivo (Version 11, QSR International), and analyzed using qualitative content analysis to inductively derive codes and categories (Hsiu-Fang and Shannon, 2005; Elo and Kyngas, 2007). One researcher (MQ) was responsible for coding transcripts, and bringing emerging categories to all involved researchers for review, discussion and verification.

<table>
<thead>
<tr>
<th>Food security status</th>
<th>Interpretation</th>
<th>10-item adult food security scale</th>
<th>8-item child food security scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food secure</td>
<td>No report of income-related problems of food access</td>
<td>No items affirmed</td>
<td>No items affirmed</td>
</tr>
<tr>
<td>Marginal food</td>
<td>Some indication of worry or an income-related barrier to adequate, secure food access</td>
<td>Affirmed no more than 1 item on either scale (or one item in either scale affirmed)</td>
<td>No items affirmed</td>
</tr>
<tr>
<td>insecurity</td>
<td>2 to 5 positive responses</td>
<td>2 to 4 positive responses</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>Compromise in quality and/or quantity of food consumed by adults and/or children due to a lack of money for food</td>
<td>6 or more positive responses</td>
<td>5 or more positive responses</td>
</tr>
<tr>
<td>food insecurity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe food</td>
<td>Disrupted eating patterns and food intake among adults and/or children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>insecurity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from the Household Food Security in Canada (2014) Cite Tarasuk et al. (2016)
Ethics

This study received the University of Alberta Research Ethics Board approval. Consent to participate in the quantitative phase of this study was given by participants to health brokers orally, and confirmed with their overt participation by responding to the questionnaire. For the qualitative phase, due to the language barriers between researchers and participants, interpreters were asked to explain the purpose of the research at the beginning of each interview, and reiterate with women that participation was voluntary. Participants provided oral consent prior to engaging with the researcher in qualitative semi-structured interviews.

Results

Quantitative phase

A sample of 217 women completed the HFSSM; four incomplete questionnaires were excluded and 213 were analyzed to determine food security status. In sum, 94 percent of households included children (n = 201). In addition, 94 percent of women reported some level of food insecurity and 53 percent were severely food insecure (Table II).

Table III shows the proportion of women who answered affirmatively for each item on the HFSSM questionnaire. In the past year, 85 percent of women reported households’ members did not

<table>
<thead>
<tr>
<th>Table II</th>
<th>Household food security status for all households (n = 213), households with children under 18 years of age (n = 201) and households with no children (n = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food security status</td>
<td>All households (n = 213)</td>
</tr>
<tr>
<td>Food secure</td>
<td>14 (6)</td>
</tr>
<tr>
<td>Marginal food insecurity</td>
<td>6 (3)</td>
</tr>
<tr>
<td>Moderate food insecurity</td>
<td>81 (38)</td>
</tr>
<tr>
<td>Severe food insecurity</td>
<td>112 (53)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table III</th>
<th>Number and proportion (%) of households that reported experiencing income-related problems of access to food in the past 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the past 12 months, of all 213 households</td>
<td>Adult food security scale items</td>
</tr>
<tr>
<td>Worried food would run out before the end of the month</td>
<td>n (%)</td>
</tr>
<tr>
<td>Ran out of food and had no money to buy more</td>
<td>182 (85)</td>
</tr>
<tr>
<td>Could not afford balanced meals</td>
<td>173 (81)</td>
</tr>
<tr>
<td>Adults cut the size or skipped meals (yes/no)</td>
<td>152 (77)</td>
</tr>
<tr>
<td>Adults cut the size or skipped meals almost every month or some months (frequency)</td>
<td>91 (43)</td>
</tr>
<tr>
<td>Ate less than felt should because there was not enough money to buy food</td>
<td>79 (38)</td>
</tr>
<tr>
<td>Was hungry but could not afford food to eat</td>
<td>104 (49)</td>
</tr>
<tr>
<td>Lost weight because no money to buy food</td>
<td>87 (41)</td>
</tr>
<tr>
<td>Adults did not eat for a whole day because there was not enough money to buy food (yes/no)</td>
<td>73 (34)</td>
</tr>
<tr>
<td>Adults did not eat for a whole day almost every month or some months (frequency)</td>
<td>68 (32)</td>
</tr>
</tbody>
</table>

| In the past 12 months, of 201 households with children under 18 years | Child food security scale items |
| Relied on a few low cost foods to feed children | n (%) |
| Could not afford to feed children a balanced meal | 166 (83) |
| Children were not eating enough because could not afford enough food | 137 (68) |
| Adults cut the size of any of the children’s meals because they could not afford to buy more food | 79 (39) |
| Children ever skipped meals because there was not enough money for food (yes/no) | 74 (37) |
| Children skipped meals almost every month or some months (frequency) | 68 (34) |
| Children were hungry but could not afford more food | 79 (39) |
| Children did not eat for a whole day because there was not enough money for food | 62 (31) |
have enough money to eat balanced meals; 43 percent ($n=91$) of adults cut meal sizes or skipped meals because there was not enough money for food; and 31 percent ($n=62$) of children did not eat for a whole day because there wasn’t enough money for food (Table III).

Household food security status according to families’ country/region of origin is presented in Table IV. A significantly greater proportion of households from Africa and the Middle East reporting being severely food insecure compared with households from other continents and regions of the world ($p < 0.001$). This significance remained following the exclusion of households of South and Central America origin.

**Qualitative phase**

We interviewed 17 Somali women about their experiences of food insecurity. All women had refugee status upon moving to Canada, had been living in Canada for an average of six years (between 6 months and 12 years) and were either permanent residents of Canada ($n=12, 71$ percent) or Canadian citizens ($n=5, 29$ percent) at the time of interviews. Information about women’s households is presented in Table V.

Using qualitative content analysis, we identified three main categories in women’s description of their experiences in coping with food insecurity in their households: maybe food in acceptable quantity but not quality; sense of control; and vision for a food secure future.

**Maybe food in acceptable quantity but not quality**

Somali women commonly described not having enough money to buy sufficient amounts of food throughout the month. They described various strategies to “stretch” the food available as much as possible in a month, including decreasing size and frequency of meals. Although some participants did not describe issues with quantity of foods available in their homes, all of them described not

<table>
<thead>
<tr>
<th>Region of family origin</th>
<th>Food Secure</th>
<th>Marginal food insecurity</th>
<th>Moderate food insecurity</th>
<th>Severe food insecurity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n (%)</strong></td>
<td></td>
<td>$n$ (%)</td>
<td>$n$ (%)</td>
<td>$n$ (%)</td>
</tr>
<tr>
<td>Africa and Middle East ($n=118$)</td>
<td>0</td>
<td>1 (1)</td>
<td>46 (39)</td>
<td>71 (60)*</td>
</tr>
<tr>
<td>Asia and Pacific ($n=60$)</td>
<td>11 (18)</td>
<td>5 (9)</td>
<td>20 (33)</td>
<td>24 (40)</td>
</tr>
<tr>
<td>Europe and UK ($n=25$)</td>
<td>3 (12)</td>
<td>0</td>
<td>13 (52)</td>
<td>9 (36)</td>
</tr>
<tr>
<td>South and Central America ($n=2$)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2 (100)</td>
</tr>
</tbody>
</table>

*Note:* $p < 0.001

<table>
<thead>
<tr>
<th>Household characteristics</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of adults in the household</td>
<td></td>
</tr>
<tr>
<td>Lone-parent households (mother only)</td>
<td>6 (35)</td>
</tr>
<tr>
<td>Two or more adults in the household</td>
<td>11 (65)</td>
</tr>
<tr>
<td>Number of children in the household</td>
<td></td>
</tr>
<tr>
<td>0–3 children</td>
<td>9 (53)</td>
</tr>
<tr>
<td>4–6 children</td>
<td>5 (29)</td>
</tr>
<tr>
<td>7 or more children</td>
<td>3 (18)</td>
</tr>
<tr>
<td>Income source</td>
<td></td>
</tr>
<tr>
<td>Employment (at least one adult in the household)</td>
<td>7 (41)</td>
</tr>
<tr>
<td>Social assistance</td>
<td>10 (59)</td>
</tr>
</tbody>
</table>
being able to afford the diet quality they wanted. The quote below exemplifies some of the factors women considered when thinking about food for themselves and their families:

You have to think about what you are eating and what you are buying because you only have a certain amount [of money]. You’re always thinking what you are going to do and how you are going to do it. (Somali woman, mother of 7)

Compromises in quality commonly meant not having enough money to buy meat, vegetables and fruit. Somali women described rice, bread and pasta as the main foods they could afford: “Food might be available every day but may not be the best quality” (Somali woman, mother of 3).

The issues with quantity and quality of foods available in women’s households were stressful for participants who commonly reminisced about the fact that “back home” (i.e. Somalia) they had less money than “here” (i.e. in Canada), yet struggled less to make ends meet:

I’m happy with what I have here [in Canada] because I have no alternative. This country is safe and that’s why I came here. But at the same time when you compare with Somalia the problems are so different. There I could have lots of things but it wasn’t safe, here it’s safe but everything I need costs a lot of money. (Somali woman, mother of 7)

Comments about stress and contrasts between “back home” and “here” allowed us to explore women’s sense of control over their food and lives.

Sense of control

We found that food insecurity had profound effects on women’s sense of control as individuals, and mothers. Participants’ expressed a lack of control over foods they ate and offered to their families, and linked this to their stress: “I don’t feel I have much control due to my income. It’s not easy. I feel I have been stressed for the past six months” (Somali woman, mother of 2).

As women, participants struggled with the fact they did not have enough money to buy the foods that represented their cultural identity, and were commonly prepared “back home.” As examples, they mentioned their inability to buy Halal meat, and African ingredients that were sold locally at specialty shops. In addition, Somali women expressed frustration and sadness for not being able to help family members who were struggling “back home.” This was especially difficult, given that their families “back home” believed they had the finances to help because they were living in Canada. This made women feel powerless, and with a sense of unfulfilled obligation toward their extended family.

As mothers, a low sense of control overlapped with women’s negative perceptions of the quality of their children’s diets. Women commonly described not feeling in control over their children’s diets because they could not afford the foods they perceived as best for them: “Sometimes as a mother I worry about what food I am feeding my children and if it will have an impact on their health” (Somali woman, mother of 4). The fact that 16 of our 17 participants already had at least one child in their household made their insights into food insecurity commonly reflect dreams and hopes for their whole family (adults and children). They shared with us things they believed that could improve their income, and likely make them food secure.

Vision for a food secure future

When we asked Somali women what had helped or could help them to eat better and to have the foods they wanted/needed at home, they commonly shared their vision for a future where money would not prevent them from affording the foods they wanted for their families. Women’s vision for a food secure future included education for them and their children, employment opportunities for them and their spouses and, for those already employed, higher earnings: “I would like to have a job that pays well enough for me to afford the life that my kids and I would like to have” (Somali woman, mother of 4).

It is worth noting that even though we probed for community programs that provided food aid to families in need (e.g. food banks, community kitchens), women did not elaborate on how these could help them. Many women acknowledged they had been able to access them in the past, and were grateful for that, but perceived better income as the main answer to a food secure future.
As such, their visions for a food secure future really reflected dreams for their lives in Canada, including getting an education, following certain career paths (e.g. social work and nursing) or opening their own business (e.g. Somali sweet shop), as exemplified in the following quote:

I would like to have a good life, to finish my education and to get a job. I want to be educated and my children to get good education too so that they can be independent in the future. (Somali woman, mother of 3)

Discussion

This study investigated the prevalence and experiences of household food insecurity among immigrant women and families connected to a CBO that supports them in Edmonton, Canada. Through the HFSSM administered in the quantitative phase, we found staggering rates of severe food insecurity (53 percent) in our sample of 213 households. Yet, it were the data collected in the qualitative phase that added subtleties of what coping with food insecurity meant for Somali women and their families.

We found an overall prevalence of 94 percent of any food insecurity, a rate that was considerably higher than the 19.6 percent rate for recent immigrants (<5 years) found in the CCHS data (Tarasuk et al., 2014). Reasons for the discrepancies between our study and the CCHS reports include the fact that the CCHS data are representative of the Canadian population, whereas our data were collected with a relatively small convenience sample of 213 households connected to a CBO in Edmonton. In addition, the CBO, the MCHB, supports at-risk immigrant women who might be living with low income, feeling socially isolated or coping with stressors such as mental health issues, family violence or addictions among family members. All of these factors put women’s households at a greater risk for food insecurity (Laraia et al., 2006; Power et al., 2017).

Moreover, the HFSSM was administered through CCHS in Canada’s official languages (English and French) which potentially excluded vulnerable immigrant groups from the national data (Vahabi et al., 2011). Refugees, in particular, commonly struggle with education and literacy as many of them spend a considerable amount of time in refugee camps where educational opportunities are rare (Henderson et al., 2017). An examination of food insecurity among recent Latin American immigrants residing in Toronto found that 56 percent of their sample were food insecure despite participants’ high educational level (Vahabi et al., 2011). Interestingly, in the same sample, Vahabi et al. (2011) found that the “ability to converse in English” was a significant predictor of household food insecurity with those who reported good/excellent English being more likely to be food secure. Because we did not collect any personal information and demographic data in the quantitative phase of our study, we could not investigate any associations between food insecurity levels in our sample and variables such as length of stay in Canada, English fluency, immigration category (economic immigrants vs refugees), household composition, income source, etc.

For the qualitative phase, we tried to recruit women that were from Africa or the Middle East, as a greater proportion reported severe household food insecurity in the quantitative phase. We cannot infer any possible explanations for this finding but it is possible that African and Middle Eastern women who responded to the HFSSM were more likely to be recent refugees given that Africa and the Middle East were the top regions of birth of refugees who arrived in Canada between 2011 and 2016 (Statistics Canada, 2016a, b). In addition, refugees, especially women, might arrive in Canada in poorer health, without educational and language training, and having experienced significant trauma; therefore, they could be at a higher risk for an array of social and health issues (Small et al., 2008; Gagnon et al., 2009; Newbold, 2009; Merry et al., 2011). All Somali women interviewed in this study had refugee status upon moving to Canada. Refugees’ low education, literacy and poor English skills represented factors linked to household food insecurity in other studies conducted with refugees who have resettled in the USA or Canada (Hadley et al., 2010; Henderson et al., 2017).

Further, a large proportion of Somali women who were interviewed in the qualitative phase were lone parents (35 percent), and had more than three children younger than 18 years of age
(47 percent), factors that also make them more vulnerable to household food insecurity (Alberta Health Services, 2017). Somali women and their children are susceptible to various poorer health outcomes associated with household food insecurity (Tarasuk et al., 2016; Alberta Health Services, 2017). In particular, among pregnant women, food insecurity is associated with nutrient deficiencies and depressive symptoms among mothers, and poor birth outcomes for infants (Laraia et al., 2006; Hromi-Fiedler et al., 2011).

Although we did not ask women about depressive symptoms, we found that they perceived their low sense of control as stressful. In both quantitative and qualitative phases of our study, women reported compromises in the quality of their families’ diets because they could not afford “balanced meals” in the past 12 months. Somali women reported that often they could not buy vegetables, fruit and meat, a finding that was consistent with studies with other immigrant groups, and during pregnancy (Rush et al., 2007; Hromi-Fiedler et al., 2012). The fact that women interviewed in our study could not afford the foods they wanted meant even more than stressful compromises in diet quality. They also felt a loss of cultural identity because foods that had cultural and religious meaning to them were perceived as too expensive in Canada. It is important to recognize that for immigrant women whose family role is primarily constructed around food and the kitchen table, food insecurity might also mean loss of power, agency and identity (Page-Reeves, 2014).

