Refugee Girls’ Secondary Education in Ethiopia: Examining the Vulnerabilities of Refugees and Host Communities in Low-Resource Displacement Settings

Author(s): Shelby Carvalho

Source: Journal on Education in Emergencies, Vol. 8, No. 2 (June 2022), pp. 139-169

Published by: Inter-agency Network for Education in Emergencies

Stable URL: http://hdl.handle.net/2451/63856

DOI: https://doi.org/10.33682/cy3t-dhqt

REFERENCES:

This is an open-source publication. Distribution is free of charge. All credit must be given to authors as follows:


The Journal on Education in Emergencies (JEiE) publishes groundbreaking and outstanding scholarly and practitioner work on education in emergencies (EiE), defined broadly as quality learning opportunities for all ages in situations of crisis, including early childhood development, primary, secondary, non-formal, technical, vocation, higher and adult education.

Copyright © 2022, Inter-agency Network for Education in Emergencies.

The Journal on Education in Emergencies, published by the Inter-agency Network for Education in Emergencies (INEE), is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License, except where otherwise noted.
REFUGEE GIRLS’ SECONDARY EDUCATION IN ETHIOPIA: EXAMINING THE VULNERABILITIES OF REFUGEES AND HOST COMMUNITIES IN LOW-RESOURCE DISPLACEMENT SETTINGS

Shelby Carvalho

ABSTRACT

Refugee girls are one of the most marginalized groups in the world when it comes to school participation, and they are half as likely to enroll in secondary school as their male peers. Gender disparities can be made worse by conflict and displacement, and they often increase as children get older. As many low- and middle-income host countries move toward more inclusive models of refugee education, it’s critical to identify barriers that may differentially limit the inclusion of refugee girls. I use two unique household surveys, conducted in Ethiopia, to examine the household and community factors that shape participation in secondary school. My findings suggest that the magnitude and sources of disadvantage vary across groups. Domestic responsibilities and concerns about safety in the community are more likely to limit secondary school participation for refugee girls than for refugee boys and host community girls. Other factors, including parental education and exposure to gender-based violence, are less likely to differ between refugee and host community girls. These findings have implications for education and social protection policies that target girls’ education and wellbeing in both refugee and host communities.

INTRODUCTION

Barriers to girls’ education in low- and middle-income countries are well documented throughout the academic and policy literatures, but substantial gaps
remain in our understanding of the ways these barriers vary and may multiply in humanitarian contexts. The vulnerabilities associated with fragility can affect men and women differently, which often results in heightened gender inequality and greater risks to women and girls (e.g., Kirk 2007, 2010). Gender inequities within conflict-affected groups can be further exacerbated by displacement, thus making refugee girls one of the most marginalized groups in the world when it comes to school participation (Borde et al. 2017).

Low- and middle-income countries host 85 percent of the world’s more than 80 million refugees. The UN High Commissioner for Refugees (UNHCR 2020) reports that sub-Saharan Africa hosts more than one-quarter of the world’s refugee population, which totals more than 18 million people. Many of the top hosting countries in the region have signed global agreements that obligate them to offer education opportunities to refugees, but despite these formal agreements, many remain out of school.\(^1\) UNHCR finds that refugee girls in sub-Saharan Africa are less likely to be in school than refugee boys across all levels of education. Moreover, these gender disparities increase as children get older. In Ethiopia and Kenya, refugee girls are 60 percent less likely than refugee boys to enroll in secondary school (UNHCR 2018).

Ethiopia is the second most populous country on the continent and hosts one of the largest refugee populations in Africa, thus it provides an important context in which to examine these barriers for two main reasons. First, gender gaps in secondary school participation also exist in host communities, which suggests that barriers to girls’ education are relevant for both refugee and host communities in Ethiopia. Second, Ethiopia hosts refugees from Eritrea, Somalia, Sudan, and South Sudan, thus the refugee population varies along several lines, including country of origin, length of displacement, and ethnic background, as well as in policy implementation, community safety, and quality of education across host regions. This variation allows for a unique within-country comparison of the ways that the sources of marginalization and vulnerabilities these refugees face differ across contexts and interact with education.

In preparing this paper, I asked several questions related to secondary school participation for refugee girls: Are gender gaps in education greater for refugee girls than host community girls? What factors shape the differences in school participation among girls from these two groups? What drives gender gaps in secondary education among refugees? How do these gaps vary across refugee

---

\(^1\) These agreements include the 1951 Refugee Convention, the 2016 New York Declaration for Refugees and Migrants, and the 2017 regional Djibouti Declaration.
groups and camp locations? To examine these questions, I used two unique household surveys that covered both camp-based refugees in Ethiopia and the host communities immediately surrounding them.

Across the sample, I found that domestic responsibilities and concerns about safety in the community disproportionately limited the secondary school participation of refugee girls as compared to that of refugee boys and host community children. Other factors that may affect refugee girls’ education, including parental education, parents’ perceptions of the value of schooling, and exposure to gender-based violence (GBV), did not disproportionately affect refugee girls. This suggests that refugee girls and host community girls in low-resource settings face many of the same challenges in accessing secondary school, but that refugee girls face additional compounding barriers that limit their secondary school participation.

Few quantitative studies to date have assessed the barriers to refugee girls’ education. Several studies in health and child protection have quantitatively examined GBV, risks, and empowerment for refugee girls (e.g., Stark et al. 2017), but most of our knowledge about education related specifically to refugee girls comes from qualitative studies and international policy reports. I build on the important qualitative work done in these spaces to develop a conceptual framework for a quantitative analysis of the barriers to refugee girls’ education in Ethiopia. My findings are relevant to similar low- and middle-income host countries, including Kenya, Sudan, and Uganda, each of which hosts between 500,000 and 1.5 million refugees and faces similar gender disparities in secondary school participation in their host communities.

