

# The health of internally displaced children in sub-Saharan Africa: a scoping review

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## ABSTRACT

**Background** Internally displaced children are those who have been forced to flee their homes due to severe unfavourable conditions (war, violence or disasters) but have not crossed international borders. Emerging research shows these children face multiple health challenges. However, we found no review focused solely on the health of such internally displaced children. Thus, this review sought to examine what is known about their health and their health concerns.

**Methods** A scoping review of the literature was conducted. A total of 10 databases were searched in January 2019, yielding 6602 articles after duplicates were eliminated. Two research assistants independently selected articles that met inclusion criteria. A numerical summary and thematic analysis were conducted to facilitate data extraction and data analysis.

**Results** A total of 25 articles met the inclusion criteria, including 16 quantitative, 6 qualitative and 3 mixed methods studies. The findings reveal elevated mental health problems and infectious diseases in this population. Findings on the nutritional status of internally displaced children as a broad group are mixed, with some studies showing poorer nutritional status among the children in this group and others showing poorer nutritional health status among host society children. Internally displaced children also experience challenges with access to health services. Premigration factors (trauma) and postmigration factors (humanitarian assistance on displacement) all contribute to the health of internally displaced children.

**Conclusion** Findings provide insight into the complex array of factors influencing the health of internally displaced children. More intervention studies are required to address the needs of this population.

## INTRODUCTION

Migration is increasing, largely spurred by globalisation, various regional and violent conflicts, and natural disasters. Some migrants are internally displaced people who often experience both physical (eg, malnutrition, infection) and mental health problems (eg, post-traumatic stress disorder, depression).<sup>1</sup> According to the United Nations Guiding Principles on Internal

## Key questions

### What is already known?

- Internal migration is increasing alongside international migration.
- The United Nations has reported that providing support for internally displaced people is more challenging than providing support for refugees.
- Research also shows children who are internally displaced face multiple health challenges.

### What are the new findings?

- Internally displaced children in sub-Saharan Africa are at an increased risk of mental health problems and infectious diseases, as well as increased challenges accessing health services.
- Studies on nutritional status of this group are mixed, with some data showing poorer nutritional status among internally displaced children and others showing poorer status among children from the host population.

### What do the findings imply?

- There is a chain of complex factors impacting the health of internally displaced children, and further intervention studies are needed to understand ways of improving health.

Displacement,<sup>2</sup> internally displaced persons (IDPs) are ‘persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border.’ (p 1). Due to their geographical location (ie, within the same country where they may experience prosecution from their government), supporting IDPs and delivering humanitarian assistance are far more challenging than supporting refugees.<sup>3</sup> Thus, they are among the most vulnerable populations in the world.

Around 41.3 million IDPs were located around the world at the end of 2018.<sup>4</sup> Internal displacement in sub-Saharan Africa was higher than in any other region in 2018,<sup>5</sup> with approximately 7.4 million people displaced due to conflict and violence. While the total number of IDPs worldwide exceeded the total number of refugees in 2018 (25 million), research and resources have largely focused on refugees rather than IDPs.<sup>6</sup>

Children are a particularly vulnerable group of IDPs because they have health needs that are unique to adult health needs. Therefore, they may be left unsupported by general health service provision. Systematic reviews completed on child refugees and internally displaced children identify elevated levels of mental health problems among these populations.<sup>7–9</sup> Numerous factors can disrupt or protect the mental health status of internally displaced children, including exposure to violence, presence of physical and developmental disorders, time since displacement, age, sex, family composition and bereavement, family functioning and parental health, household socioeconomic circumstances, social support and community integration, social context, cultural context, religious context, place of premigration residence and resettlement location.<sup>9</sup> These factors operate at the individual, family, community and system levels.