Our study had many limitations related to the administration of the HFSSM among a vulnerable group of immigrant women yet it is one of few that have investigated food insecurity among immigrants, and especially refugees, in Canada. The lack of demographic data is a significant limitation of our study, and something we tried to compensate for by conducting qualitative interviews that included a few questions about women’s demographics and household characteristics.

Moreover, in following principles of CBPR, we asked health brokers to administer the HFSSM in women’s mother tongues rather than in Canada’s official languages, and to include any of their clients who were interested in participating. Although this decision was made in an effort to balance ethical validity and data validity (Edwards et al., 2008), it posed threats to the external validity of data collected through the HFSSM. To optimize data validity and reliability, we read and discussed every question in the HFSSM with health brokers prior to them going through the questionnaire with any women. If health brokers had any questions about terms or phrases, we tried to use definitions that had already been reported in other documents and validation studies (Tarasuk, 2001; Hromi-Fiedler et al., 2009).

Conclusions

Strong evidence is available in Canada showing the link between low income and food insecurity (Tarasuk et al., 2014, 2016; Dietitians of Canada, 2016). Therefore, economic policies are needed to offer income protection and additional social assistance for immigrant women who might be engaged in low-wage jobs and simultaneously caring for young children. Furthermore, we believe there needs to be governmental commitment to include immigrants, and a representative sample of refugees, in all cycles of CCHS (Dietitians of Canada, 2016). This represents an essential step in increasing policy advocacy, and effective programming aimed at improving the health outcomes of immigrants.

Given the complex network of factors that influence immigrant women’s health in a receiving country, health services need to assess food insecurity among immigrants, especially women in perinatal period. Improving immigrant women’s diets in pregnancy and postpartum will require addressing migration as a determinant of health. It is of the utmost importance to support these women with strong integration policies that not only promote diversity and multiculturalism but also make an active effort to integrate immigrants into local economies (Bollini et al., 2009).

The extensive number of CBOs across Canada, such as the MCHB, can play an important role in enabling integration policies by fostering opportunities for social and economic integration of immigrant women and families into local contexts. However, they require adequate funding to provide continuing services that can assist immigrant women in being healthier in childbearing
years and beyond. We also suggest that all government levels need to acknowledge, and recognize through meaningful policies, their potential role in positively impacting the health of future generations by proactively looking after women and children’s health and well-being (Barker et al., 2013).

References


Canada

Northeast African migrant women perceive and experience health during pregnancy and postpartum in

Weight Gain During Pregnancy: Reexamining the Guidelines (2009), Rasmussen, K.M. and Yaktine, A.L. and the Committee to Reexamine IOM Pregnancy Weight Guidelines

and period of immigration, Canada, provinces and territories, census metropolitan areas and areas


Further reading


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What can Somali community talk about mental health tell us about our own? Contextualizing the symptoms of mental health

Juanita Ryan, Pauline B. Thompson Guerin, Fatuma Hussein Elmi and Bernard Guerin

Abstract
Purpose – The purpose of this paper is to review all the research on Somali refugee communities’ “explanatory models” of “mental health” or psychological suffering, and also report original research in order to allow for more contexts on their “mental health” terms to emerge.

Design/methodology/approach – The authors talked in a conversational manner with a small number (11) of Somali people (10 females and 1 male), but this was done intensively over time and on multiple occasions. They discussed their community terms for “mental health” issues but in their own contexts and with their own examples.

Findings – The results showed that Somali as a community had three main groupings of symptoms: Jinn or spirit possession; waali or “craziness”; and a group of terms for serious anxieties, rumination, worrying and thinking too much. What was new from their broader descriptions of context was that the community discourses were based on particular contexts of the person and their behavior within their life history, rather than aiming to universal categories like the DSM.

Practical implications – Both research and practice on mental health should focus less on universal diagnoses and more on describing the contexts in which the symptoms emerge and how to change those contexts, especially with refugee and other less well-understood groups.

Originality/value – The review and original results support symptom-based or contextual approaches to mental health; we should treat the “mental health” symptoms in their life contexts rather than as a disease or disorder. We can learn from how Somali describe their “mental health” symptoms rather than treat their descriptions as crude forms of the “correct” western diagnostics.

Keywords Mental health, Community discourses

With increases in conflicts and globalization, there have been large influxes of refugees from Africa and the Middle East into many western countries. This in turn has led to an increase in the diversity of people, needs and issues within those countries, which can be beneficial in the long run but an immediate problem occurs when systems are built around one framework only. It is important to find ways of helping refugee communities that works better within the western systems, but we also must look at the possibility that the western systems need fundamental changes because they are not universal.

For this paper, we are concerned with those behaviors of Somali refugee communities in western countries which are commonly referred to mental health services (Cavallera et al., 2016). There have been several papers presenting research on how Somali communities talk about mental health and their traditional treatments, and these will be reviewed below. But we wish to put this research, and our own presented here, into a different framework than the institutional psychiatric and psychological ones which says that mental health is a disease and needs a classification system which can identify the disorders. Rather, we use some more contemporary frameworks which focus on the life contexts for any symptoms, behaviors or “complaints”
causing suffering (Bentall, 2006, 2009; Guerin, 2017; Hagen et al., 2011; ISPS, 2017; Johnstone, 2017; Johnstone et al., 2018). After showing the relevance of these new frameworks for Somali mental health, we will present some new research looking more closely into the contexts for Somali communities talking about the symptoms of “mental health.”

Somali community talk about mental health

There have been several papers asking Somali people with refugee backgrounds about the terms they use when conversing around mental health. The results have produced some inconsistencies (see below), but much of the general outline of what is said is consistent between these studies (Carroll, 2004; Guerin et al., 2004; Horst, 2006; Johnsdotter et al., 2011; Kuttinen et al., 2017; Lim et al., 2014; Mölsä et al., 2010; Wedel, 2011).

The research studies are all very different in approach and methods except that because of the nature of the topic and the logistics of finding participants, only short interviews have mostly been used, often just a few questions only. We will not make a comparison of the methodologies here because doing any research in this area is fraught with issues (Guerin, B. and Guerin, P., 2007; Guerin, P. and Guerin, B., 2007). But it is worth remembering that almost these studies were conducted with very brief interviews or large focus groups.

What Somalis said about mental health

Reading across all these studies, the consistencies seem to be as follows:

- A few main terms used by Somali were the same across all studies although the meaning given to them or the context for their use differed; these will be analyzed further below.
- It was common across all studies that many Somalis said that these mental health problems were non-existent or rare in Somalia before the civil war.
- It was very common for the Somalis to say that the problems were caused by traumatic incidents, the process itself of surviving the war conditions and camps and the conditions of resettlement in a western country, such as economic and social relationship stresses.
- It was common for them to say that some behaviors were the same before the war but hitherto they were due to Jinn and were very different to western mental health problems.
- It was common for them to explain the behaviors in terms of local events in their lives.
- It was common for them to say that some problems were caused by shame in front of their family or community rather than anything more directly, or were caused by changes in traditional family social relationships.
- The main terms used were not any sort of “classificatory system” as some have suggested but just common words used for the symptoms when they are present and need explanation.

The terms used to talk about mental health behaviors

Table I shows the main terms used across seven research papers. While there are a few differences in the written spelling, the three main terms are quite consistent: murug, waali and jinn.

Murug is used for sadness, from a little (such as described by “feeling low”) up to what would be called “depression” in English. It is also used for worry and anxiety, and in bad cases can lead to more serious problems (such as could be described as waali). This sadness could arise from many things: economic issues, trauma or extreme worry. While murug does not therefore seem specific to any context, some remarked that the extreme forms are new to resettlement and did not occur in Somalia.

Waali was almost universally given for extreme behaviors and is commonly translated as “crazy” or “mad.” The behaviors were many and involved those which are mostly extreme and, more importantly, out of character and inexplicable in terms of the person’s contexts.
**Jinn (jinni, gini)** is used both as a name for the “spirits” which can control a person’s behavior as well as the state of someone being thus controlled. The processes of this occurring were varied and some pointed out that the occurrences and effects are not limited to what is called “mental health” issues. Many studies described the traditional approaches for dealing with this, since they are closely connected with religious observances.

The other common term was **buufis**, but only one study focused on this and that was within refugee camps (Horst, 2006). This was usually said to cover a range of behaviors but was new to Somalis and said to arise from the whole resettlement experience. Most commonly, it referred to

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**Table I**  
**Somali terms used in previous research studies**

<table>
<thead>
<tr>
<th></th>
<th>Murug</th>
<th>Waali</th>
<th>Jinn</th>
<th>Buufi</th>
<th>Welwel</th>
<th>Emotive and other terms</th>
</tr>
</thead>
</table>
| Carroll (2004) | *Murug*: sadness, everyday up to serious which could cause craziness, disappointment  
This is a new problem for Somalis that comes from financial pressures, trauma, crying, etc. | *Waali*: crazy, more stigmatizing, taking nonsense, wandering, some violence  
*Gini*: effects not limited to “mental” problems, but can include hearing voices  
*Jinn*: also important | *Buufi*: more severe, tense or paranoid (said derived from war and social networks destroyed) | | | |
| Johnsdotter et al. (2011) | *Murug*: for feeling low and worried, could be economic woes | *Waali*: far extreme, are crazy with crazy behaviors  
*Gini*: has different meanings | | | | |
| Lim et al. (2014) | *Murug*: sadness, everyday up to serious which could cause craziness. But this extreme sadness is new from the war trauma and not the same as before | *Waali*: serious one and only “real” mental health issue. Caused by Jinn | *Buufi*: it is new term from forced migration and problems, anxiety and sadness | *Welwel*: worry and overthinking | | |
| Mölsä et al. (2010) | | *Waali*: serious ones and only “real” mental health issue. Caused by Jinn  
*Jinn*: are important | *Buufi*: severe depression or near insanity, a longing from the migration  
*Welwel*: general stress worry or depression (partly from cold winters)  
*Qalbijab* or *niyadjab*: i ti sa serious form of depression with despair or broken heart or broken hope  
*Wareer*: it is related to disappointment and confusion related to stress | | | |
| Wedel (2011) | *Murug*: severe stress and anxiety, obsessed by worry  
*Waali*: “psychotic condition” | *Buufi*: severe depression or near insanity, a longing from the migration | | | | |
| Horst (2006) Note: this study only looked at buufis | | | *Buufi*: longing prevalent in camps. Used for resettlement itself, the people who go overseas, and madness from dreams shattered overseas  
*Buufis*: sadness and distress from migration | | | |
| Kuittinen et al. (2017)  
*Waali*: it is crazy but not a good translation, not feeling themselves, acting funny, not doing things normally  
*Jinn*: are important  
*Jinn*: are important | | | | |

*Buufis*: longing prevalent in camps. Used for resettlement itself, the people who go overseas, and madness from dreams shattered overseas  
*Buufis*: sadness and distress from migration

*Maseyrka*: polygamous jealousy
the people having dreams and visions of finding escape from bad situations and a better life for their families, but then being “disappointed” because things did not work out that way – family were missing and resettlement produced major life stresses rather than fulfillment.

The other terms were not given in all research studies and seem to be more specialized to describe specific contexts in which inexplicable or unusual behaviors arise. Welwel, for example, was only mentioned by participants in two studies but seemed to be a word more focused on worry and anxiety, and particularly excessive rumination (although anxiety and rumination were also described using many of the other terms without reference to the word welwel).

How the researchers explained the explanations

Looking over all these results, and especially the consistencies, the western psychiatric framework would probably conclude that the stresses and traumatic events in the lives of these people has led to some serious mental disorders (American Psychiatric Association, 2013), which are causing the behaviors that are observed. It would then be easy to conclude that murug, waali and buufis loosely refer to depressive, psychotic and anxiety disorders, respectively, and that the Somali community words are a crude attempt to talk about these mental disorders.

Most, but not all, of the authors of these papers resisted this line of thinking, or did not go that far, but wrote instead just about the expressions used by Somali to refer to painful events like the ones western medicine calls mental disorders. Only a few refer to these words as some sort of classificatory system since it is clear they do not form a system but are a part of everyday community discourses.

What this leads to is that this would be no different to asking “naïve” people from western countries to talk about the causes of behaviors said to arise from mental disorders such as depression, psychosis and anxiety. They would likely use everyday language of “sadness,” “extreme sadness,” “crazy,” “morose,” etc., excepting that they would probably use some western psychiatric terms but only because these terms are now well known publicly from the media. Even then, they would not use these terms accurately in a psychiatric sense. Interestingly, one study reported that a few Somalis were beginning to use some Finnish terms for psychiatric diagnoses after a lot of contact with the psychiatric system (Mölsä et al., 2010).

On the whole, however, these research papers are ambiguous about how the terms and causes given by Somali fit with western diagnoses and ideas. They primarily either just reiterate the external or inexplicable causes in Somali life contexts which were given by their participants, or hint at how western diagnosticians might use these terms to guide more “formal” psychiatric judgments (Tiilikainen and Koehn, 2011). The majority of the authors are also careful not to undervalue the Somali experiences or explanations and not to treat them as inferior to the western explanations, but this leaves the relationship ambiguous. And indeed, this ambiguity is obvious in the DSM itself; when assessing from an ethnographic view the DSM “Cultural Formulations” are put at the very end of the Manual (APA, p. 749).

This ambiguity is clearest when authors discuss jinn. Here, most authors are careful not to devalue the religious contexts and the traditional community treatments, and to avoid concluding that when Somalis do not understand the real psychiatric basis of psychosis properly they attribute the behaviors to a “spiritual” cause instead, rather than correctly to a mental disorder. This latter view is widespread, however, and Lim et al. (2014) review studies taking this approach: “[…] we review the medical literature on jinn as an explanatory model in the context of psychotic disorders” (p. 18).

Symptom-based or “complaints”-based approaches to mental health

There are several approaches to mental health, mostly recent ones, which variously argue that: the Kraepelin approaches to mental health (including the DSM) are misguided; no biological substrates for mental disorders have ever been found and they are actually metaphors; or that we should be focused on the symptoms or “complaints” (Bentall, 2006) and the environments or contexts in which they arise, rather than using the metaphors of mental disorders (Bentall, 2003, 2006, 2009; Beresford, 2002; Bhugra, 2013; Billig, 1999; Bracken, 2002; Bracken and Petty, 2001; Bracken et al., 2012; Cochrane, 1983; Guerin, 2017; Hagen et al., 2011; ISPS, 2017;
This is especially clear if we can think of suggesting some observable external contexts as the problems and try to change those directly. Moreover, the illustrations given in past papers et al. cultural contexts (Guerin, 2017). That is, cases of causes only happen when the external contexts from which the behaviors arise are difficult and suffering but in which we cannot easily observe the external contexts from which the behaviors arise, do we resort to metaphors and explanations such as internal or unobservable mediators such as mental disorders or mental diseases.