CONCEPTUALIZING BARRIERS TO REFUGEE GIRLS’ EDUCATION

Persistent gender inequities and barriers to girls’ education occur at multiple levels, including in households, communities, and schools, and in national laws. Humanitarian situations, including displacement, can further strain existing gender inequities, heighten safety concerns, and intensify the need for family members to contribute to household activities when experiencing a loss of income (Stark et al. 2017). Barriers that exist at multiple levels can compound each other and, as a result, girls may encounter more profound obstacles when trying to pursue an education. For example, girls from very poor households who live in communities experiencing conflict may face steeper obstacles to education access than girls facing only one of these challenges.
Household Factors

Domestic Responsibilities, Opportunity Costs, Norms, and Plans for the Future

Domestic responsibilities are a well-documented barrier to education for adolescent girls in poor households. In households facing extreme budget constraints, the opportunity costs of going to school instead of contributing to housework can be elevated (García and Saavedra 2017). These challenges can be exacerbated during times of crisis (Ferreira and Schady 2009) and can have a disproportionate impact on girls (Björkman-Nyqvist 2013). In a study of Sudanese refugees who resettled in Australia, Hatoss and Huijser (2010) found that, even though families equally valued boys’ and girls’ education, adolescent girls had greater responsibility for household chores than their male counterparts, even after they had been resettled in a high-income country.

These opportunity costs can be more difficult to overcome in places where the perceived benefits of going to school do not outweigh the immediate needs of the household, whether due to the direct costs of schooling, a lack of clear economic opportunities following school completion, or the norms that put less value on girls’ education and work outside the household (e.g., de Janvry et al. 2006). Read-Hamilton and Marsh (2016) found that such norms can become more pronounced and even prohibitive in humanitarian and displacement contexts. Furthermore, when the purpose of education and the future opportunities it can bring are “unknowable” (Dryden-Peterson 2017), it may become more challenging for the poorest households to rationalize investing in education over more immediate survival needs. In a study of learning outcomes among refugees in Kakuma refugee camp in Kenya, Piper et al. (2020, 93) found that refugees who believe they will return home within the next three years have higher average literacy scores than those who believe they will still be living in the camp for a much longer time. This might suggest that having a clearer picture of the future could shape refugees’ school participation and performance.

Gender-Based Violence and Early Marriage

Globally, adolescent girls face the greatest risk of violence and exploitation of any age group (Glass et al. 2018). The risks of GBV and early or forced marriage for adolescent girls are heightened in humanitarian settings and can negatively affect their education (Stark et al. 2017; Noble et al. 2019), including by the added risk of sexual assault, harassment, and exploitation at school (Burde et al. 2017). Girls in
lower social positions often face disproportionate risks of GBV (e.g., Davies 2004; Stark and Wessells 2012). Refugees in many contexts occupy some of the lowest positions in society, and adolescent refugee girls thus often face a greater threat of GBV and exploitation than other girls (Glass et al. 2018). Experiencing increased GBV in conflict settings also can have a lasting effect on the physical and mental wellbeing of women and girls (Russell et al. 2016). Further illustrating this, Stark et al. (2017) found that exposure to sexual violence prior to settling in Ethiopia had a negative effect on refugee girls’ sense of wellbeing and safety. Evidence from qualitative studies also suggests that frequent exposure to the threat of physical abuse can negatively affect refugee girls’ participation in school, and can increase their feelings of vulnerability and the likelihood of early marriage (Bartels et al. 2018; Yaman 2020).

Parental Education and Refugee Country of Origin

Parental education is linked to education outcomes for boys and girls; it has been found to have a greater effect on girls than on boys in some contexts (e.g., Card, Domnisoru, and Taylor 2018; Iyer et al. 2020). In a recent study of first-generation learners in Ethiopia—defined as those whose parents have never attended school—Iyer et al. (2020) found that first-generation learner status adds an additional layer of disadvantage, which serves to widen gaps in both learning and school participation over time. In displacement settings, refugee parents’ or caretakers’ familiarity with the local school system and language may also play a role in shaping children’s participation. In Kenya, Piper et al. (2020, 94) found that learning outcomes among refugees vary by country of origin. They suggest that this may be due in part to differences in refugee groups’ length of stay in the host community, which can result in corresponding differences in parents’ familiarity with the language of instruction in schools. Thus, it is possible that first-generation learner status may have more pronounced effects for refugee students whose parents are unfamiliar or uncomfortable with the local systems and languages, or who are facing additional uncertainty about their future plans, than for those with more experience in the country or with more certainty about the future.

Community Factors

Distance to School and Community Safety

The distance between home and school can affect school participation for both boys and girls and can become more important as girls get older (e.g., Muralidharan and Prakash 2017). Travelling a long distance to school can increase the cost of
schooling, due to the expense of transportation and the opportunity costs that stem from long commute times. Concerns about the safety of the school route and the area around the school can be heightened in humanitarian contexts, and parents thus may be less willing to let girls travel to school than boys (Burde and Linden 2013; UNICEF 2018). In a qualitative study of refugee women and girls in Dadaab refugee camp in Kenya, Dahya and Dryden-Peterson (2017, 297) found that women often experience harassment while walking alone, which can make going to school more difficult for them. In Ethiopia, secondary schools are located in the host communities surrounding the refugee camps, and the distance from home to school could be a particularly steep barrier for refugee girls at the secondary level.

**Host and Refugee Kinship Ties**

In low- and middle-income host countries, dominant social and political cleavages often fall along ethnic lines (e.g., Posner 2005; Lieberman and Singh 2012). Moreover, postcolonial borders can act as dividing lines across ethnic and kin groups, which means that refugees from neighboring countries may share ethnic, linguistic, or other background characteristics with host communities. When refugees share an ethnic background with the host community, the host community may be more welcoming and refugees’ school participation may be more likely to mirror that of the host community. In contrast, host communities may be more exclusive toward refugees from other ethnic groups, in particular when they face high levels of competition for resources or political representation. In a historical analysis, Rüegger (2019) found that, when a co-ethnic refugee influx enlarges the size and influence of the host community kin group, it can fuel clashes with other groups in the area. In such cases, refugees might be more likely to attend school in the host community if they share characteristics, or when their presence does not worsen existing tensions between host groups. As I discuss in more detail below, this is a component of the political economy in Ethiopia that may have an impact on refugees’ participation in education, particularly that of girls, as these dynamics may heighten their safety concerns.