We will not go through the many arguments for these positions (see Bentall, 2006; Guerin, 2017; Johnstone et al., 2018) but focus on the last. They suggest in different ways that the psychiatric diagnoses are only explanatory metaphors for the behaviors observed, since the biological basis is unknown, undiscovered and only hypothesized in theory (e.g. Zipursky et al., 2013). The point is that the “mental health” behaviors (see Guerin, 2017, Chapter 4 for a list) arise from our life contexts and not from “within” us. To understand and intervene, we need to know these external contexts from which they arise and change them:

When all of the psychotic complaints have been explained, there will be no “schizophrenia” or “manic depression” left behind awaiting explanation. The approach that I advocate is not only more scientific than the Kraepelinian approach, but also more humane. (Bentall, 2006, pp. 220-221)

From arguments such as these there has been an increase in research looking for the external life contexts from which the “mental health” behaviors arise (Fryers et al., 2003; Gottlieb et al., 2010; Guerin and Guerin, 2012; Pilgrim et al., 2009; Tew, 2005; Tew et al., 2012; Varese et al., 2012; Walker et al., 2012). These studies are different from the general search for “social determinants” of mental health because there is no assumption that these bad external conditions lead to the diseases which then in turn lead to the behaviors. Rather, the behaviors are shaped directly from bad life contexts and situations in which people must try and survive, without hypothesized mediators such as mental disorders or mental diseases.

A final, and more radical, point suggested is that these sorts of attributions to internal causes only happen when the external contexts from which the behaviors arise are difficult ones to observe, even with intensive naturalistic observations (Guerin, 2017). That is, when diagnoses are made it can lead practitioners to stop looking at the external contexts since an explanation for the behaviors seems to be complete. But the suggestion is that relying on psychiatric or biological disorders as causes means that the practitioner has not looked hard enough and long enough at the person’s life contexts. Intensive observation using methods from the social sciences rather than from psychology can procure better understandings of how the behaviors arise (Fromene and Guerin, 2014; Fromene et al., 2014; Guerin and Guerin, 2012, 2014; Guerin et al., 2006; Rowe and Guerin, 2018; Trzepacz et al., 2014).

A further example of this, also relevant to the suffering experiences of Somalis, is that of “collective trauma,” which has been applied to many groups around the world. The observations are that people in such situations have been through very bad events as a group, and the whole group exhibit unusual or inexplicable symptoms or complaints. The more detailed observations of individuals in their life contexts are not made and an “explanation” is therefore given in terms of “historical” or “collective” trauma as a “cause.” The point to note is that this does not explain anything but merely re-names the observations, and possibly stops researchers from looking more closely and intensively at the external contexts of the individuals involved. The observations and the suffering are certainly real, but these terms should not be used as explanations (Kirmayer et al., 2014; Maxwell, 2014; Mohatt et al., 2014; Paradies, 2016).

Looked at this way, the “spiritual” and religious “causes” suggested by Somalis do just this: they suggest some observable external contexts as the problems and try to change those directly. This is especially clear if we can think of “spiritual” attributions as primarily social, community and cultural contexts (Guerin et al., 2006). The plentiful suggestions also give contexts of social relationship and financial problems as the basis. Moreover, the illustrations given in past papers
[Table I] seem to suggest that the jinn and waali causes are only given when the external contexts for the behaviors are difficult to observe. When there are salient features, such as financial issues or violence, these terms are used.

An important conclusion using all these points with the current research paper is that the Somali refugees are now in new life situations (including camps) in which their social, community, cultural, economic and other contexts have been hugely transformed and new external events are leading to behaviors in unknown ways, and their old external contexts are gone. This gives some credence to their observations that “mental health” problems (defined now as issues arising from their current contexts) did not exist in Somalia before.

The present research

The current research aimed to further explore the traditional contexts of suffering and distress for Somalis in refugee situations, by giving them more time to talk. For this approach, the “symptoms” or behaviors indicating “mental health issues” were left to the participants to provide, rather than working through a DSM lists of symptoms. The participants were given time enough to provide details and stories to flesh out some of the contexts – social relationship, community, cultural, historical – which lead to these symptoms being found. The participants also talked about traditional treatments and their experiences of western treatments but these are not outlined here except where this gives some better context for the symptoms (see Ryan, 2007 for more).

Method

In total, 11 Somalis (10 females and 1 male) aged over 18 years were interviewed repeatedly over time (Guerin et al., 2017). All participant information has been anonymized and modified, where necessary, to ensure that confidentiality of participants was maintained. All procedures were approved by the University of Waikato Ethics Committee before commencing.

Ten of these participants had either direct or indirect (i.e. via close family members) involvement with western approaches to treating psychological distress. All participants were recruited via two of the co-researchers, and an effort was made to recruit from diverse sources. Five of the participants agreed to have the interview sessions audiotaped. An open-ended interview style, which explored key themes identified by participants in a non-directive fashion, was employed. The bilingual Somali co-researcher conducted four of the interviews with participants of limited English proficiency. The rest of the interviews were conducted by the primary researcher.

The researchers were all involved in the Somali community. The primary researcher engaged in advocacy and volunteer work with many Somali women and families. One of the co-researchers was a Somali woman who has lived locally for the past ten years as part of the community, and the other two co-researchers had worked as advocates/volunteers and researchers within the local Somali community for over six years. Obtaining an understanding of the everyday life of the Somali community by being directly involved with some of its members greatly enhanced the researcher’s knowledge of the Somali culture in a more detailed and in-depth manner than would have been possible by briefly interviewing participants about issues of psychological distress (Guerin, B. and Guerin, P. 2007; Guerin, P. and Guerin, B., 2007). The advocacy and volunteer work was also a way to build a trusting relationship with the members of the Somali community so that those who participated in the current research would be more willing to provide contextual information in an open and frank manner.

Results

There were three main areas of “mental health” symptoms discussed: jinn, waali and a group of other terms for anxiety, distress and excess rumination. The results are structured around these symptoms as described by the participants. Disagreements and varying versions are given to highlight that this was not seen as a perfect categorization by any of the participants but needed the contexts. The more specific symptoms which were given are presented in the following list.
Symptoms of “mental health issues” given by Somali participants:

1. *Jinn* (“Spirit”)
   - possession;
   - *Jinn* also talk out of the mouth of their victim, even if it does not sound like their voice;
   - distress;
   - “moodiness”;
   - hearing non-existent voices;
   - “seeing things” that are not actually present;
   - loss of control over behavior;
   - unresponsiveness;
   - talking to oneself;
   - screaming;
   - laughing for no apparent reason;
   - increased physical strength and energy;
   - tearfulness;
   - physical aggression toward other people;
   - memory loss;
   - life endangering behaviors;
   - disrobing in public;
   - staying in bed;
   - social withdrawal;
   - pulling their own hair;
   - “not acting normally”;
   - run away;
   - run naked;
   - not be able to sleep;
   - have no comprehension of what you are doing;
   - swear;
   - sing;
   - walk constantly through house or in the streets;
   - “go crazy”;
   - a sore heart; and
   - difficulty breathing.

2. “*Waali*” (“craziness”)
   - “crazy” or as madness;
   - sometimes the same as *Jinn* symptoms just more extreme or chronic;
   - hit other people, be violent;
   - have poor hygiene;
   - urinate not in toilet;
not look after their clothes;
■ talk about “150 different things” in one sentence and mix up the topics;
■ walk a lot or pace;
■ people with waali believe they are always “right,” and they know more than other people; and
■ “talking to yourself a lot in your head.”

3. Qalbijab
■ means “broken heart”;
■ hopelessness;
■ excessive rumination about an objective that cannot be achieved;
■ jealousy;
■ being intentionally frightened by someone else;
■ too much thinking;
■ stress all the time; and
■ may talk to themselves.

4. Murugo
■ similar to qalbijab but lesser version, could lead to qalbijab;
■ worry;
■ nightmares;
■ dreaming;
■ memories of family; and
■ seeing things others cannot see.

5. Welwel
■ state of worry, “ordinary worry”;
■ a temporary and understandable response to an acute stressor; and
■ thinking about things all the time.

6. Boofis
■ restlessness;
■ diminished appetite;
■ excessive rumination, think too much;
■ insomnia;
■ recreational drug use (including the use of qat);
■ lack of trust in others;
■ a “loss of confidence in the human condition”;
■ typically, socially isolated and suspicious of others’ intentions;
■ believe people are “against them” and looking at them;
■ suspicious of others;
■ “antisocial”; and
■ boofis can turn into waali.
Jinn ("spirit")

All but one participant spoke about Jinn, spirits that can take possession of a person. At the extreme ends, one participant said she and her family “did not really believe” in Jinn but also acknowledged the importance of respecting other people’s beliefs about Jinn, while another participant said that because Jinn are stated in the Koran, “that actually puts 100% belief that it’s there.” Some participants indicated that any form of mental/psychological distress is caused by Jinn or other forms of spirit possession and would be considered a spiritual problem and not a “medical area” by Somali.

The symptoms of Jinn possession given were numerous and varied considerably, beyond the literature reviewed early. These included: “moodiness”; hearing non-existent voices; “seeing things” that are not actually present; loss of control over behavior; unresponsiveness; talking to oneself; screaming; laughing for no apparent reason; increased physical strength and energy (e.g. being able to lift heavy household items not usually able to lift, working for 24 h without getting tired); tearfulness; physical aggression toward other people; memory loss; life endangering behaviors; disrobing in public; staying in bed; social withdrawal; pulling their own hair; and “not acting normally,” e.g., making out-of-character statements such as “I’m here to cure all the people in the world.” Some of these will be given more contexts below.

Participants broadly identified that there were both more and less serious forms of possession. The spectrum of Jinn possession appeared to range between the following based mainly on whether the person could still function in everyday life:

- Being able to continue functioning adequately but with some relatively minor changes in behavior and mood such as “moodiness” and having increased physical strength; those with less severe Jinn may be able to care for children but would require supervision in case they did something wrong.

- Inability to function adequately with respect to family, household and occupational responsibilities, e.g., public nudity, physical aggression toward people and property, requiring short-term or indefinite hospitalization.

An example of what was considered a less severe Jinni possession was:

I think most of the time she was okay, I mean she was feeling okay but I think she was moody, sometimes she would feel that someone actually spoke to her, you know, that sort of thing, and that she would do what probably might be considered abnormal, if you like, in terms of what she is capable of doing physically, you know, like lifting the range [oven], household stuff, that sort of thing, really just things that men can do that a normal person would probably not do. To me what she was doing was over the top, what she was doing, what she was saying, but I think more important was really what she experienced that sort of maybe in her own world, she would sleep, how she felt, rather than what I have actually seen her do physically, so it’s probably more […] that she was experiencing, dreaming, that sort of thing, just saying “someone called my name” but there wasn’t anybody around her, that sort of thing.

An example of severe Jinn possession symptoms was provided by another participant:

Like when she had the jinni, we could see her talk to a person, we can’t see who she is talking to, she would talk, she would laugh and she doesn’t care about showering or cleaning herself. Sometimes she would get very violent […] With jinni, you wouldn’t know what you are doing and you don’t have control of your mental capability. You don’t know nothing, you can hit anybody, you can even kill, there’s different kind of jinni that make people act very funny and in different ways but most of them [those experiencing the possession] wouldn’t have a memory of that. They only get the memory after they’re back to normal and they’re well, but the jinni’s gone. They’re not doing anything, just like a force that’s in them.

One participant said that the Jinn “goes in their head.” If you have Jinn then you might run away, run naked, not be able to sleep, have no comprehension of what you are doing, talk to yourself (incomprehensibly), swear, sing, cry, walk constantly through house or in the streets or “go crazy.” They may become aggressive, or become very strong when possessed by jinn, and able to do things would not be able to do usually. This makes it very difficult to restrain such a person even though they may not typically be very strong.
Another participant said that this experience included a sore heart, difficulty breathing or at least she felt like breathing with one heart for four people, she saw people other people could not see and heard voices and talked to these people. She said would initially experience a sore heart – that was sign of Jinn coming. Then she would faint. She said she could not remember what she did while possessed by Jinn, but her sister-in-law said she was “not herself,” and angry and crying. She further stated that Jinn also talked out of the mouth of their victim.

Another participant said she may faint in the shower or yell out in her sleep and other people would not know but may hear her in the shower or hear her yelling in her sleep. She also said that she would not talk to people around her, and that this was very hard on the family as they need to watch her all the time (although she has not had Jinn now for about eight months).

One woman, who said she had Jinn, reported that her voice changed when in hospital – she spoke like a man. She said that this was typical with some Jinn – they will speak from the person’s mouth. When this happens, it appears that the person is speaking, and at times they can have very intelligent conversations especially if anything concerning their illness is mentioned. This can be so convincing that people believe that they are sane and it is them speaking, but to the Koran readers and Jinn experts this is seen as the fear by the Jinn of losing possession of the person.

Crying is common with Jinn even though it is very unusual for a Somali woman to cry unless she is leaving loved ones such as her mother behind. Often very religious people would not cry at a funeral of a loved one, as they believe that each tear causes pain for the deceased. One participant pointed out that crying was therefore a sign that the problem is not due to physical health. Woman said this was jinn – exactly as jinn would be. Laughing (for no apparent reason) and crying were first signs of jinn.

A number of participants said there was nothing that could be done to prevent jinn possession if it was destined by God that you were to suffer jinn possession. Some participants did suggest that there are particular verses of the Koran that if read just prior to going to sleep and again on waking, can help protect against jinn. These recitations however, were not considered to guarantee protection. Some participants said that if you are a “good person and pray” you will not get jinn.

Traditional treatment approaches. A number of participants stated that treatment of jinn possession was done successfully through recitation of Koran verses to the affected person. A typical account of this type of treatment is outlined below:

[...] this person started reciting or reading verses in the Koran [...] It starts off reading those verses to my [sister] sitting and she sort of started to react to the verses and sort of fell on the ground and then started talking. Now although it was her own voice that was talking it was believed that it was the person or the Jinn who was occupying her who was talking, you know, because my sister does not remember what she was saying and then she started saying ‘this is my wife, I married her, she has my children’, that sort of thing. Jinn or the person said that my sister was his wife and his reason why he was occupying her or was living in her is because he believes that she belongs to him, that sort of thing, but the Koran reader just kept on reading the Koran to the point where the person or Jinn who was speaking couldn’t cope with the Koran or couldn’t take the pressure or burden of the Koran – remember the Koran being pure for Jinn – begged for the Koran reader to stop reading the Koran and that he would leave my sister alone [...] These sort of things do happen quite often when the Koran is being read and Jinn people start to talk and that sort of thing, so for me to hear the other person using my sister’s voice but was talking about completely different topic [...] my sister will say that “this is my wife,” or that sort of thing and she wouldn’t make up that kind of story, so to me it was real [...] in the end he said he would leave her for good and the Koran was stopped and so my sister regained her consciousness and started feeling better. We asked her if she knew what she was saying and she said the last thing she remembered was when she fell upon the ground and that sort of thing, but not a word she was saying. And from there on she started feeling much better after that.

All participants who talked about jinn possession reported that Koran readings are the primary means of treatment, and sufferers generally recover to complete premorbid levels of functioning following expulsion. Social and familial support were also considered integral components of the management of jinn possession:

If a person has Jinni, one thing you always have is your family support there no matter what, this person is possessed, got Jinni’s, every person, every member of the family, nobody is going to diss’ them and go like, oh my God. There may be some people possessed for five, six years but you’d see the mum and dad pay lots and lots of money to make them better, whatever it takes to get them better, they will stick by, not like just let him go, whatever your brother, sister do, always be there for you.
One participant spoke of a family member being possessed by a jinni for five years before a combination of western medication and Koran readings eventually led to a partial recovery. Although the family member continues to report hearing voices, they now apparently know how to control the voices through self-treatment of Koran readings:

Now when she hears the voice she will come […] and say […] lately those stuff that talk to me, they’re back, they talk to me, and [we] would be like, whenever you hear that, you should go read the Koran because she is really good at reading the Koran, so she knows what verses to read, she understood it, so she would go read it, so she has control over herself. It’s not like she misses her medication and she would be going all crazy because she hasn’t taken her medication. She does take it perfectly well, but she does know what’s happening, she knows this thing that is disturbing her is Jinni, so when she knows they are back, they want her distraction, she’ll go read the Koran all day and two days after they’re all gone.

In summary, jinn produced a wide variety of behaviors which depended upon more specific aspects of their personal contexts. Even Koran readings were varied to match the contextual problems in which the person and their families were immersed. There was no aim to produce a universal description of jinn with categorical features. Rather, it matched the context description.

**Waali (“craziness”)**

Waali is translated as “crazy” or as madness. Participants said that waali was difficult to disentangle from jinn with respect to symptoms sometimes, because it can look identical to jinn possession, and because only the family would know that it was waali. However, waali was considered incurable, secular and constant whereas jinn was curable, spiritual and intermittent – jinn will go away but waali will never go away, although one participant said that waali may subside if Allah grants you better health, and some said you could have waali and then be cured of it through Koran readings or Divine intervention. But overall, waali is a constant state of un-wellness with no respite from symptoms. One cannot get work or get married with waali whereas one can do these things with jinn.

The symptoms of waali varied and were sometimes just more extreme or chronic symptoms but otherwise the same as jinn, although people with waali will more often hit other people, be violent, have poor hygiene, not look after their clothes and may urinate and defecate places other than the toilet. You may not be able to tell initially that someone is waali but once you begin talking to them you would know by the way they talk. It was said that you can tell if someone is waali by the way they talk since they can talk about “150 different things” in one sentence and mix up the topics. They often walk a lot or pace, and an example was given of a man with waali, known to some of the female participants, who would walk to a different town every day. This man would also beat his children until they “threw up.” His wife also walked with him and participants thought this meant she was probably waali too. Also, participants said that people with waali believe they are always “right,” and that they know more than other people.

Bad experiences in childhood were suggested as one reason for waali; however, participants also said you could be born with waali or even have a good childhood and still become waali as an adult. Others suggested that having life stressors or problems (such as health or financial problems) and “talking to yourself a lot in your head” could lead to waali. Some participants said that not praying or not being spiritual could lead to waali. It could also be “God’s will” and be due to a head injury. Too much thinking – major life problems such as having a lot of money and then going bankrupt – could also lead to waali. Most agreed that you could “have everything going for you and still get waali.” Sometimes waali was said to be caused by jinn, and that they were very similar but jinn will show improvement with Koran but waali would not change, and a person with jinn will have jinn speak through them during Koran but this would not happen with waali.

**Protection against waali.** Faith and believing that one’s destiny has already been determined by God were suggested as protective factors against the development of psychological distress, including worrying, by a number of participants:

Stress is a really hard thing to find in Somali’s because we all have a strong faith so people don’t have much stress. […] you’ve got a problem, just pray and God will make it better […] at the end of the day,
that’s what they all believe. You can go crazy, have a mental problem but by going crazy it’s not going to change anything [...] don’t worry, whatever it is God can make it better [...] I can sit and listen to you crying for hours on end but at the end of the day I can’t do anything for you, so what’s the point. Stressing out, we don’t have that [...] Faith in God and knowing that everything is done for a reason helps people not to get so stressed out about stuff. Mostly the person who doesn’t believe in anything, that’s the only person going “oh my God, it’s unfair, it shouldn’t happen to me,” people like that can talk like that because you don’t have faith in anything. [...] whatever happens, it’s God up there [...] everything is for a reason [...].

Various terms for non-spiritual anxieties, excess rumination and hopelessness

There were several terms which had similar reported symptoms and which some participants said were just variations of the others. Some, but not all, said they were regional variations on the same issues. By taking more time to elicit more of the life contexts around the symptoms, we could get better contextual descriptions of how these words were being used.

Qalbijab. Participants said that qalbijab means “broken heart” and was a sense of sadness and hopelessness. It may, for example, arise when a loved one passes away. The terms also seemed to include excessive rumination or thinking too much about things, such as an objective that cannot be achieved. Other stressors, such as jealousy, temporarily losing a small child/infant or being intentionally frightened by someone else, were also suggested as contexts for qalbijab in some cases. Some said that such experiences would be qalbijab if an individual could not stop ruminating about these experiences. Others reported that if qalbijab is not overcome it could lead to waali. Participants generally said that although qalbijab could, in its most severe form, significantly impact on an individual’s day-to-day responsibilities, often in less severe cases it would not be obvious to others that someone was experiencing qalbijab (although this condition might still impact on day-to-day functioning to some degree). The descriptions given here of qalbijab were consistent with those conveyed by Tiilikainen’s (1998) and Zarowsky’s (2004) interviewees, a condition which seems to be a state of excessive sadness akin to depression, but with a bigger range of other symptoms than in DSM definitions.

Qalbijab was also said in one example to be caused through a bad joke. An example was given of a woman who went to neighbors for something, came home and her infant had been taken from her house. She looked everywhere, and 30 min later the neighbor came over with baby saying that it was a joke. This person has always been worried about losing things since this occasion.

Murugo. This is a similar state of anxiety or worry as qalbijab but said to be not as intense, although it was reported that if not managed or overcome it could lead to qalbijab. Symptoms reported for murugo were nightmares, dreaming, memories of family and seeing things others cannot see.

Not all participants considered murugo a state of psychological distress but those that did reported that traumatic war experiences could trigger murugo. Nightmares, memories of the civil war and deceased family, and having visions other people could not see were provided as symptoms of this form of distress. Consequently, some interviewees said murugo may be likened to or mistaken for post-traumatic stress disorder. One participant gave an example that if someone promised to buy something for someone else but could not then actually afford it; they may worry about having made this promise. Thus, it was not a major state of distress and would not require any formal intervention.

Welwel. Participants described this again as a state of worry, or an “ordinary worry” (cf. Zarowsky, 2004). The state was considered a temporary and understandable response to an acute stressor, but people would be thinking about it all the time. For example, welwel could be triggered by learning that there had been a fire at your children’s school. Once your children are home safely; however, you would stop worrying. Others said it could become a potentially serious form of distress and stated it could significantly impact on an individual’s ability to maintain domestic or employment responsibilities competently.

Boofs. This was a term for perhaps a more active sense of worrying, that included symptoms of restlessness, diminished appetite, excessive rumination and insomnia. Of most relevance was
that this was a term most used as a result of recreational drug use (including the use of qat). Some of the symptoms of boofis indicated by participants were consistent with amphetamine intoxication. Research suggests that qat can lead to psychotic states in Somalis who ingest this substance, and given that qat is an amphetamine-like substance this is not a surprising outcome.

Other said that boofis could be caused by very negative life events such as traumatic war experiences (due to being victims/witnesses of rapes, robberies, assaults, murders, etc.). They said such experiences may seriously diminish an individual’s capacity to trust others and lead to a “loss of confidence in the human condition.” Individuals suffering from boofis were said to be typically socially isolated and suspicious of others’ intentions in a slightly paranoid way, and perhaps appearing antisocial. It is important to note that these conversations differ from those given in some of the research studies reviewed earlier, where it was more about expectations and disappointments arising from resettlement.

Conclusions

From talking directly at length to the members of the Somali community about their “mental illness symptoms,” and pursuing more details of the contexts for the use of these words, we can find three major groupings. First is the possession by a jinn spirit, which can cause a number of symptoms and be quite serious. Second, we can have many of the same symptoms as for jinn appearing as waali or madness, but this is more secular and is much less amendable to intervention and change. Third, there are a series of terms for difficult and unwanted anxiety, excessive ruination, insomnia and restlessness. How these vary and are used depends, it seems, somewhat on the cultural groups and somewhat on the salient causes. For example, similar symptoms for a young person using the drug qat would be talked about as boofis but in an older person might be one of the other labels.

Of most interest for our research trying to contextualize better mental health terms is that there are many contexts said to lead to the symptoms of western mental illness labels, and these vary across social, political, personal and historical contexts. This suggests that the groupings of symptoms into “clusters” is not about pre-formed category systems but about descriptions of how the symptoms are engaged and contextually clustered within the life contexts of particular people in the community and in the community oral histories and discourses.

As an example, very similar and observable symptoms can be put into a spiritual (jinn) or more secular (waali) version with the former being much more open to change. But is not just arbitrary whether a spiritual or secular labeling is given, since we saw throughout that the labeling itself depends on a lot of social, cultural and familial contexts. That is, they are grouping the symptoms or observable behaviors into terms based much more on those specific aspects of the person’s life causing suffering than do systems such as the DSM, which write in a general and universalistic way (APA, 2013).

This Somali approach therefore fits nicely with the recent symptom– and complaints-based approaches to the behaviors called mental health disorders (Bentall, 2006, 2009; Guerin, 2017; Hagen et al., 2011; ISPS, 2017; Johnstone, 2017; Johnstone et al., 2018). Together, they form a range of approaches for identifying problematic symptoms or behaviors in their contexts, rather than a typology of internal disorders.

Another interesting point is that the symptoms are mostly ordinary behaviors-in-context that are responses to extraordinary situations (Guerin, 2017), such as too much stress, bad life experiences (especially for refugees from a civil war) and family disputes within disrupted families. These seem to get out of hand and the symptoms worsen into other labeled forms, and the bad situations lock them into becoming chronic. In this way, the symptoms indicative of jinn possession and waali are similar to the types of symptoms observed across many western psychological disorders. However, there are major differences in the explanatory and etiological models, treatment approaches, and, how symptoms are clustered. The same symptoms as responses to similar life events can be viewed very differently in a DSM framework.

From a western perspective, the cultural and religious sanctions against experiencing significant psychological distress may mean that spirit possession is one of few acceptable
explanations within this group for an individual’s suffering which is also afforded support and treatment from the Somali community in the form of Koran readings. This is supported by participant reports that non-spiritual forms of distress are often considered to be due to a loss of faith in Allah and seem to have considerable stigma attached to them. Hence, Somali may be less likely to talk about and seek support (particularly from other Somali) for these secular forms of distress such as waali.

Seeing suffering and distress as “God’s Will” and believing that one’s life path has been predetermined by Allah, were said to act as key protective factors – as this seems to become the explanation for the trauma that many Somali refugees have endured (Ryan, 2007). Hence, rather than the Somali community having “primitive” or “naïve” explanations for the distress and suffering they endure, it would seem that they have sophisticated explanatory systems and community discourses which are consistent with their world view but not with the internal, individualistic and abstract approach of the DSM.

In conclusion, parsing back mental disorder terms into observable behaviors (symptoms, complaints) in idiosyncratic and observable life contexts, leads the way to obtaining more transparent views of what is occurring and what can be done. Both etiology and treatment are not shrouded in unobservable essentialistic notions, which give hope for new treatments and understanding, and a big rethink of mental health. This research supports others who suggest western practitioners should adopt symptom- or “complaints”-based approaches rather than using categorical groupings in which the “explanations” come after the groupings (Bentall, 2006).

Rather than thinking that the Somali way of observing a person’s world closely and highlighting the events from which the problematic behaviors arise, is a primitive form of the “correct” western disease models, this approach can illustrate an alternative approach to the whole western enterprise of theorizing mental health (Bentall, 2006; Billig, 1999; Bracken et al., 2012; Cochrane, 1983; Guerin, 2017; Johnstone et al., 2018; Smail, 2005, 2012; Tew, 2005; Waldram, 2004). In essence, we can actually learn from the Somali community approach to thinking and talking about “mental health” rather than comparing it adversely to the individualistic western ways. To do this fully, however, requires more focus and time spent on intensively describing both the symptoms themselves and their variations, and also the many contexts in which they are observed to arise and vary for individuals.

References


**Further reading**


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Lived experiences of street girls in Côte d’Ivoire

Tamarah Moss, Andrew M. Muriuki, Sithokozile Maposa and Denise Kpebo

Abstract

Purpose – The United Nations continues to identify street children as one of the most vulnerable sub-populations of children and youth globally. The purpose of this paper is to present social and contextual perspectives of 11 girls living on the streets of Abidjan, Côte d’Ivoire. Implications with respect to the development and delivery of effective sexual/reproductive and mental health interventions and services are discussed.

Design/methodology/approach – Through semi-structured interviews and applied qualitative thematic analysis, this paper aims to achieve in-depth understanding about the lives of 11 girls living on the street. A socio-ecological framework is utilized to interpret the experiences of the girls at the individual (micro), community (mezzo) and structural (macro) levels.

Findings – Six main themes evolved from the thematic analysis of interview transcripts: exposure to violence and abuse before and on the street, exposure to violence and sex work, risk and vulnerability to HIV, substance use and sex work, substance use and physical and reproductive health and ways of coping and future planning.

Originality/value – The interplay of experiences illustrates how girls navigate their lives, and along with an appreciation of intersectionality validates the need for an integrated approach to health and social care related to health and mental health services. Integrated interventions should focus on common issues such as improving access to HIV testing and contraceptives for young girls living on the street.

Keywords Intersectionality, Health and social care, Migration, Street children, HIV vulnerability, Côte d’Ivoire

Paper type Research paper

Introduction

Street children are a social and public health concern worldwide, and remain important with respect to understanding the welfare of international children and youth (Connolly, 1990). Indeed, the United Nations continues to identify street children as one of the most vulnerable sub-populations of children and youth globally (United Nations, 2017). Yet, there is limited understanding especially with respect to the needs of girls who are living on the streets and engaged in sex work. An environment of illegal drug use, exposure to violence, mental health disparities, vulnerability to HIV and unintended pregnancy continues to grow and impact the livelihood of children on the street in many developing countries (Sumner et al., 2015).

When considering the lived experiences of children living on the street, an understanding of terms is essential. UNICEF (2001) defines children of the street as homeless children who live and sleep on the streets in urban areas. They are totally on their own, living with other street children or homeless adult street people. Some of these children maintain contact with their families. On the other hand, children on the street earn their living or beg for money on the street and return home at night (UNICEF, 2001; Thomas de Benitez, 2011). This paper focuses on the lived experiences of girls who are children of the streets of Abidjan, Côte d’Ivoire.

Côte d’Ivoire has one of the highest adult rates of HIV prevalence in West Africa, estimated at 3.7 percent (UNAIDS, 2012). According to UNICEF, Côte d’Ivoire has approximately 480,000...
people living with HIV, with an estimated 440,000 Ivorian children considered orphaned and vulnerable due to HIV/AIDS. Among the almost 480,000 people living with HIV are 52,000 children, of which only 10 percent have access to anti-retro viral drugs (UNAIDS, 2012; UNDESA, 2012). On average, 6,200 children are infected each year; the feminization of the infection is also continuing, with women being infected at twice the rate of men. UNAIDS (2012) continues to report that HIV prevalence among young pregnant women 15–24 years old is 5.2 percent in Côte d’Ivoire and in Africa overall.