**School-Based Factors**

School-based factors, including having safe school grounds and an infrastructure that is appropriate for girls, can become more important in humanitarian contexts, and for girls as they get older. Classroom factors, including having female teachers (Winthrop and Kirk 2005) and a learning environment that is free from gender bias, can also play an important role in shaping girls’ self-perceptions, aspirations,
and feelings of belonging at school.\textsuperscript{2} When faced with high opportunity costs, the quality of the schools may also help parents determine whether or not they should send their children to school.

\section*{REFUGEE EDUCATION IN ETHIOPIA}

Over the past three decades, the Government of Ethiopia has maintained a largely open border policy for refugees, with strict encampment rules. Like other countries in the region that host a large number of refugees, Ethiopia is a signatory to multiple global and regional agreements related to refugees, beginning with the 1951 UN Convention Relating to the Status of Refugees and its 1967 Protocol (Ethiopia Ministry of Education 2020). Ethiopia endorsed the New York Declaration for Refugees and Migrants in 2016 and is a signatory to the 2017 regional Djibouti Declaration on Refugee Education. Reflecting these global commitments, the Government of Ethiopia also developed a Comprehensive Refugee Response Framework in 2017; in 2019, it announced major shifts in the law and in policy, which paved the way for broader integration of refugees, beginning with the education sector. However, concrete integration efforts have so far been slow, and they are likely to stall further, due to the outbreak of civil war Ethiopia in late 2020.

In addition to the 2019 integration law, policy shifts in the education space include identifying refugees as a priority group in Ethiopia’s flagship education reform, the General Education Quality Improvement Programme for Equity. While vague plans are in place for greater physical integration, including sharing schools in the future, refugees at present typically attend the primary schools located inside the camps. The relatively small number of refugees who go on to secondary school may attend government schools in their host communities, which means that, in most cases, attending secondary school requires refugees to leave the camps.

Refugee camps are primarily located in remote parts of the country, where access to public services often is limited, even for the local population. Education quality and outcomes thus vary across the regions hosting refugees. Primary education enrollment among refugees is typically lower than regional averages in the host areas. Secondary school participation among refugees is low, ranging from zero for both boys and girls in Samara (the Afar region) because there are no secondary schools near the refugee camps, to 47 percent for boys and 29 percent for girls.

\textsuperscript{2} The literature on this subject is outlined in Carlana (2019).
in Jijiga (the Somali region). The map in Figure 1 shows where Ethiopia’s refugee camps are located along the border regions.

**Figure 1: Map of Refugee Locations in Ethiopia**

The refugees in the survey sample live in camps located in remote areas that are managed by the Agency for Refugee and Returnee Affairs and UNHCR. Refugee households are typically poor and have access to few financial resources.
Approximately 70 percent of the refugee households in Ethiopia are headed by females (Nigusie and Carver 2019) and, according to the World Bank’s (2017) Skills Profile Survey (SPS), nearly 30 percent of those in the sample have been separated from a family member who would normally contribute to household earnings. Refugees living in camps do not have the right to work in Ethiopia, except for manufacturing jobs in the industrial parks funded by the World Bank. Only about 23 percent of the refugee survey sample reported having worked within the previous seven days, including informally or for incentive pay within the camp. About 6 percent of the refugee sample reported having received remittances from abroad within the past year; this varied by country of origin, with less than 1 percent of those from Sudan and more than 35 percent of those from Eritrea having received remittances (World Bank 2017). With few work opportunities, separation of household members, and limited resources coming in from elsewhere, refugees face severe poverty, which can increase domestic responsibilities, heighten the opportunity costs of sending children to school, and increase the risk of early marriage for adolescent girls. Qualitative findings from a small World Bank study in Ethiopia suggest that domestic responsibilities, early marriage, and pregnancy are key barriers to refugee girls’ participation in secondary school (World Bank 2019).

Not having the right to work in formal jobs or a pathway to citizenship in the host country may also create greater uncertainty about the future, which can affect decisions about education, particularly when household resources are limited. Figure 2 shows that plans to stay in Ethiopia over the long term vary across refugee groups, with refugees from South Sudan being most likely to stay under current policies and those from Eritrea being least likely. However, refugees across all groups were more likely to report wanting to stay in Ethiopia over the long term if they were granted the right to work. Qualitative findings also suggest that a lack of certainty about their future prospects may contribute to low participation in school among refugees in Ethiopia (World Bank 2019). Thus, it is possible that improving labor market opportunities could also improve education outcomes for refugees.
Refugee adults have completed a similar number of years of education as Ethiopian nationals living in the host communities surrounding the camps (see Table 1). Refugees also have a prevalence of first-generation learners that is comparable to that of their host communities. In the SPS sample, 40 percent of adults in host communities and 35 percent of adults over the age of 18 reported that they had never been to school (World Bank 2017). Of the refugee adults who had been to school, about 28 percent had attended school in Ethiopia.

Table 1: Refugee and Host Community Parents Have Similar Years of Schooling

<table>
<thead>
<tr>
<th>Region</th>
<th>Women</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Refugee</td>
<td>Host</td>
<td>Difference</td>
<td>Refugee</td>
<td>Host</td>
<td>Difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Afar</td>
<td>5</td>
<td>9</td>
<td>-2</td>
<td>7</td>
<td>8</td>
<td>-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benishangul-Gumuz</td>
<td>6</td>
<td>7</td>
<td>-2</td>
<td>7</td>
<td>8</td>
<td>-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gambella</td>
<td>7</td>
<td>10</td>
<td>-3</td>
<td>9</td>
<td>10</td>
<td>-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somali</td>
<td>4</td>
<td>6</td>
<td>-2</td>
<td>7</td>
<td>10</td>
<td>-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tigray</td>
<td>7</td>
<td>8</td>
<td>-1</td>
<td>9</td>
<td>8</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>7</td>
<td>-1</td>
<td>9</td>
<td>8</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: Author’s elaboration of Skills Profile Survey data (World Bank 2017)
Host Communities

Ethiopia’s federal system comprises nine semi-autonomous regions organized largely along ethnic lines. In some regions, refugees share an ethnic background and language with the surrounding host community, such as Somalis hosted in the Somali region. In other regions, refugees have few ethnic or linguistic links with the host community, such as the Sudanese in Benishangul-Gumuz. The quality of education and public services available for the national populations varies considerably across regions.