Examining the lives and experiences of girls in Africa, and Côte d’Ivoire in particular, is important because they experience a high burden of gender-based sexual violence (Human Rights Watch, 2017). Gender-based violence can lead to a confluence of vulnerability to HIV, unwanted pregnancies and substance use that can, in turn, impact sexual/reproductive health and social outcomes. African girls live with cultural contradictions that may influence how they can respond to HIV and abuse risk (Maposa et al., 2016). The way girls’ lived experiences are framed will help to give context to economic and cultural traditions that shape the lives of many girls and sometimes disempower them and lead to gender power disparity and increased HIV risk (Jewkes et al., 2010). Moreover, sexual abuse among girls remains at twice the rates of boys in developing countries including many in Africa (Sumner et al., 2015). Moreover, while the risk may be high, only limited support for HIV programming and dissemination of preventive information to at-risk girls is available (Winston et al., 2015).

Large numbers of rural adolescent girls migrate to urban areas for domestic work (rural to urban migration), which in part results in the over-representation of adolescent girls in many large African urban areas, such as Abidjan (Daniel and Mathias, 2013; Jacquemin, 2004; LaFramiere, 2005; Thorsen, 2012). In many cases, the migration occurs when children, especially girls, move to more urban areas to become child domestic workers (CDWs). In Abidjan, CDWs include girls younger than eight years old (Jacquemin, 2004). While living on the street is often stigmatized, many children are initially exploited as CDWs then later move to the street where they face increased exposure to exploitative sex work (Maposa et al., 2016; Lator, 2004; Jacquemin, 2004; Erulkar et al., 2006).

Many young girls are brought to the city or urban area with a promise of education and personal growth. Their parents believe that they are giving their children better opportunities than they can otherwise provide, and trust their relatives, whether it be a sister or brother or older children, to consider their children’s best interests when they get to the city (Jacquemin, 2004). However, many of these children once separated from their primary caregivers became highly vulnerable to exploitation as CDWs and/or commercial sex workers (Jacquemin, 2004; Erulkar et al., 2006). Girls are exposed to pervasive violence while working as CDWs. These same children then may choose to flee to the streets (Conticini and Hulme, 2007), and are further exposed to violence and experience sexual exploitation, poor health outcomes and homelessness.

A non-governmental organization (NGO) supporting orphaned and vulnerable children (OVC) in Côte d’Ivoire observed a gap in health and mental health services for girls 10–18 years old (Peel, 2010; William and Biti, 2013). The focus of this study is to gain an in-depth understanding of the lives of girls of the street in terms of the intersectionality of experiences related to violence, self-medication related to pregnancy prevention, substance abuse, mental health disparities and HIV vulnerability, all in the context of their migration to urban areas for domestic work. The implications of these experiences are important with respect to the practice of health and social service providers in the delivery of care and treatment to street children.

**Theoretical framework**

Given the complexities of adolescent (child) health, understanding adolescent health in terms of individual, community and structural and sociophysical environments is critical (Mburu et al., 2014). Multiple factors impact health care utilization, and the socio-ecological framework calls for a multi-level approach; this is anticipated to be more effective and sustainable (Harper et al., 2018). The framework is reliable with respect to addressing social issues and understanding the barriers to health care access for populations who are migrating (Mengesha et al., 2017). The barriers exist within a nested system based on interdependent relationships at the micro
(individual), mezzo (community), and macro (policy) levels, all of which are important when considering the health and social care needs of children of the street. This framework provides a lens for analyzing the need for social action on behalf of vulnerable, marginalized communities, which in this case are girl children of the street.

Methods

Research design

The study used qualitative data originally collected as part of a larger purposive mixed method study examining factors that influence extreme vulnerabilities for girls in Côte d’Ivoire. We focus here on 11 individual in-depth semi-structured interviews held with girls who live on the streets of Abidjan. Narratives were analyzed via interview transcripts using thematic analysis.

Ethical considerations

After ethics approval was obtained from the Côte d’Ivoire National Ethics Committee, Save the Children in Côte d’Ivoire reviewed the larger purposive mixed-methods study to ensure their standards for child safeguarding were met. Work then began with local NGO networks to confirm that interviews would be conducted in a safe space. All study investigators, supervisors and field interviewers reviewed and signed the Child Safeguarding Policy to consent to protecting the confidentiality of participants. Voluntary participation and informed consent were obtained from each girl (and guardian). In addition, the written consent form was read and explained in French and the local language. Data were placed in a secure and locked file, which was located at the Save the Children office and only accessible to the study team. All identifiable information was removed. Pseudonyms, informed by the authors’ experiences of working or living in a Francophone African country, were used to replace study participants’ real names and maintain confidentiality.

Sample participants

Participants were engaged as a part of the Save the Children OVC program in Abidjan, Côte d’Ivoire. They were identified through voluntary counseling and testing centers, prevention of mother to child transmission services, associations of people living with HIV or social centers. The inclusion criteria were girls who were 18 years of age or younger, who were recently of the street and engaged as part of the Save the Children OVC program in Abidjan, who were on the path to being linked to health and social care, and, for some, reunited with their family networks. Participants were excluded if they were 19 years or older, not connected to the Save the Children OVC program, still living on the streets and not connected to health and social care or family networks.

Data collection and management

The semi-structured individual interviews lasted between 60 and 90 min. Most were conducted in French with the remainder in the local language. The interviews sought to: identify life experiences; understand pathways and family dynamics that led girls to leave their parents’ home to pursue CDW or migrate to Abidjan; and determine reasons these girls chose to engage in sex work or live on the street and become exposed to extreme vulnerability. Data from individual interviews were audiotaped and transcribed in French, and then translated verbatim from French to English.

Data analysis

Several themes unfolded after numerous readings of both the English and French transcripts and multiple discussions related to the participant interview narratives among the authors. The French language expertise of the lead and fourth authors facilitated reading of transcripts in both languages and added contextual validation (Angen, 2000) of participant experiences. Ongoing communication with the in-country study team also took place regarding colloquial expressions.
This clarification facilitated the open and ongoing coding of unfolding thematic patterns. The scope and depth of themes were enriched by the co-authors’ inter-professional perspectives (i.e. social work, public health and nursing) until saturation, and validated by verbatim excerpts from participant transcripts.

Thematic analysis (Braun and Clarke, 2006) was employed to gain meaning from the narratives (or interview data). Braun and Clarke (2006) describe thematic analysis as a qualitative way of identifying, analyzing and revealing commonalities, distinctions and “patterns” from each transcript and all interview transcripts (p. 79). Ultimately, thematic analysis can enhance an enriched understanding of interview data and uncover experiences of vulnerability among study participants, i.e., girls of the street. Thematic analysis also allows for flexibility in the way data portray the intersectionality (and cultural identities) and lives of Ivorian children of the street while avoiding the disadvantages or shortcomings of a theoretical lens. For instance, using thematic analysis provides an opportunity for integrating theoretical assumptions (i.e. intersectionality and/or a socio-ecological model) and inductively allowing themes to develop from an evolving and/or unfolding understanding of interview data.

Each transcript was coded manually and independently by all authors using inductive analysis and emerging codes were discussed during data analysis meetings (Moser and Korstjens, 2017). Data saturation was achieved when coding no longer provided new information (Fusch and Ness, 2015); for this research, the data for all girls were included in the analysis. The codes identified were kept close to the participants’ own words. After coding each transcript, an additional analysis was done using socio-ecological levels merging initial codes into emerging thematic patterns. Thereafter, patterns were merged into sub-themes and themes to give an inclusive perspective of participants’ experiences as supported by intersectionality/socio-ecological models. Final thematic patterns were determined during an in-depth interrogation of participants vulnerabilities, such as contrasting intersectionality and interaction of identities with contextual (socio-ecological) factors and vulnerabilities (e.g. abuse).

Findings

Demographics of participants

The final sample included 11 girls ranging in age from 14 to 18 years with an average age of 15.91 (SD = 1.62). Participant paths to vulnerability were wide ranging, and included rural–urban migration for child domestic work, running away from home to work as CDWs before they were either evicted or moved to the streets, and family dysfunction. Some of the girls’ families migrated to Côte d’Ivoire from Western African countries including Guinea and Mali. Table I summarizes participant demographics.

In terms of social context, most participants migrated to Abidjan due to poverty and/or a promise of domestic work and/or education support from their relatives (e.g. aunts and uncles).

<table>
<thead>
<tr>
<th>Name</th>
<th>Age in years</th>
<th>Original Region of Migration</th>
<th>Country of origin</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Bousaké</td>
<td>Côte d’Ivoire</td>
</tr>
<tr>
<td>Jasmin</td>
<td>14</td>
<td>Konahiri</td>
<td>Côte d’Ivoire</td>
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<td>Gaby</td>
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<td>Bondoukou</td>
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<td>Therese</td>
<td>16</td>
<td>Danané</td>
<td>Côte d’Ivoire</td>
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<tr>
<td>Karolina</td>
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<td>Guinea</td>
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<td>Danielle</td>
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<td>Claire</td>
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<td>Toubab</td>
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<td>Helene</td>
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<td>Côte d’Ivoire</td>
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<tr>
<td>Paulina</td>
<td>17</td>
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<tr>
<td>Valerie</td>
<td>18</td>
<td>Abobo</td>
<td>Côte d’Ivoire</td>
</tr>
<tr>
<td>Zara</td>
<td>18</td>
<td>Odénéné</td>
<td>Côte d’Ivoire</td>
</tr>
</tbody>
</table>

Note: *Pseudonyms*
Although none of the girls were enrolled in school, they referred to fellow street children and youth as classmates during the interviews. Additionally, contextual understanding of the participants’ sexual and reproductive backgrounds indicates intersecting vulnerabilities. Some of the girls used street drugs for pregnancy prevention. Furthermore, two participants had children and two reported street abortions. All study participants were engaged in sex work, which they referred to as prostitution or managing clients who were either currently considered stable boyfriends and/or casual customers.

Thematic analysis

Thematic analysis emphasizes the qualitative method and provides an opportunity to capture the complexities of perceptions and experiences (Neuman, 2014). Six main themes emerged from the interview data collected from the study participants: exposure to violence and abuse before and on the street, exposure to violence and sex work, risk and vulnerability to HIV, substance use and sex work, substance use and physical and reproductive health and ways of coping and future planning. Common experiences and perspectives revealed “push” and “pull” factors that led girls to live on the street of Abidjan. While not the initial intent for migration, transactional sex in the form of sex work became a reality in an effort to meet their basic needs.

Exposure to violence and abuse before and on the street. Prior to living on the streets, many girls had experienced verbal, physical and sexual abuse, food deprivation, shaming and stigmatizing labels at the hands of relatives or employers for whom they worked as CDWs in Abidjan. One participant reported that, after moving to help with domestic work, her aunt continued to mistreat her with insults: she “[…] insults me that I’m poor, I’m like this, I’m dirty” (Gaby, 14 years old). Another participant reported that her aunt’s neighbor said that “[her house] has a witch […] who wants to eat everything […] a week after […] the woman said it was me” (Jasmin, 14 years old). Soon after, Jasmin fled to a life on the streets. In yet another case, 18-year-old Zara shared her experience:

My mother gave me permission to move in with my sister in Abidjan before she died. After my mother died, my sister’s comrade told her that I slept with her husband. This [comrade] pushed my big sister to hate me and hurt me […] and kicked me out of her home. Otherwise, I wasn’t a child of the street […] this is not my fault, I was not like this. Now my sister tells my classmates that, I am making a fool of myself and I am no longer her sister.

In addition to emotional abuse, physical and/or sexual abuse was a common subtheme. Paulina (17 years old) mentioned that her aunt was in the “[…] habit of hitting and deprived me [her] of food.” Danielle (16 years old) told another poignant story:

I was living with my aunt, and her husband raped me. I got pregnant. I told her, and she said that I was lying and that her husband was not the author of my pregnancy. Thereafter she drove me out, and I left the house[…] I went to see classmates and they asked me if I can prostitute and I told them that I could prostitute. They gave me drugs so I aborted, then I started to prostitute.

After earning most of the family income from selling bags and still connected to her family, Danielle also reported that her aunt would spend all of the money she earned. Her aunt also “abused” her and “did not give me [her] enough to eat.”

When another participant informed her aunt that the husband wanted to sleep with her, the aunt responded by hitting her “[…] and then pushed [her out of the door].” That is why Claire (16 years old) explained that she “[…] just sleep[s] at the market.”

Exposure to violence and sex work. Exposure to violence is unfortunately an ongoing way of life among street children. Fighting with each other and/or being attacked, or living in fear of violence, was experienced by all participants. Several girls shared experiences of potential and actual physical and sexual abuse. For example, Gaby (14 years old) describes her experience as follows: “One day I slept with a young man and then he raped me in the night at the market […] that is why I am afraid of men.” Even finding a place of refuge in the street can be a challenge, as described by Danielle (16 years old): “When I was driven away from home, I slept under the tables of vendors and the morning market. When these vendors would find me, they strike me and say that I’m bakoroman [a derogatory term for a street child].”
Jasmin (14 years old) described the realities of exploitative sex work and vulnerability to violence in relation to the lives of girls on the street as follows: “[…] we take risks because you do not know really with who you go to bed! It is a murderer, a thief […] we do not know […] it’s a risk we take.” This difficult decision-making context was often rationalized by some of the study participants who engaged in exploitative sex work as a job, a form of finding income to start a business, or way of life. Many of the girls used the words “manage” or “managing” to indicate sex work:

I manage, that is managing that I pay my stuff, my needs, I get to have my needs. [One] evening I was hungry I didn’t have money to eat and then told him he will sleep with me […] give me money to go eat. I say I agree, I understood. (Jasmin, 14 years old)

I prostitute myself to be able to eat. If I don’t do that [prostitution], I will have nothing to eat […] I take risks […] I have not clothes, so I prostitute myself for having money to go buy my best clothes. This is what I do [to survive]. (Zara 18 years old)

We don’t like what we are doing but we are forced to do so because if we don’t we will not have enough to eat because there is no parent. (Danielle, 16 years old)

Risk and vulnerability to HIV. An intersection of multiple vulnerabilities appears to be related to HIV risk, as study participants engaged in condomless sex work with stable boyfriend(s). While some girls reported that they strictly engaged in sex with condoms with casual clients, some engaged in sex without condoms with casual clients who were willing to pay more money. Some girls were cognizant of the potential for additional risk: “It takes risk also, especially risk to health, because even with condoms is not safe […] One day I was with a client and then the condom is pierced, and I continued without a condom […] so we managed without” (Jasmin, 14 years old). However, these same participants often had limited knowledge and understanding with respect to HIV: “I know that it [HIV] is a disease, the rest I know nothing” (Jasmin).

Some girls demonstrated selective understanding of the increased risk of contracting HIV through sexual transmission. Zara described her understanding of AIDS as follows: “AIDS, we contract it when we sleep with several men. You sleep with a man without a condom, you’ll still sleep with another without a condom, you’ll necessarily contract the AIDS virus.” However, some of the girls had very limited knowledge. For example, Helen (14 years old), did not understand how HIV was transmitted: “A person who has HIV urinates and it does not take the flush [out].” She also lacked knowledge about where to access testing to determine her HIV status.

A variety of other factors also appear to affect HIV risk. When asked about where they find their sexual customers, participants indicated they found casual clients while “walking alone” on the street at night or in hotels. For example, Zara (18 years old) said:

They find us at the hotel, and we sleep with them. When you want to sleep with them [customers], it requires condoms because there are a lot of disease. If you don’t use a condom you can take a disease and there is nobody to treat you, or care for you when you are sick.

Participants also shared different group associations and membership dynamics. To gain acceptance in a group of street girls, Zara stated that “You need to prostitute yourself to be accepted in our group, if you refuse to prostitute, you can’t enter our group.” Finally, survival needs appeared to overtake sexual protection needs at times: “Yes, I slept with an apprentice driver because I was hungry and when it ended he gave me money” (Karolina, 18 years old).