The presence of refugees in some regions of Ethiopia is far more contentious than it is at the national level. In the Gambella region, for example, sporadic violence between refugees and people in the host communities is not uncommon, and schools are sometimes targeted (UNICEF 2018). Qualitative evidence from a UNICEF study found that this violence had prevented refugees from going to school in the region during times of heightened conflict (UNICEF 2018, 117). This violence is connected in part to ethnic tensions in the Gambella region, where many refugees are Nuer and have a common background with the Nuer ethnic minority group in that region (Nigusie and Carver 2019). Given the large number of Nuer refugees, the ethnic balance could shift if refugees were to gain citizenship in Ethiopia, which would change the current political representation from the region.

Apart from the presence of refugees, several host regions, including Benishangul-Gumuz, Gambella, and Somali, experience periodic violence and are considered fragile. Since late-2020, Tigray has become the epicenter of a growing conflict with the national government, and media reports suggest that refugee camps, which host primarily Eritrean refugees, have been the targets of attacks (BBC 2020). Heightened tensions between refugees and the host communities, or within the host communities surrounding refugee camps, may have a disproportionate impact on the adolescent girls who attend secondary schools outside the camps. If safety continues to be a concern in this region, it may discourage young refugees from finishing school or from pursuing work and other forms of community integration.

School Level

A lack of female teachers and gender bias in the classroom may contribute to the gender gaps in education among refugees in Ethiopia. A recent study of teachers in regions hosting refugees in Ethiopia found the following ratios of female-to-male refugee teachers at the primary level: Gambella 1:26, Benishangul-Gumuz 1:13, and Tigray 1:16 (Bengtsson et al. 2020). This severe gender imbalance may
affect girls’ persistence in school and their ability to learn. According to data from the Ethiopian Ministry of Education, the teacher gender gap continues at the secondary level. Regions hosting refugees had the following aggregate female-to-male teacher ratios at the secondary level: Afar 1:8, Benishangul-Gumuz 1:6, Gambella 1:12, Somali 1:10, and Tigray 1:4. These figures represent aggregate regional numbers and may be more severe in the remote areas where camps are located (Ethiopia Ministry of Education 2020).

Qualitative evidence from Ethiopia in which girls reported concerns about lagging behind boys in school also suggests that gender bias may be present in the classroom and that refugee girls have internalized gender-based learning discrepancies (World Bank 2019). Future research could explore whether and how feelings of inadequacy and bias experienced in the classroom due to being female may be compounded by refugee status at the secondary level, and thus could be an additional source of disadvantage for refugee girls.

**METHODS**

I drew from the literature described above to inform a quantitative analysis of whether and how gaps in secondary school enrollment vary between refugee girls and host community girls, and between refugee girls and boys. My approach included a combination of descriptive statistical analysis and ordinary least squares regression, with location fixed effects.

**DATA**

The data for this study came from two large-scale household surveys conducted by UNICEF (N=17,095) and the World Bank (N=27,370). They were implemented in refugee camps and the immediately surrounding host communities in Benishangul-Gumuz, Gambella, Somali, and Tigray. My analysis is limited to households in these areas that had school-age children.

**Building Self-Reliance Program Survey**

The Building Self-Reliance Program (BSRP) survey was conducted in 2018 by UNICEF as part of the Building Self-Reliance for Refugees and Host Communities by Improved Sustainable Basic Social Service Delivery Program. Data collected over a six-week period in early 2018 covered 3,000 households from one refugee camp and the surrounding host community in each region, including Afar,
Benishangul-Gumuz, Gambella, Somali, and Tigray. UNICEF defines host communities as “the population living in woredas [districts] where the targeted refugee camps are located” (Kimetrica 2018, 19). Host communities with at least one border within a ten-kilometer radius of the refugee camp were included. The camps were randomly selected from a list of eligible sites; they were deemed eligible if they were a refugee camp rather than a location or point of entry and were slated to receive UNICEF assistance related to water systems. The rationale for including eligibility for water system assistance was to allow UNICEF to track indicators related to water, sanitation, and hygiene through the survey. Households were randomly selected from within the chosen refugee camps and host communities; recently arrived refugees were excluded. The household survey reached a total of 3,000 households from 150 urban host communities, 150 rural host communities, and 300 refugee households in each region. The questionnaires were intended for the primary caregiver in the household. The BSRP survey focused on opinions about and barriers to education, as well as on health, services, and safety conditions. It included sections on GBV and child protection.

Skills Profile Survey

The SPS was a household survey conducted in 2017 by the World Bank. Like the BSRP survey, the SPS was implemented in all five regions hosting refugees, and it targeted both refugee camps and the surrounding host communities. The SPS classified all communities within a five-kilometer radius of a refugee camp as host communities. The sample design was a multistage stratified random sample. It began with regions as the primary strata, within which the camps were divided into enumeration areas proportional to their size. Enumeration areas and households within the enumeration areas were then randomly selected from each stratum, which resulted in a total of 5,317 households and 27,370 individuals. The sampling frame initially intended to reach 900 refugee households and 500 host community households in each region, but the refugee sample fell short in Gambella (N=439), with a majority South Sudanese refugee population, due to security concerns. To compensate for this, Benishangul-Gumuz was oversampled (N=1,423), because 25 percent of the refugee population in that region is South Sudanese. The security concerns in the Gambella region at the time the survey was conducted also prevented the surveyors from reaching host community households. In Afar, all respondents were classified as host community members; in the other three regions, both refugee and host community respondents were represented. The SPS survey focused on skills, employment-related topics, migration history, and assets.3

---

3 For more information about the SPS survey, including data collection, see World Bank (2018).
Methodology and Model

Descriptive Analysis

I used the BSRP sample to examine whether perceptions of education quality, satisfaction with the school, and opinions about the value of girls’ education varied between refugee parents and host community parents. This provided insight into whether their perceptions of the quality of education varied and thus could affect their opportunity cost calculations differently (see Table 2). To determine whether differential exposure to GBV is likely to have been a contributing factor to divergent outcomes in secondary school participation (see Table 3), I also examined whether exposure to GBV varied between refugee and host communities. I used weighted t-tests for this portion of the analysis in order to assess whether the differences between the two groups are statistically significant.