Substance use and sex work. In addition to substance use and exposure to drugs, some of the participants reported that they used medicines from a pharmacy, but most bought drugs from street vendors and in the market to induce abortions, use as contraceptives and cope with their exhaustion from repeated sexual encounters with men. As part of the exploitative sex work, and overall coping with life on the streets, some of the girls also met additional business costs such as paying their leaders who in turn paid their managers who facilitated hotel encounters. Examples were varied:

Several of the girls with who I prostitute myself take drugs before prostitution, because they say it allows them to sleep with several men without getting tired. (Jasmin, 14 years old)

There are people who take it [drugs] […] just to manage [and cope]. (Adele, 14 years old)
If you consume these substances, you will not have good ideas. There are moments where you’ll want to hurt people and moments where you will have to go to attack people and steal their property. That is not good. (Zara, 18 years old)

Some study participants, however, detested the thought or act of taking drugs and using substances: “When we sleep in the streets this does not mean that we smoke, drink, or that we take drugs, when you think of your parents who do not drink or smoke, you’ll not do this kind of thing” (Paulina, 17 years old).

Substance use and physical and reproductive health. Whether directly or indirectly, all of the girls were exposed to unintended pregnancy, abortion and other lingering health and reproductive health concerns. While issues of exploitative sex work, substance abuse/self-medication and perceived HIV vulnerability were common, some study participants presented experiences of mental turmoil regarding their ability to cope with unwanted pregnancy, limited prospects of getting married and leaving a life of exploitative sex work. Sources of self-medication were also diverse. Street drugs were used when girls had common ailments: “When I am sick, I pay and I get drugs on the street to improve my health” (Gaby, 14 years old). Others described the location of the street vendors where they obtained drugs. “When I’m sick, I pay […] for medicines and tablets in the hands of women to the edges of the road” (Jasmin, 14 years old). Others depended on family members to cover the cost of medication.

Pregnancy prevention was a major reason for procuring medication: “I take pills to not get pregnant, I buy them at the pharmacy […] if you know how to take these pills you won’t get pregnant” (Zara, 18 years). Zara did not believe in abortion because “…) the day that you die, you have a descendant on earth and that is good.” Valerie (18 years old) explained the circumstances surrounding her first pregnancy as follows: “I used condoms with the first [man] but not the second which is the author of my pregnancy.” Danielle (16 years old) stated that “[…] our leader is in charge of giving us contraceptives but me I do not know the name. She asks me to take these contraceptives otherwise I will get pregnancy. She buys lots and she shares them with us.”

Ways of coping and future planning. Despite the challenges of being children of the street, the girls aspired for more in life as illustrated in their hopes and life goals. Study participants expressed several felt needs. As one participant stated, “What interests me is how to succeed in my life […] otherwise neither drugs nor the cigarette doesn’t interest me” (Helene, 14 years old). Educational needs were apparent and discussed repeatedly. Gaby (14 years old) explained her desire for basic education: “If I have means I do evening classes to learn to read and write.” This was echoed by Valerie (18 years old): “I want to read and write like this, so if I am told to write my name, I can write it. That is why I want to go to school.”

Some also hoped for a miracle of finding social philanthropists, e.g., “I would like to find someone who can help me to leave prostitution […]” (Zara, 18 years old), or a godly intervention, e.g., “It is good to pray to God because it is he who can spare you bad things […] I ask that he help me find a stable job and take away negative ideas like prostitution” (Gaby, 14 years old). Some found support amongst each other: “If I am stressed I’ll sit alongside my comrade […] she gives me advice” (Zara, 18 years old). While exploitative sex work was a way of surviving, others felt conflicted because of cultural and religious reasons. For example, as explained by 14-year-old Gaby, “If a boy comes behind you, you are obliged to do what you don’t believe. You do this for money to help your parents.” This suggests that she was also, to some extent, a breadwinner for her parents.

Family circumstances also compounded the lives of some of the participants. Paulina (17 years old) spoke of her family’s hardship as follows:

My parents are poor, they are farmers. We are two girls, my older sister and me. It is my mother who asked me to come with my aunt, the younger sister of my father […] to come to work at home […] I was doing domestic work at home.

While some talked about having older benefactors or men who offered them shelter to store their clothes and rest during the day, others often depended on public amenities: “We wash in the bathroom of the market; there are toilets behind the banana market, it was there that I wash” (Valerie, 18 years old). The girls made the best of their situations and coped with identifying places
for shelter and bathing in the context of their impoverishment. Additional concerns raised by the girls included general well-being and safety. As one girl explained, “We sleep in the market, when people close their stores in the evening, we at these stores are often under the market tables” (Gaby, 14 years old).

Discussion

Our findings reveal that the study participants share a wide variety of negative experiences. They experienced pull factors related to seeking a better life to that of rural poverty and to securing employment, money and shelter (Ward and Seager, 2010). There were also experiences of push factors such as abuse, domestic violence, loss of caregivers and poor relationships with family members. Experiences of sexual abuse were particularly common in these street girls, as has been noted by other researchers (Ward and Seager, 2010).

Previous work reports how street children use transactional sex as a means to address their most urgent needs at the time (Cumber and Tsoka-Gwegweni, 2015; Kombarakaran, 2004). This is consistent with the findings of this study, with the urgent needs of study participants (food, shelter and hygiene) driving many of the girls to transactional sex/sex work (Owoaje and Uchendu, 2009). Cumber and Tsoka-Gwegweni (2015) also highlight the magnitude of vulnerability among African girls who are part of the challenging street life. Factors that increased their vulnerability include a poor family background and exposure to violence. However, some of the participants of the present study expressed hope and (self-)empowerment, for example, in the manner in which they described engaging in commercial sex work as “managing” so that they can survive and meet their everyday needs. This shows that these girls were thinking about their wants and future needs despite their lives of marginality and the vulnerability of street life. Program interventions tailored for such vulnerable girls need to consider ways for them to meet their basic needs; they also must address cultural norms related to the girl child as part of a gender-responsive approach. Engaging communities to find solutions that empower girls and women, such as through access to basic education, is critical.

This study also revealed substance use among children of the street is not uncommon, but that the street is also a source of medications used for minor ailments through to contraception and abortion. Other studies conducted in West Africa (Oppong Asante et al., 2014) also found substance use among children of the street is common, with some using substances to cope with marginality. The girls’ stories also revealed a consistent lack of knowledge about HIV transmission and access to testing. As a result, the health and social well-being of children of the street is compromised by both unsafe sexual practices and substance use, among other factors. Overall, access to basic health services, contraception and education about prevention of HIV and other sexually transmitted diseases should be a central part of intervention strategies to make meaningful impacts on the health of street girls.

This study also suggests links between mental health status and sex work, substance abuse/self-medication, HIV vulnerability, as well as unintended pregnancy and related reproductive health. Mental health disparities and coping strategies exercised by the girls, including faith-based/spiritual approaches, were described in their responses in only a limited way. As such, deeper exploration is needed to understand what was observed and documented. Common for all girls in this study is the context of poverty and cycles of familial poverty. Their home-based experiences of poverty that continue in life on the streets may result in developmental and health-related problems in childhood that may remain with these street children as adults (UNICEF, 2011). Many of the street children interviewed came from poor or dysfunctional families that misused cultural and traditional bonds. A detailed analysis of how long each girl was living on the street may indicate patterns of vulnerability related to their development as adolescents, which would inform health and mental health services.

Health and social service providers and researchers must consider the socio-ecological framework (Bronfenbrenner and Morris, 2007) in which human and adolescent development critically occur in the strengthening of current interventions and design of new ones. Intersectionality must be considered as an additional significant theoretical and analytical lens for
understanding the influence of cultural practices that expose girls to gender-based violence (McCall, 2005; Creswell and Plano Clark, 2011), vulnerability to HIV, substance use, unwanted pregnancy and other related issues such as mental health challenges that are also apparent. In the case of African girls, unveiling the complexities of their perspectives is essential to understanding and making meaning of experiences (Creswell and Plano Clark, 2011) that are not independent of gender differences (Crenshaw, 1991). Ressia et al. (2017) describe how the seminal work of Floya Anthias “helps to explain how disadvantage is created within contexts, and illuminates the complexities of people’s lived experiences, especially those of vulnerable individuals and groups” (p. 378). Cumber and Tsoka-Gwegweni (2015) report that the research from Southern and West Africa indicates how street girls are subject to more severe situations than boys, given the that street girls are “[…] more amenable than street boys to being recruited to institutions, staying with relatives, being recruited into sex work, being deceived to fall in relationships with older men or sugar daddy” (p. 86), which makes them less visible on the streets than boys. More research, programs, practices, and policies tailored to street girls who remain “hidden” are urgently needed. The results here on the intersectionality of the lives of girls on the streets of Abidjan can inform such interventions.

The themes that emerged in the findings reflect the micro, mezzo and macro levels within which these girls navigate their lives on the streets of Abidjan. The relationship of these themes to the socio-ecological framework and related interventions are described in Table II. While not an exhaustive list of interventions, those identified represent initial considerations for work with girls who are children of the streets. The socio-ecological framework provides the opportunity to inform social action and the practices of health and social care providers working with street children and the context within which they navigate their daily lives. As poverty persists and research provides a better understanding of the lives of street children and their development, health and mental health social service providers are responsible for contributing to a cycle of adaptive integration of street children, rather than the cycle of continued marginality.

Finally, the harmful childhood experiences among children of the street could be an indictment of African shared parenting cultural practices that are meant to create a meaningful safety net and nurture educational needs. In the context of parenting in sub-Saharan African nations including Ivorian communities, the extended family system promotes parenting “of biological and non-biological children” (Amos-Mawusi, 2013). Amos-Mawusi (2013) also accentuates how shared parenting practices are integral to African social norms, as reinforced by sayings such as “a single hand cannot nurse a child” (p. 69). However, in agreement with prior research (Muriuki et al., 2018; Maposa et al., 2016), this study indicates that shared parenting and extended family safety nets are fractured, with an obvious lack of parental oversight and failure to meet even the most basic needs of these girls. Our results support the development of alternative protection

<table>
<thead>
<tr>
<th>Theme</th>
<th>Socio-ecological framework</th>
<th>Interventions</th>
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</thead>
<tbody>
<tr>
<td>Exposure to violence and abuse before and on the street</td>
<td>Mezzo (community level)</td>
<td>Incorporation of trauma-informed approach for community-based education and behavioral interventions</td>
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<tr>
<td>Exposure to violence and sex work</td>
<td>Micro and macro (individual and structural/systems levels)</td>
<td>Trauma-informed approaches that integrate engagement at the individual and community counseling levels</td>
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<tr>
<td>Risk and vulnerability to HIV</td>
<td>Micro (individual)</td>
<td>Sexual risk taking and HIV education and behavioral interventions at the individual level</td>
</tr>
<tr>
<td>Substance use and sex work</td>
<td>Micro and mezzo (individual and community levels)</td>
<td>Substance use and harm reduction interventions at the individual and group level</td>
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<tr>
<td>Substance use and physical and reproductive health</td>
<td>Micro, mezzo and macro (individual, community, and structural/systems levels)</td>
<td>Incorporation of access to contraceptives and gynecological care</td>
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<tr>
<td>Ways of coping and future planning</td>
<td>Micro (individual)</td>
<td>Access and retention to basic education in schools and integration of counseling that is trauma-informed</td>
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systems in communities and countries like Côte d’Ivoire with high rural to urban child and youth migratory populations. Research and practices in effective reporting systems both inside and outside of school for abuse in the home would make interventions more likely for children who may be experiencing verbal, physical and sexual abuse and therefore may prevent their departure to life on the streets. In particular, the PEN-3 model (Iwelunmor et al., 2014) can improve cultural understandings of factors impacting Ivorian girls migrating to Abidjan for a better future that end up becoming children of the street. This model utilizes the acronym PEN to inform a balanced understanding of good, bad and non-threatening collective African sociocultural norms such as shared parenting or an extended family style of raising or fostering or nurturing children. Some practices can positively (P) help girls and/or boys to develop skills that enhance their transition to adulthood. However, existential (E) practices that influence a cultural identity, such as becoming a parent to “non-biological children” (Amos-Mawusi, 2013), can perhaps nurture parenting skills or help young people to develop an extended family identity or belonging. Where there is no oversight within shared parenting arrangements, the PEN-3 model can unveil practices that negatively (N) impact health. Future work could use this model to explore why, in some cases, the family safety nets become fractured and expose young girls to the myriad of consequences of becoming children of the street.

Limitations

The results of this qualitative research are subject to several limitations. This study had limited information with respect to the HIV and mental health status of participants. Specifically, the information obtained was self-reported and lacked data on participant HIV status; there was also limited detail related to the coping strategies participants used to deal with the stress of life on the street. The interviewers also had limited opportunities to establish trust with the street children; greater trust may have led to more information and description about their lives. Despite such topics arising in the thematic analysis, this study did not explicitly focus on the experiences of poverty prior to migration or mental health strategies for coping that include faith-based/spiritual approaches. In addition, Côte d’Ivoire faced a notable period of crisis and instability in the mid-2000s, followed by political violence and displacement after a contested 2010 presidential election. Limited reports are available with respect to the experiences of girls following this conflict and instability, and information on their experiences related to intimate partner violence (Shuman et al., 2016) and other forms of violence and vulnerabilities continues to be limited. There is also a lack of information on the extent of participant connections to family; the interview data revealed instances of potential parent connections despite the participants being of the street. These relationships need further exploration to inform intervention development and implementation.

Conclusion

Our findings identify salient themes to inform the development of effective interventions and implications to health and social service provider practices and research based on the negative experiences of the study participants. Future intervention studies and programs are needed to meet the basic needs and sexual reproductive health of this population as aligned with sustainable development goals (such as educational access, gender equality), national (and international) legal frameworks and policies. The authors of this paper represent a team of professionals and paraprofessionals in social work, public health, nursing and medicine. This inter/multidisciplinary perspective is critical for informing multi-level integrated research, practice, programs and policies to support “whole person” approaches for vulnerable girls living on the street. Girls living on the street continue to be a “hard to reach” key population with respect to the prevention and intervention of HIV, violence, pregnancy and mental health challenges. There are also complexities related to migration and the vulnerabilities experienced by girls because of their gender. Understanding these complexities will help to ease gender inequalities through the implementation of culturally appropriate interventions. The appreciation of the intersectionality of their lives to inform health and mental health social services and practice is essential.
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Forward-backward translation and cross-cultural validation of the Center for Epidemiologic Studies Depression scale among Tigrigna-speaking Eritrean refugees

Mulubrhan F. Mogos, Jason W. Beckstead, Mary E. Evans, Kevin E. Kip and Roger A. Boothroyd

Abstract

Purpose – The Center for Epidemiologic Studies Depression (CES-D) scale is a widely used instrument for studying depression in the general population. It has been translated into several languages. Cross-cultural relevance of the construct of depression and cultural equivalence of the CES-D items used to measure it are crucial for international research on depression. Given the increasing number of refugees from Eritrea entering the USA and Europe, there is a need among health care researchers and providers for an instrument to assess depressive symptoms in the native language of this vulnerable population. The paper aims to discuss these issues.

Design/methodology/approach – The study employed forward-backward translation and assessed the CES-D scale for cross-cultural research and depression screening among Tigrigna-speaking Eritrean refugees. Forward-backward translation, cognitive interview and semantic analysis were conducted to ensure equivalence of comprehension of the items and instructions between Tigrigna- and English-speaking samples. Multi-group confirmatory factor analysis was used to assess the measurement invariance of the translated version.

Findings – Translation efforts were successful as reflected by the results of semantic analysis and pilot testing. Evidence supporting the measurement invariance of data collected using the Tigrigna version of the CES-D was obtained from a sample of 253 Eritrean refugees in the USA.

Practical implications – The findings of this study provide support for reliability and validity of data collected using the Tigrigna version of the CES-D scale. This important tool for assessing depression symptoms among Eritrean refugees is now available for health care providers and researchers working with this vulnerable population.

Originality/value – This work is an original work of the authors and it has not been published previously.

Keywords Depression, Cross-cultural, Refugees, Eritrea, CES-D scale

Introduction

According to the US National Health and Nutrition Examination Survey data, 2007–2010, depression affects 8 percent of Americans over 12 years of age (CDC, 2012). Similar facts are also found in Europe, depression is the second most prevalent mental disorder affecting 30.9m individuals across all age groups and it is responsible for 7.2 percent of the overall burden of disease in Europe (Wittchen et al., 2011). According to a recent meta-analysis based on studies from 20 different countries, the aggregate prevalence of depression among immigrants is 15.6 percent.
The authors of this meta-analysis concluded that the observed prevalence of depression among immigrants is not significantly different from that of native participants (Alegría et al., 2018).

Early detection and proper management are key to reduce the consequences of depression. Early screening and detection requires a reliable and valid instrument, and the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977) has been widely used to screen for depression in community settings. With the ever-increasing diversity secondary to increasing global trends of migration, translation and adaptation of the CES-D scale for use among immigrants with cultural and language differences has also increased. The cross-cultural translation and adaptation of self-administered scales for use in different languages necessitates the use of a multi-step method. It is now recognized that if instruments are to be used across cultures, their items must not only be forward–backward translated linguistically, but also adapted conceptually across different cultures (Ferraz, 1997; Guillemin et al., 1993). Attention to the details of translation and adaptation process increases the confidence that the concept under consideration is being measured in a similar manner in cross-cultural studies. Measurement invariance testing using confirmatory factor analysis (CFA) is the recommended standard for assessing the cross-cultural validity of translated instruments (Beckstead et al., 2008). This paper presents a detailed description of the forward–backward translation of the CES-D scale into Tigrigna, the most widely used language in Eritrea, and offers support for the reliability and validity of data collected using the translated version.

Although Eritrea is a small country with an estimated population of 5m, it represents 23 percent of refugees arriving to Italy (UNHCR, 2016). In the first 10 months of the year 2014 alone, nearly 37,000 Eritreans applied for asylum in 38 European countries (The Guardian, 2014). With an estimated 411,300 refugees originating from the country by the end of 2015, Eritrea was the ninth largest country of origin of migrants, a 13 percent increase from the previous year (UNHCR, 2015). An accurate number of Tigrigna-speaking Eritrean refugees in the USA is not known; however, recent reports indicate that Eritrea is one of the top 10 refugee countries of origin accounting for 2.3 percent of refugees entering the USA in 2015 (Zong and Batalova, 2015). The current study did not make distinction between immigrants and refugees during the recruitment process. However, it is safe to say that the majority of Eritrean migrants in the USA are refugees. In this study, the term Eritrean refugees is used to describe all Eritreans who left Eritrea during the long war of independence with Ethiopia, those who continue to flee from effects of another round of boarder conflict with Ethiopia, and those who came through programs like the diversity visa lottery, family reunion, and education and currently reside in the USA.

**Depression among refugees and other immigrants**

Like most immigrants, the experiences of Eritrean immigrants are surrounded by multiple events occurring in multiple contexts before, during and after migration (Fenta et al., 2004; Porter and Haslam, 2005; Pumariega et al., 2005). In addition to the pre-migration traumatic experiences, immigrants are subject to pre- and post-migration stressful experiences such as verbal abuse, physical abuse, torture, marginalization, socioeconomic disadvantage, acculturation difficulties, loss of social support, racism and cultural bereavement (Castañeda et al., 2015; Kirmayer et al., 2011; Pumariega et al., 2005). Social determinants of health (Fenta et al., 2004), individual characteristics such as age and sex of immigrants have also been identified as important factors that moderate the relationship between immigrant status and mental health outcomes such as depression (Fazel et al., 2012). The role of age (old vs young) is relatively inconclusive. However, most of the researchers agree that older immigrants and children are more vulnerable than middle age adults in general (Fazel et al., 2012). Compared to males, female immigrants experience worse mental health outcomes for multiple reasons including exposure to sexual exploitation (Bandyopadhyay et al., 2010; Delara, 2016; Lansakara et al., 2010).

The methodological approach described in this paper is based on cross-cultural adaptation literature from a range of disciplines and on the psychometric concept of measurement invariance. First, the study provides a brief overview of the CES-D scale. Then, details of the translation approach and psychometric analysis of data collected using the newly translated CES-D scale are presented. Implications for future research are also discussed.
Overview of the CES-D scale

The CES-D scale, developed by Radloff (1977), is a self-administered scale for studying depression in the general population. The scale has been in the public domain for over 35 years. The CES-D scale contains 20 statements, such as “I felt depressed” and “I felt that everything I did was an effort.” Respondents indicate how often they experienced each feeling during the past week using a four-point scale: 0 = “none of the time,” 1 = “a little of the time,” 2 = “a moderate amount of time” and 3 = “most of the time.” All items, along with brief identifiers, are shown in Table I. The scale has been forward–backward translated and used in multiple languages and cultures. Among the many depression scales that are available for use, we chose to use the CES-D because the CES-D scale is the most appropriate to measure depressive symptoms in a community setting and has been used in many cultures and languages including immigrants/refugees allowing cross-cultural comparison (Canady et al., 2009; Vilagut et al., 2016).

Four items are reversed scored prior to summing responses to obtain a total score ranging from 0 to 60. A score of 16 or higher indicates depressive risk. Four factors, namely depressive affect, positive affect, somatic/vegetative activity (SV) and interpersonal feelings (IP), make up the underlying structure of the scale (Radloff, 1977). The CES-D scale has been forward–backward translated to Arabic (Ghubash et al., 2000), Chinese (Cheung and Bagley, 1998), Dutch (Beekman et al., 1994), French (Fuhrer and Rouillon, 1988), German (Hautzinger, 1988), Greek (Fountoulakis et al., 2001), Korean (Noh et al., 1998), Italian (Fava, 1983), Japanese (Shima, 1985), Turkish (Spijker et al., 2004) and many other languages worldwide. Reliability (internal consistency using Cronbach’s $\alpha$) ranged from 0.80 to 0.90 across these studies. Test-retest reliability at two weeks has ranged from 0.40 to 0.70 (Devins et al., 1988). The scale has been shown to discriminate between depressed and non-depressed adolescents (Dierker et al., 2001). Partial longitudinal measurement invariance of the English version of the CES-D scale over a three-year period has also been reported (Mogos et al., 2015).

Measurement invariance

A necessary assumption when comparing two or more sociocultural groups using multi-item scales designed to assess individual differences on some underlying constructs is that the items quantify the construct function in the same way across samples from different cultures.

Table I  The CES-D scale: a self-report depression scale for research in the general population

<table>
<thead>
<tr>
<th>Item</th>
<th>Content</th>
<th>Brief label</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I was bothered by things that usually do not bother me</td>
<td>Bothered</td>
</tr>
<tr>
<td>2</td>
<td>I did not feel like eating; my appetite was poor</td>
<td>Appetite</td>
</tr>
<tr>
<td>3</td>
<td>I felt that I could not shake off the blues even with help from my family or friends</td>
<td>Blues</td>
</tr>
<tr>
<td>4</td>
<td>I felt that I was just as good as other people (R)</td>
<td>Good as</td>
</tr>
<tr>
<td>5</td>
<td>I had trouble keeping my mind on what I was doing</td>
<td>Mind</td>
</tr>
<tr>
<td>6</td>
<td>I felt depressed</td>
<td>Depressed</td>
</tr>
<tr>
<td>7</td>
<td>I felt that everything I did was an effort</td>
<td>Effort</td>
</tr>
<tr>
<td>8</td>
<td>I felt hopeful about the future (R)</td>
<td>Hopeful</td>
</tr>
<tr>
<td>9</td>
<td>I thought my life had been a failure</td>
<td>Failure</td>
</tr>
<tr>
<td>10</td>
<td>I felt fearful</td>
<td>Fearful</td>
</tr>
<tr>
<td>11</td>
<td>My sleep was restless</td>
<td>Sleep</td>
</tr>
<tr>
<td>12</td>
<td>I was happy (R)</td>
<td>Happy</td>
</tr>
<tr>
<td>13</td>
<td>I talked less than usual</td>
<td>Talked less</td>
</tr>
<tr>
<td>14</td>
<td>I felt lonely</td>
<td>Lonely</td>
</tr>
<tr>
<td>15</td>
<td>People were unfriendly</td>
<td>Unfriendly</td>
</tr>
<tr>
<td>16</td>
<td>I enjoyed life (R)</td>
<td>Enjoy</td>
</tr>
<tr>
<td>17</td>
<td>I had crying spells</td>
<td>Crying</td>
</tr>
<tr>
<td>18</td>
<td>I felt sad</td>
<td>Sad</td>
</tr>
<tr>
<td>19</td>
<td>I felt that people disliked me</td>
<td>Disliked</td>
</tr>
<tr>
<td>20</td>
<td>I could not “get going”</td>
<td>Get going</td>
</tr>
</tbody>
</table>

Notes: CES-D, Center for Epidemiologic Studies Depression scale; (R), reverse scored item
Measurement invariance is a psychometric property that is referred to as measurement invariance. Beckstead et al. (2008) defined measurement invariance as the ability of a construct to be measured in the same way across different groups. Using CFA, if items are shown to measure the same latent variables and to be related to the latent variables in the same way, comparisons within and between groups can be interpreted as true differences on the construct. Measurement noninvariance suggests that a construct has a different structure or meaning to different groups and so the construct cannot be meaningfully compared across groups (Putnick and Bornstein, 2016).

Measurement invariance is tested and established in a stepwise manner using a series of multi-group CFA models that impose increasingly stringent constraints on model parameters across groups. The weakest form of measurement invariance is referred to as configural invariance and reflects the extent to which the items from the scale show the same pattern of salient (nonzero) and nonsalient (zero or near zero) factor loadings across groups. Demonstrating configural invariance implies that the dimensionality of the scale is equivalent across groups. If this hypothesis of equivalent configuration is supported, the analysis shifts to assessing a stronger form of invariance known as metric invariance. Metric invariance refers to the equivalence of factor loadings across groups. Demonstrating metric invariance implies that the items contribute to the scale scores in the same way across groups. If this hypothesis of equivalent factor loadings is supported, then analysis shifts to assessing structural invariance. Structural invariance refers to the equivalence of the factor covariance matrix across groups. Demonstrating structural invariance implies that the covariances (correlations) among the factors are equivalent. In other words, the dimensions of the construct are related in similar ways across groups. Beckstead et al. (2008) provide a detailed discussion and illustration of how measurement invariance may tested and established in nursing research and their approach is used in the current article.

**Method**

Prior to beginning the project, the study was reviewed and approved by the Institutional Review Board of the authors’ institution (name removed to comply with the blind review process). Translation and adaptation recommendations provided by Hambleton and Zenisky (2011) served as the guidelines for the early stages of the study (Hambleton and Zenisky, 2011); these are outlined below. Reliability of the Tigrigna version of the scale was estimated using Cronbach’s $\alpha$ and test-retest correlation. To examine cross-cultural measurement invariance of the translated version, the study utilized existing CES-D data from English-speaking participants from a separate study conducted by one of the authors of the current study (Aiyer et al., 2007). Measurement invariance testing was conducted using the stepwise approach outlined by Beckstead et al. (2008). Reliability is quantified using Cronbach’s $\alpha$ and test-retest correlation, validity is quantified via measurement invariance testing using multi-group CFA. Statistical analyses were done using SPSS 19 and LISREL 9.1 (Jöreskog and Sörbom, 2012).

**Sample size**

Power for assessing goodness of fit in CFA models is a function of sample size and the complexity of the model (i.e. degrees of freedom). MacCallum et al. (1996) showed how the estimates of minimum sample size necessary for obtaining adequate power may be calculated using the root mean square error of approximation (RMSEA) and its confidence intervals (MacCallum et al., 1996). In models with many degrees of freedom power of 0.90 may be obtained with sample sizes of approximately 200. The four-factor model of the CES-D and its 20 items consists of 164 degrees of freedom. Using their approach, a sample of 250 will provide power of at least 0.90 to test hypotheses of “close fit” and “not-close fit” with an $\alpha$ level of 0.05. Anticipating that there may be some degrees of missing data, the study recruited 260 Tigrigna-speaking participants. In total, 7 of the 260 Tigrigna-speaking participants (2.7 percent) were excluded from the final analyses for incomplete data on the CES-D scale.

**Setting**

Eritrean participants were recruited from community gatherings at churches, wedding ceremonies and other social (family) gatherings in Dallas Texas and in Tampa Florida using a
convenience sampling approach. Participants received a written consent form in Tigrigna. The consent form provided information about the study. Participants were allowed to take copy of the consent form home and discuss the study with friends and family members before deciding to participate or not. Participation in the study was completely voluntary. We did not collect information about the educational status of participants. However, all participants were able to read and understand Tigrigna.

**Forward and backward translation (Step 1).** The principal investigator identified four bilingual competent translators from the USA and Europe based on their educational background and experience. Translators were provided with instructions by the investigators regarding inferences, wording and phrasing. The importance of rigorous trans-cultural translation was emphasized. Two translators independently translated the CES-D scale from the original English version to Tigrigna. They then discussed and agreed upon a translated version to be used for back translation. A different two translators independently back-translated the Tigrigna version of the CES-D scale to English, and then discussed and agreed upon the back translation. The four translators then met to compare and discuss the Tigrigna version and agreed on a version to undergo content and semantic equivalence testing.

Content and semantic equivalence testing was conducted by the remaining three translators who examined the original English scale, the Tigrigna translation and the back-translated English version. These individuals scored each item in the Tigrigna version using an eight-point scale ranging from perfectly equivalent (7) to not at all equivalent (0). The scores were averaged for each item and items with a score of 4 or less were sent back to the first four translators for forward and back translation. These revised items were then reexamined for content and semantic equivalence and this process iterated until all items had average ratings of 4 or higher. The Tigrigna version of the CES-D scale was then deemed ready for use the next stage of development involving cognitive interviews.

**Cognitive interview and content analysis (Step 2).** The cognitive interview method involves asking a sample of people from a target population to describe all the thoughts, feelings and ideas that come to mind when examining questionnaire instructions and items; the goal is to obtain suggestions to possibly clarify wording. Cognitive interviews were conducted with ten Tigrigna-speaking, and with ten English-speaking participants. Each interview was audio recorded and later reviewed for evidence of between group differences in understanding and interpretation of items and instructions. This strategy is accepted as a valuable part of evaluation in the process of developing questionnaires (Carbone et al., 2002).

**Pilot testing (Step 3).** Prior to administering the translated CES-D scale to our primary Eritrean sample, the study pilot tested it in a small sample (n = 30) to identify potential sources of translation error, estimate time to complete the scale, and assess feasibility of administering the scale in a given setting.