Ordinary Least Squares Regression with Location Fixed Effects

To analyze barriers to girls’ education, I estimated four different versions of the following weighted ordinary least squares regression with data from the SPS sample:

$$y_{ijk} = \beta'X_{ijk} + \delta W_j + \gamma Z_k + \epsilon_{ijk},$$

where $i$ represents individuals, $j$ represents households, and $k$ identifies the refugee camp location. The outcome $y_{ijk}$ represents the probability that individual $i$ is enrolled in school, $X_{ijk}$ is the vector of covariates, $W_j$ is the vector of household fixed effects, $Z_k$ is the vector of location fixed effects, and $\epsilon_{ijk}$ is the error term. The main outcome variables were school enrollment at the primary and secondary levels, in which respondents indicated whether their children were currently enrolled in school. This resulted in a binary 1-0 outcome variable.\(^4\)

I included covariates at the household and community levels in each version of the model. At the household level, I controlled for domestic responsibilities, first-generation learner status, perceived community safety, plans to stay in Ethiopia, and the number of school-age children in the household. In most versions of the model, I included interaction terms to test whether the covariates fluctuated with refugee status and gender. At the community level, I included covariates that captured perceived safety.

\(^4\) I prefer ordinary least squares for ease of interpretation in the main body, but I also tested logistic regression specifications. Directions and significance of results are consistent between the two model specifications.
Domestic responsibilities were measured by a binary variable that indicated whether a girl child was responsible for gathering water for the household, and by the time it took to get to a water source, measured in five-minute increments. While girls are responsible for domestic tasks other than water collection, this task has been identified as one that disproportionately limits girls’ school attendance (Nauges and Strand 2017; Demie, Bekele, and Seyoum 2016). I measured first-generation learner status by whether either parent had ever been to school (Iyer et al. 2020); given the prevalence of parental separation in displacement settings, I expanded this to include any adult living in the household. A binary variable captured whether or not respondents planned to settle in Ethiopia over the long term. Perceived community safety was measured by household responses to the question, “How safe do you feel walking during the day?” Responses were coded as “safe” if the respondent indicated that they felt safe or very safe on a five-point scale, and as “not safe” if they indicated that they felt neutral, somewhat unsafe, or very unsafe.

In all versions of the model, I included location fixed effects. This reflected refugee camps in the refugee-specific models and the matched camp-host community pair for regressions, including the full sample. Including fixed effects allowed me to control for common community factors, including community location, safety, and access to public services, that may be constant across individuals within a location.

**FINDINGS**

**Comparing Girls from Refugee Camps and Host Communities**

**Differences in School Participation**

Refugee girls are substantially less likely to enroll in secondary school than host community girls. Table 2 reflects ordinary least squares regression results of primary and secondary enrollment for both refugee and host communities. Refugee girls in the sample were about 23 percentage points less likely to be enrolled in school than nonrefugee girls (column 3). This confirms the assertion that refugee girls, particularly those in camp settings, are more disadvantaged in their access to secondary school than other groups. These gaps do not exist at the primary level, which suggests that additional barriers may emerge as refugee girls transition to secondary school. This is consistent with Ethiopian Ministry of Education (2020) data at the regional level.
Having at least one parent who attended school was a positive predictor of enrollment across both samples. The number of school-age children living in the household was also positively correlated with the likelihood of being enrolled in secondary school. This could be because household chores are shared in households with more children, or it could be a sibling effect, whereby having one child in school makes it more likely that others will stay in school.

Table 2: Gender and Refugee-Host Education Gaps Emerge at the Secondary Level and Disadvantage Refugee Girls Most

<table>
<thead>
<tr>
<th></th>
<th>(1) Primary (all)</th>
<th>(2) Primary (refugee only)</th>
<th>(3) Secondary (all)</th>
<th>(4) Secondary (refugee only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refugee</td>
<td>0.05</td>
<td>..</td>
<td>-.14***</td>
<td>..</td>
</tr>
<tr>
<td>Female</td>
<td>-0.04</td>
<td>..</td>
<td>-0.04</td>
<td>..</td>
</tr>
<tr>
<td>Refugee female</td>
<td>-0.02</td>
<td>-.05**</td>
<td>.15**</td>
<td>-.07*</td>
</tr>
<tr>
<td>In school prior to displacement</td>
<td>..</td>
<td>.12***</td>
<td>..</td>
<td>0.04</td>
</tr>
<tr>
<td>Adult ever in school</td>
<td>.08***</td>
<td>.08***</td>
<td>.09</td>
<td>.11**</td>
</tr>
<tr>
<td>Adult was in school in Ethiopia</td>
<td>-0.02</td>
<td>-0.03</td>
<td>-0.04</td>
<td>-0.06</td>
</tr>
<tr>
<td>Number of school-age children in household</td>
<td>-0.05</td>
<td>-0.05</td>
<td>-0.08</td>
<td>-0.09</td>
</tr>
<tr>
<td>Includes linked location fixed effects</td>
<td>0</td>
<td>0</td>
<td>.04***</td>
<td>.04***</td>
</tr>
<tr>
<td>R2</td>
<td>0.05</td>
<td>0.05</td>
<td>0.14</td>
<td>0.12</td>
</tr>
<tr>
<td>N</td>
<td>6,279</td>
<td>4,628</td>
<td>2,591</td>
<td>1,818</td>
</tr>
</tbody>
</table>

*** p<0.01, ** p<0.05, * p<0.1
Perceptions about Education

As I stated above, perceptions about the quality and value of education may factor into household calculations of the opportunity costs of going to school. If parents believe that their children are attending quality schools that will help them develop useful skills, they may be more likely to continue to send them to school. To assess whether divergent perceptions of school quality may have a differential impact on decisions about school participation, I examined refugee parents’ and host community parents’ perceptions of the quality and value of schooling (see Table 3).