**Measurement invariance testing (Step 4).** Measurement invariance was tested and established in a stepwise manner using a series of multi-group CFA models that imposed increasingly stringent constraints on model parameters across groups. When conducting CFA, current practice emphasizes the importance of using multiple fit statistics to assess model fit (Kline, 2015). Typically, the absolute fit index, $\chi^2$ and two to four alternative fit indices, including the RMSEA, comparative fit index (CFI), Tucker–Lewis index and the standardized root mean square residual, are recommended (Putnick and Bornstein, 2016). Empirically based rules of thumb for interpreting these ALTs are as follows: RMSEA values below 0.05 indicate an excellent degree of model fit, values between 0.05 and 0.08 indicate adequate fit and values over 0.10 indicate poor fit. Higher values on both the CFI and the TFI indicate better fit; values of 0.90 or higher may be interpreted as reflecting good fit of a model to the data.

When testing measurement invariance across multiple groups the $\Delta \chi^2$, or change in $\chi^2$-test, is overly sensitive to small, unimportant deviations of fit due to large sample sizes. Researchers have therefore suggested criteria for changes in ALTs for comparing such nested models (Chen, 2007; Cheung and Rensvold, 2002; Meade et al., 2008). Cheung and Rensvold (2002) suggest a change in CFI ($\Delta$CFI of 0.01 or more) is substantive. Chen (2007) suggests a $\Delta$CFI of 0.01
paired with a ΔRMSEA of 0.015 to be indicative of substantive differences in model fit when assessing measurement invariance.

Reliability is quantified using Cronbach’s α and test-retest correlation, validity is quantified via measurement invariance testing using multi-group CFA. The CES-D scale questionnaire is in the public domain and freely available for use. The study was approved by the University of South Florida Institute of Review Board.

Results

Participants

Data from seven Eritrean participants were discarded for failing to answer all items on the Tigrigna version of the CES-D leaving \( n = 253 \) for analysis. Of these 18–64 years of age adults, 164 were male and the average age of the entire sample was 37.5 years (SD = 10.7). Data from the previously published study of English-speaking 45–75 years old participants (\( n = 1,918 \)) completing the CES-D were comprised of 661 males and the average age of the entire sample was 59.1 years (SD = 7.4).

Translation assessment and preliminary analysis

Content and semantic equivalence testing by four bilingual translators revealed that the CES-D items were adequately translated. All items showed an average score of at least 4.3 on the equivalence rating scale (0 = not at all equivalent, 7 = perfectly equivalent). Data from the cognitive interview process revealed no substantive differences in understanding or interpretation of the CES-D scale items and instructions across the two groups. The pilot study (\( n = 30 \)) showed that distributing and collecting questionnaires via church and community organizations was a feasible approach for data collection. On average, it took approximately 6 min to complete the translated version of the scale. Participants reported no difficulties in understanding the items or the instructions.

Reliability

Cronbach’s α was 0.86 for the Tigrigna-speaking sample and 0.91 for the English-speaking sample. These values are high relative to those (0.84–0.85) originally reported by Radloff (1977). The test-retest reliability correlation for data collected using the Tigrigna version of the CES-D was 0.91.

Testing measurement invariance

The first step in the CFA analysis was to fit the four-factor model of the CES-D scale to the data from each sample separately. The fit statistics for the English and Tigrigna-speaking samples are shown in Table II (Models E and T, respectively). While the \( \chi^2 \) values are large (due to sample sizes), the three ALTs concur that the model fits the data well in both samples.

The series of multi-group CFA models examine measurement invariance. Model M₀ is the unconstrained model permitting all parameters to vary freely between the two samples and provides the baseline against which more restrictive models are compared to establish measurement invariance. Note that the \( \chi^2 \) for this model is (within rounding error) equal to the sum of the \( \chi^2 \) values for Models E and T. The ALTs are the sample size weighted averages of the respective indices from Models E and T. All three ALTs concur that the hypothesized four-factor model fits the data from both samples offering support for configural invariance. The standardized factor loadings from both samples are shown in Table III for comparison.

Model M₁ tested metric invariance by constraining the (unstandardized) factor loadings to be equivalent across the two samples. While the \( \Delta \chi^2 \)-test of Model M₁ vs Model M₀ was significant (\( \Delta \chi^2 = 99.21, \Delta df = 16, p < 0.05 \), due to the large sample size), changes in the ALTs were trivial relative the recommended criteria indicating that the equivalence constraints did not
This offers support for the metric invariance of the data collected using the Tigrigna version of the CES-D scale.

Model $M_2$ tested structural invariance. In addition to constraining the factor loadings to be equivalent across the two samples (Model $M_1$), this model imposed equivalence constraints on the factor covariance matrix. Again the $\Delta \chi^2$ test comparing this model to the less restrictive models was significant ($\Delta \chi^2 = 210.75, \Delta df = 8, p < 0.05$; $\Delta \chi^2 = 309.96, \Delta df = 24, p < 0.05$), but the changes in the ALTs were well below the recommended criteria for substantive model

### Table II Summary of model fit statistics and model comparisons

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>$\chi^2$</th>
<th>df</th>
<th>RMSEA</th>
<th>90% LB</th>
<th>90% UB</th>
<th>CFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-group CFA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>English-speaking sample</td>
<td>1,497.60</td>
<td>164</td>
<td>0.0651</td>
<td>0.0621</td>
<td>0.0682</td>
<td>0.977</td>
<td>0.973</td>
</tr>
<tr>
<td>T</td>
<td>Tigrigna-speaking sample</td>
<td>301.06</td>
<td>164</td>
<td>0.0575</td>
<td>0.0471</td>
<td>0.0676</td>
<td>0.965</td>
<td>0.960</td>
</tr>
<tr>
<td>Multi-group CFA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M_0$</td>
<td>Unconstrained</td>
<td>1,797.51</td>
<td>328</td>
<td>0.0643</td>
<td>0.0614</td>
<td>0.0672</td>
<td>0.976</td>
<td>0.972</td>
</tr>
<tr>
<td>$M_1$</td>
<td>Metric invariance</td>
<td>1,896.72</td>
<td>344</td>
<td>0.0645</td>
<td>0.0617</td>
<td>0.0674</td>
<td>0.975</td>
<td>0.972</td>
</tr>
<tr>
<td>$M_2$</td>
<td>Metric and structural invariance</td>
<td>2,107.47</td>
<td>352</td>
<td>0.0678</td>
<td>0.0650</td>
<td>0.0706</td>
<td>0.972</td>
<td>0.969</td>
</tr>
<tr>
<td>Multi-group model comparisons</td>
<td>$\Delta \chi^2$</td>
<td>$\Delta df$</td>
<td>$\Delta$RMSEA</td>
<td>$\Delta$CFI</td>
<td>$\Delta$TLI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M_1$–$M_0$</td>
<td>99.21</td>
<td>16</td>
<td></td>
<td>0.0002</td>
<td></td>
<td></td>
<td>0.001</td>
<td>0.000</td>
</tr>
<tr>
<td>$M_2$–$M_1$</td>
<td>210.75</td>
<td>8</td>
<td></td>
<td>0.0033</td>
<td></td>
<td></td>
<td>0.003</td>
<td>0.003</td>
</tr>
<tr>
<td>$M_2$–$M_0$</td>
<td>309.96</td>
<td>24</td>
<td></td>
<td>0.0035</td>
<td></td>
<td></td>
<td>0.004</td>
<td>0.003</td>
</tr>
</tbody>
</table>

Notes: CFA, confirmatory factor analysis; RMSEA, root mean square error of approximation; 90% LB, 90% UB, 90% confidence interval lower bound and upper bound estimates for RMSEA, respectively; CFI, comparative fit index; TLI, Tucker–Lewis index of fit. Metric invariance refers to the constrained equivalence of factor loadings across groups, and structural invariance refers to the constrained equivalence of variances and covariances among the factors across groups.

### Table III Unconstrained model

<table>
<thead>
<tr>
<th>Item</th>
<th>Label</th>
<th>DA</th>
<th>PA</th>
<th>SV</th>
<th>IP</th>
<th>DA</th>
<th>PA</th>
<th>SV</th>
<th>IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Blues</td>
<td>0.618</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.785</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>Depressed</td>
<td>0.725</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.848</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>9</td>
<td>Failure</td>
<td>0.544</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.685</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>10</td>
<td>Fearful</td>
<td>0.662</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.591</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>14</td>
<td>Lonely</td>
<td>0.682</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.682</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>17</td>
<td>Crying</td>
<td>0.639</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.521</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>18</td>
<td>Sad</td>
<td>0.625</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.786</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>Good as</td>
<td>–</td>
<td>0.550</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.594</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>Hopeful</td>
<td>–</td>
<td>0.562</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.734</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>12</td>
<td>Happy</td>
<td>–</td>
<td>0.805</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.811</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>16</td>
<td>Enjoy</td>
<td>–</td>
<td>0.600</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.699</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1</td>
<td>Bothered</td>
<td>–</td>
<td>–</td>
<td>0.479</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.582</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>Appetite</td>
<td>–</td>
<td>–</td>
<td>0.413</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.405</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>Mind</td>
<td>–</td>
<td>–</td>
<td>0.611</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.645</td>
<td>–</td>
</tr>
<tr>
<td>7</td>
<td>Effort</td>
<td>–</td>
<td>–</td>
<td>0.580</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.755</td>
<td>–</td>
</tr>
<tr>
<td>11</td>
<td>Sleep</td>
<td>–</td>
<td>–</td>
<td>0.668</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.464</td>
<td>–</td>
</tr>
<tr>
<td>13</td>
<td>Talked less</td>
<td>–</td>
<td>–</td>
<td>0.564</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.609</td>
<td>–</td>
</tr>
<tr>
<td>20</td>
<td>Get going</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.622</td>
<td>–</td>
</tr>
<tr>
<td>15</td>
<td>Unfriendly</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.582</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.567</td>
</tr>
<tr>
<td>19</td>
<td>Disliked</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.660</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.813</td>
</tr>
</tbody>
</table>

Notes: DA, depressed affect; PA, positive affect; SV, somatic/vegetative activity; IP, interpersonal feelings. Completely standardized within-groups factor loadings. Italic items were used as reference variable for each factor. All factor loadings are significant ($p < 0.05$)
degradation (see Table II). These results suggest that the relationships among the four factors are equivalent in the English and Tigrigna versions and offer further support for the measurement invariance of the data collected using the Tigrigna version of the CES-D scale.

Discussion

This study reports on the psychometric properties (reliability and validity) of data collected using the CES-D scale for Tigrigna-speaking immigrants. The data yielded from this translated version showed good reliability and measurement invariance. The four-factor model of the CES-D scale fits the data collected from Tigrigna speakers and English speakers, extending the generalizability of this factor structure to Tigrigna-speaking immigrants for the first time. The Tigrigna translation of the CES-D and the original English CES-D scales are provided in Appendices 1 and 2.

Major depressive disorder is one of the most disabling health disorders and even moderate depressive disorder has been compared roughly to the disability associated with multiple sclerosis and deafness (Eaton et al., 2008). Thus, it is important to assess individuals and populations for the presence of depression and to institute treatment to improve quality of life. Considering the increasing number of Eritrean immigrants and the traumatic experiences that many of these immigrants might have been through during their journey, the value of this newly translated CES-D scale cannot be overstated. Nurses and other health care providers in countries with a large population of Eritrean immigrants can use this translated scale to screen for depression. Aid organizations and health care providers working in refugee camps that host large groups of Tigrigna-speaking Eritrean immigrants could also use this brief scale to identify at-risk individuals in a timely manner. Nurse researchers interested in intervention programs to manage depressive symptoms in Tigrigna-speaking Eritrean immigrants could use this scale to measure program effectiveness. Future studies should also employ a large sample size of Eritrean immigrants so that sex and age specific depressive symptom data can be generated.

Reliability and validity are properties of the data we obtain and how we use them, not properties of the instruments used to collect these data (Beckstead, 2013). This implies that the results reported in this paper represent an initial step in providing support for the integrity and utility of the newly translated version of the CES-D. It is incumbent upon researchers who use the Tigrigna version to report the psychometric properties of the data that they collect in future applications.

As with any empirical study, the results reported here have some limitations. First, the Eritrean immigrants who provided data on the CES-D were a convenience sample of those arriving in the USA. While this could be viewed as a problem for prevalence estimation (which we do not attempt), the authors feel that this did not adversely affect the accuracy of our translation and validation efforts. Second, measurement invariance testing can include scalar invariance or cross-group equivalence of item intercepts as well as item factor loadings (Putnick and Bornstein, 2016). The authors did not test scalar invariance because our goal was not to compare the severity of depression in the two samples (i.e. to test differences on latent factor means), but rather, to focus on the equivalence of the item–factor relationships (i.e. covariance structure) in data collected using the Tigrigna and English versions of the CES-D scale. We did not collect detailed information about the immigration history of participants to make distinction between immigrants and refugees. However, based on anecdotal data, most Eritrean immigrants in the USA can be categorized as refugees. Hence, we used the term refugee throughout this paper.

Conclusion

As vulnerable populations from Africa and the Middle-East continue to migrate from troubled countries into the USA and into various European countries, it is vital that health care professionals have the means available to screen for mental health problems such as depression in order to identify individuals in need of counseling and other treatment services. This paper offers a translated version of a well-known depression screening instrument, the CES-D scale, in Tigrigna, the native
language of Eritrea. The study provided support for the reliability and validity of data collected using this translated version. It is our hope that this important tool will facilitate identification and treatment of Eritrean immigrants who suffer from depression.

References


Further reading


(The Appendix follows overleaf.)
Table 1. CES-D Scale

INSTRUCTIONS FOR QUESTIONS: Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week. HAND CARD A.

Rarely or None of the Time (Less than 1 Day)
Some or a Little of the Time (1-2 Days)
Occasionally or a Moderate Amount of Time (3-4 Days)
Most or All of the Time (5-7 Days)

During the past week:
1. I was bothered by things that usually don't bother me.
2. I did not feel like eating; my appetite was poor.
3. I felt that I could not shake off the blues even with help from my family or friends.
4. I felt that I was just as good as other people.
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
7. I felt that everything I did was an effort.
8. I felt hopeful about the future.
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.
13. I talked less than usual.
15. People were unfriendly.
16. I enjoyed life.
17. I had crying spells.
18. I felt sad.
19. I felt that people dislike me.
20. I could not get "going."

reported elsewhere (Comstock & Helsing, in press), as are analyses of characteristics of those who refused to be interviewed (Comstock & Helsing, 1973; Kassen & Roth, 1974). Refusals were significantly more likely to have lower education and come from smaller households than respondents. Analyses have been made of respondents interviewed in the assigned week ("on time") versus the harder to find respondents interviewed in the following three weeks ("late") (Mebane, 1973). Males and working people were slightly overrepresented among the "late" respondents, but the "late" did not differ from the "on time" on the psychological measures in the interview, including the CES-D scale. The samples probably have some underrepresentation of males and the poorly educated. However, they include respondents with a wide range of demographic characteristics, in numbers adequate for analyses of relationships among variables.

Second Questionnaire Survey (Q2 Survey)
The CES-D scale was also included in a slightly revised (mainly shortened) version of the questionnaire (Q2) used in Washington County only, from March 1973 through July 1974 (for three months Q1 and Q2 were used alternately). Sam-

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