The relatively high level of satisfaction with the schools among both refugee and host community parents suggests that concerns about the quality of schooling are unlikely to be the primary drivers of differences in participation. For example, respondents in the Tigray region reported the lowest level of satisfaction, yet education outcomes in Tigray are higher than in other regions (Ethiopia Ministry of Education 2020). This lower level of satisfaction with the schools may be due to the fact that the refugee camps and surrounding host communities in the Tigray region are in the most remote areas, where the services available, including schools, are of poor quality. It also could be because the parents in this region have higher expectations for the quality of service than the schools provide. On average, refugee and host community parents in Tigray have completed slightly more years of education than those in Somali or Benishangul-Gumuz, thus they may have higher expectations for the quality of schooling.

Attitudes about the perceived value of girls’ education did not appear to be correlated with gaps in school participation between refugee and host communities. Parents from both communities were asked how important they feel girls’ education is on a scale of 1-5, and a substantial majority (99%) reported that it is important or very important (see Table 3). While there is a risk that this positive response was shaped in part by social desirability bias, it seems unlikely that this alone would produce a near 100 percent favorable response rate, nor would such bias vary between refugees and hosts. If parents are generally satisfied with the quality of the schools and believe that education is important, it’s likely that other factors are driving the refugee parents’ decisions about educating girls.
Table 3: Refugee and Host Community Parents Are Generally Satisfied with the Quality of Schooling and Think Girls’ Education is Important

<table>
<thead>
<tr>
<th>Region</th>
<th>(1) Quality education (% good or very good)</th>
<th>(2) Quality of teacher (% good or very good)</th>
<th>(3) Satisfied with school</th>
<th>(4) Girls’ education is important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Refugee Host Difference</td>
<td>Refugee Host Difference</td>
<td>Refugee Host Difference</td>
<td>Refugee Host Difference</td>
</tr>
<tr>
<td>Afar</td>
<td>91 100 -9</td>
<td>91 100 -9</td>
<td>.. 77 ..</td>
<td>100 100 0</td>
</tr>
<tr>
<td>Benishangul-Gumuz</td>
<td>92 85 +7</td>
<td>93 89 +4</td>
<td>85 80 -5</td>
<td>99 100</td>
</tr>
<tr>
<td>Gambella</td>
<td>89 91 -2</td>
<td>88 90 -2</td>
<td>84 .. ..</td>
<td>98 100 -2</td>
</tr>
<tr>
<td>Somali</td>
<td>87 81 +6</td>
<td>93 89 +4</td>
<td>96 90 +6</td>
<td>100 96 +4</td>
</tr>
<tr>
<td>Tigray</td>
<td>74 81 -7</td>
<td>74 86 -12</td>
<td>72 86 -14</td>
<td>100 100 0</td>
</tr>
<tr>
<td>N</td>
<td>2,096 1,739</td>
<td>2,096 1,739</td>
<td>19,201 7,550</td>
<td>9,038 8,049</td>
</tr>
</tbody>
</table>

Note: Data on the perceptions of the quality of education, quality of the teacher, and the importance of girls’ education come from the BSRP survey (UNICEF 2018). Data on the satisfaction with schools comes from the SPS survey (World Bank 2017).
Perceptions of Refugee-Host Community Relationships and Sharing Education Services

Both surveys asked questions about household perceptions of the relationships between refugee and host communities. Host community attitudes toward refugees were worst in Benishangul-Gumuz (columns 1 and 2), where refugees are less likely than those in other regions to have the same ethnic background or language as their hosts, which may contribute to negative feelings. Conversely, host respondents in Somali have more positive perceptions of the refugees in their region, who are likely to share the hosts’ ethnic identity and language.

From the perspective of refugees, relationships with the host communities were worst in Gambella and best in Somali (column 4). Gambella had the largest gap in secondary school participation between refugee and host communities, a difference of about 49 percentage points. It also had the largest host community gender gap in secondary school participation, with a 20-percentage-point difference between host community boys and girls (Ethiopia Ministry of Education 2020). As noted above, Gambella also has more frequent instances of violence in the areas surrounding the refugee camps, which may contribute to refugees’ negative perceptions of their relationships with their host communities and could also limit school participation for both refugee girls and host community girls. Refugees in Gambella share an ethnic background with the minority Nuer group. Because the presence of these refugees threatens the status quo of the social and political demographics in the region as related to ethnicity (e.g., Rüegger 2019), it could fuel tensions between refugees and non-Nuer host community members, and between Ethiopian Nuer and other groups. While these findings related to ethnicity are speculative, they do suggest that the specific social, cultural, and political dynamics between refugees and their host communities are important to consider when designing education policies and interventions, particularly when targeting at-risk populations, including adolescent girls. This is a critical area for further research.
Table 4: Refugee and Host Community Relationships Vary across Locations and Ethnic Groups

<table>
<thead>
<tr>
<th>Refugee and host community relationships (percentage who agree)</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hosts want refugees to leave</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refugees should be able to share education services with hosts</td>
<td>11</td>
<td>62</td>
<td>27</td>
<td>87</td>
</tr>
<tr>
<td>Refugees have made it more difficult to access health care or education</td>
<td>65</td>
<td>40</td>
<td>39</td>
<td>80</td>
</tr>
<tr>
<td>Refugees perceive good relationships with hosts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Afar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benishangul-Gumuz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gambella</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somali</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tigray</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refugee women reported slightly higher rates of GBV than host community women in all regions except Benishangul-Gumuz and Somali, where the difference in exposure to GBV between the two groups was not statistically significant (see Table 4). While there were small differences in the prevalence of GBV (2-9 percentage points) in Afar, Gambella, and Tigray, the scale of the difference does not seem large enough to suggest that variation in exposure to GBV is a primary factor shaping differences between refugee girls’ and host community girls’ secondary school participation across regions. The high prevalence of GBV among both groups instead suggests that this is a critical challenge for women and girls in general.

Table 5: Women and Girls in Both Refugee and Host Communities Experience High Rates of Gender-Based Violence

<table>
<thead>
<tr>
<th>Experienced any GBV (%)</th>
<th>Experienced physical GBV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Refugee</td>
</tr>
<tr>
<td>Afar</td>
<td>15*</td>
</tr>
<tr>
<td>Benishangul-Gumuz</td>
<td>23</td>
</tr>
<tr>
<td>Gambella</td>
<td>36*</td>
</tr>
<tr>
<td>Somali</td>
<td>57</td>
</tr>
<tr>
<td>Tigray</td>
<td>51*</td>
</tr>
<tr>
<td>N</td>
<td>7,492</td>
</tr>
</tbody>
</table>

Note: * indicates a statistically significant difference in reported GBV between refugee and host community women. “Any GBV” reflects any form of gender-based violence, including verbal and emotional abuse. Physical abuse reflects physical violence.
Gender Gaps in Secondary School Participation among Refugee Adolescents

I next examined gender gaps in secondary school participation between refugee boys and girls. Table 6 shows estimations restricted to refugees to examine gender gaps between refugee boys and girls in secondary school participation. Girls in households in which girl children were responsible for gathering water were about ten percentage points less likely than other girls to be enrolled in school. This could be an indicator of relative poverty and domestic responsibilities, both of which can negatively affect girls’ participation in secondary school. The time it takes to get to a water source was also negatively related to girls’ school participation. With each additional five minutes it takes to reach a water source, girls were about two percentage points less likely to be enrolled in secondary school (see Table 6, column 1). Without data on the time it takes to travel to a secondary school, I was unable to examine whether distance to water or general distance to services, including schools, drives this relationship. Nevertheless, this finding indicates that the time it takes to travel to a necessary resource affects the likelihood that girls will enroll in secondary school.

Feeling safe walking during the day was positively correlated with girls’ school enrollment; however, it was not significant for boys. Girls in households that reported feeling safe walking in the community were six to ten percentage points more likely to be enrolled in secondary school than those in households that reported feeling unsafe. This indicates that safety could be a more prevalent concern for girls than for boys, even in displacement settings. This is consistent with findings from the literature, which indicate that the perceived safety of the school environment disproportionately affects girls’ school participation (Burde and Khan 2016).

Living with at least one adult who had attended school was positively correlated with school participation. Whether the parent had attended school in Ethiopia or elsewhere and whether the household planned to stay in Ethiopia for the long-term were not significant predictors of enrollment. However, questions about intended length of stay were asked of the main survey respondent and may not represent the plans or aspirations of the secondary school-age individuals in their household.
Table 6: Refugee Girls Face More Barriers to Secondary School Access Than Refugee Boys

<table>
<thead>
<tr>
<th></th>
<th>(1) Secondary</th>
<th>(2) Secondary (girls only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>-0.08</td>
<td>..</td>
</tr>
<tr>
<td></td>
<td>-0.06</td>
<td>..</td>
</tr>
<tr>
<td>Girl responsible for water</td>
<td>-.10**</td>
<td>-.09*</td>
</tr>
<tr>
<td></td>
<td>-.04</td>
<td>-0.05</td>
</tr>
<tr>
<td>Time to water</td>
<td>-.02*</td>
<td>-.02*</td>
</tr>
<tr>
<td></td>
<td>-.01</td>
<td>-0.01</td>
</tr>
<tr>
<td>Safe walking (male)</td>
<td>0.07</td>
<td>..</td>
</tr>
<tr>
<td></td>
<td>-.06</td>
<td>..</td>
</tr>
<tr>
<td>Safe walking (female)</td>
<td>.10***</td>
<td>.06**</td>
</tr>
<tr>
<td></td>
<td>-.03</td>
<td>-0.03</td>
</tr>
<tr>
<td>Adult ever in school</td>
<td>.11**</td>
<td>.21**</td>
</tr>
<tr>
<td></td>
<td>-.06</td>
<td>-0.09</td>
</tr>
<tr>
<td>Adult ever in school in Ethiopia</td>
<td>-.04</td>
<td>-0.17</td>
</tr>
<tr>
<td>No. of school age in household</td>
<td>-.09</td>
<td>-0.1</td>
</tr>
<tr>
<td></td>
<td>.05***</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>-.01</td>
<td>-0.02</td>
</tr>
<tr>
<td>Plan to stay in Ethiopia</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>-0.04</td>
<td>-0.04</td>
</tr>
<tr>
<td>Includes camp fixed effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>0.15</td>
<td>0.2</td>
</tr>
<tr>
<td>N</td>
<td>1,769</td>
<td>790</td>
</tr>
</tbody>
</table>

*** p<0.01, ** p<0.05, * p<0.1

LIMITATIONS

I was not able to examine school-level factors in this analysis beyond parental perceptions of school quality. Future studies could examine the role of these factors in shaping gender gaps in school participation more broadly, including the number of female teachers, classroom practices, the curriculum, and the school social environment.
Data on GBV were not directly linked to the data on secondary school participation, as the two data points came from different surveys. This limited my ability to examine the direct relationship between GBV and school enrollment. Data on the distance from home to secondary schools and transportation were also not available, which limited my ability to assess distance and cost as potential barriers to participation at the secondary level. Due to community violence in Gambella at the time the SPS survey was being administered, I was missing SPS household data for the host communities. This limited my ability to examine whether the drivers of secondary school participation vary among girls in refugee camps, and between refugee and host community girls in the corresponding host communities in this region. For comparisons in Gambella, I relied on the BSRP survey and regional data from the ministry of education.

I conducted this analysis prior to COVID-19 and the recent escalation of violence in Tigray. Evidence from past health crises suggests that the figures I report are likely to have worsened during the pandemic, a time in which financial and other barriers, including sexual violence, early marriage, and adolescent pregnancy, could also have increased (e.g., Bandiera et al. 2019). Growing violence in Tigray is likely to have a negative effect on education for both refugees and host communities.

**DISCUSSION**

The findings from this analysis confirm that refugee girls are more disadvantaged in gaining access to secondary school than refugee boys and host community girls, even when comparing refugee students in the camps to their immediately surrounding host communities. Gaps in enrollment for refugee girls emerge as they get older; they do not appear to the same extent in the surrounding host communities, even though refugee girls and host community girls attend the same secondary schools.

In the descriptive analysis, I found little evidence to suggest that differences in secondary school enrollment between refugee girls and host community girls were driven by parental attitudes about the value of girls’ education, or by perceptions of the quality of schooling available. Parents across the sample almost unanimously reported that girls’ education is important. While this finding could be driven in part by social desirability bias in the survey responses, it suggests that, at the very least, no strong outward attitudes are preventing girls from participating in school.
I also examined whether there were systematic differences between the education levels of refugee parents and host parents that could differentially shape their children’s educational trajectories. On average, refugee parents and host community parents completed similar levels of education, and children across the two groups were comparably likely to be first-generation learners. First-generation learner status is a significant predictor of enrollment across the sample, but it does not appear to differentially affect refugee students or host community girls. Differences in parents’ familiarity with the Ethiopian education system, as measured by whether parents attended school in Ethiopia, is also not associated with differences in participation within the sample. This finding is somewhat surprising; based on findings from Piper et al.’s (2020) work in Kenya, we might expect to see differences in school participation among refugees based on parental familiarity with the local education system. However, Piper and his coauthors were focused on learning outcomes, so it is possible that parental familiarity with the local education system may not be a predictor of participation but may still be important in shaping learning outcomes once children are in school. In either case, findings from this study suggest that, while parental education (measured by first-generation learner status) is correlated with schooling overall, it does not appear to affect girls and boys differentially, nor does it result in differences in parents’ perceived value of education for boys and girls.

Exposure to GBV is common among both refugee and host community women, and it may have a negative impact on adolescent girls’ school participation. Though the prevalence of GBV is slightly higher among refugee women than host community women in most regions, the differences are relatively small. It is thus unlikely that differential exposure to GBV alone is a primary factor in the education gaps between refugee girls and host community girls. It is possible, however, that exposure to GBV compounds other barriers that disproportionately affect refugee girls, including severe poverty, which may increase their domestic responsibilities or the need to engage in risky survival strategies, including transactional sex. More work is needed to disentangle whether refugee girls face a greater risk of frequent or severe exposure to GBV, and the extent to which GBV compounds other factors that disproportionately limit refugee girls’ participation in school.

I also explored variations in secondary school enrollment between refugee boys and girls. I found that, while participation among refugees is low overall, girls are more disadvantaged than boys. While parents report that girls’ education is important, household chores still fall disproportionately to girls and women, which could increase the opportunity costs of sending girls to secondary school.
Refugee households have limited access to work opportunities and other income-generating activities, which can increase household poverty and the need for children to take on domestic responsibilities. For example, in the Aysaita refugee camp in the Somali region—which has the largest gaps among all camps in the sample between refugee boys’ and girls’ secondary school participation, and between that of refugee girls and host community girls—girls report that the need to care for the home and for younger siblings is the top reason they are not enrolled in school. Adolescent girls in Aysaita are responsible for gathering water in 17 percent of refugee households, whereas no households in the immediately surrounding host community identify this as the primary responsibility of a girl child. Refugees in Aysaita are also more likely to report wanting to stay in Ethiopia, where their work opportunities are uncertain at best. When the future payoff of education is uncertain and current needs are acute, as they appear to be Aysaita, families face difficult choices that may be more likely to disadvantage the adolescent girls in the household (e.g., de Janvry et al. 2006; Read-Hamilton and Marsh 2016). Further research could explore the role future work opportunities for refugees play in shaping families’ calculations of the current opportunity costs of sending girls to school versus the potential future payoff.

Community safety and the quality of relationships between refugees and their host communities are also correlated with secondary school enrollment. The perceived safety of walking during the day is associated with refugee girls’ school participation but is not a significant predictor of refugee boys’ participation. This is consistent with findings from earlier studies, which suggest that concerns about safety while traveling to and from school can be more severe for girls than for boys in humanitarian settings (Kirk 2011; Shemyakina 2011; Burde and Linden 2013); these concerns can increase as girls get older (Muralidharan and Prakash 2017). Gaps in secondary school participation between refugee girls and host community girls are the largest in Gambella, where refugees are also less likely than in other regions to report good relationships with the surrounding host community. Relatedly, violence around refugee camps is more common in Gambella than in other regions, which could heighten the risks associated with traveling to and from schools in the host communities. As discussed previously, this could be related to differences in ethnic or kinship ties across communities.

By examining differences in school participation at the camp-host level, as opposed to examining regional aggregate statistics, I was able to investigate how barriers vary across groups and explore how compounded disadvantages can create substantial barriers to education for refugee girls. The magnitude and drivers of these gaps vary by location, which suggests that policies and interventions to improve education for
refugee girls should reflect the specific barriers faced in each region. For example, in places where the distance to school and perceptions of community safety are the primary barriers, transportation interventions or other physical safety measures would perhaps be beneficial. In places where domestic chores and poverty are primary factors, targeted social assistance could be beneficial. In some cases, it could make sense to implement interventions that improve secondary education for all girls, including by hiring more female teachers and broadly combatting GBV. Political economy factors, including the social, cultural, and political dynamics between the refugee and host community groups in particular locations, are also important to consider in designing safe and effective policies to improve refugee girls’ access to education. Finally, to ensure that efforts to improve girls’ education address the full scope of the problem, it is critical to assess the ways multiple barriers can compound each other.

ACKNOWLEDGMENTS

This article benefitted from comments and encouragement from Sarah Dryden-Peterson, Emmerich Davies, Lawrence Katz, David Evans, Celia Reddick, Benjamin Reese, Patrick Shaw, anonymous reviewers for the Journal on Education in Emergencies, and members of the Mowana Lab.

REFERENCES