A systematic review of research into the influence on individual health of relocation following a disaster indicates that mental health was the focus of inquiry in most studies<sup>10</sup>; indeed, of the 25 articles that considered this aspect of displacement, only four focused on physical health outcomes. Similarly, our search for reviews on IDPs suggests most studies have largely focused on mental health.<sup>7–9 11–13</sup> Estimates of rates of mental illness among IDPs and refugees vary, and no meta-synthesis exists on the mental health prevalence rate of IDPs. However, a study on resettled refugees in high-income countries found that these individuals are about 10 times more likely to experience post-traumatic stress than their age-matched general population.<sup>14</sup> Further, age, gender, socioeconomic status, marital status, education, residential status and the number of violent traumatic events are all factors that have been associated with the mental health of conflict-affected populations in middle-income and low-income countries.<sup>12</sup>

The data on IDPs are often combined with data on refugees without consideration of the unique needs and challenges of each population<sup>11–13 15 16</sup>; similarly, the research on internally displaced children is conflated so no clear picture of the differences across these groups is available.<sup>7–9</sup> In many cases, the data on refugees overshadow the data on IDPs. For instance, a meta-synthesis of 19 studies on the needs of refugees and IDPs affected by complex humanitarian crises found that at least one in five refugees or displaced women in these settings experienced sexual violence.<sup>16</sup> However, the authors warn this may be an underestimation given the barriers related to identifying and supporting victims of violence, especially in such contexts. Similar to other systematic reviews on

IDPs, a weakness of this review is the lack of disaggregated data based on age and migration category.

A paucity of synthesised information exists regarding the health status of displaced children in sub-Saharan African countries, a region with the highest number of IDPs. This is significant given that displacement exacerbates the already existing diverse health challenges of these individuals. Given no known synthesis has been performed on this topic, our scoping review responded to the following research question:

- ▶ What is the extent, range and nature of the literature on the health of internally displaced children in sub-Saharan Africa?

## METHODS

A scoping review of literature on the health of internally displaced children in Africa was conducted using Arksey and O'Malley's<sup>17</sup> scoping review methodology. A scoping review is suitable for this work rather than a systemic review given our broad research question focused on examining the extent, range and nature of the literature on the topic. Our scoping review used the following steps<sup>17</sup>: (1) develop research questions, (2) article search, (3) article selection, (4) data extraction and charting and (5) data analysis. Step 1 (develop research questions) was completed as stated above. Steps 2–5 are described below. Ethics approval was not required for this project as we did not engage in primary data collection.

### Article search

A research librarian assisted in completing the search of several electronic databases. Specifically, the following electronic databases were searched on 21 January 2019: Embase, Cochrane Library, Ovid Global Health, MEDLINE, PsycInfo, CINAHL, SocIndex, EBSCO Child Development and Adolescent Studies, ProQuest Sociological Abstracts and Proquest Dissertations and Theses Global. The broad initial search targeted African child migrants in general, with search terms that combined words related to child health, migration and African countries (see [table 1](#), search strategy). A total of 12 720 records were retrieved from the above databases, with 6602 records remaining after duplicates were removed. These articles were then exported into Covidence, an online website that works in collaboration with Cochrane to enhance the selection and completion of systematic reviews. The authors also scanned the reference lists of select articles for additional articles to include. [Figure 1](#) outlines the process for article identification, screening and eligibility.

### Article selection

Two research assistants independently selected and reviewed articles that met the inclusion criteria by screening the abstracts and titles of the 6602 articles. The inclusion criteria were as follows: research studies; focus on children aged 0–18 years; child and parents must have been migrants or displaced persons; and the study must

**Table 1** Search strategy

	Keywords used
Child health	Child health services or adolescent health services or child care or infant care or exp infant, newborn, diseases or infant health or child welfare or infant welfare or child nutrition disorders or infant nutrition disorders or child nutritional physiological phenomena or adolescent nutritional physiological phenomena or adolescent development or adolescent health or adolescent medicine or adolescent psychiatry or psychology, adolescent or child psychiatry or adolescent development or child development or psychology, child or (child or children or childhood or infant* or newborn* or neonat* or baby or babies or preschool* or toddler* or adolescen* or teen* or youth* or pediatric* or paediatric*)
Migration	'emigrants and immigrants' or refugees or (immigra* or refugee* or 'asylum seeker*' or migrant* or displaced or displacement or transients) or (immigrant* or refugee*)
Africa	africa* or cameroon or 'central african republic' or chad or congo* or guinea* or gabon or burundi or djibouti or eritrea* or ethiopia* or kenya* or rwanda* or somalia* or sudan* or tanzania* or uganda* or angola* or botswana* or lesotho* or malawi* or mozambique or 'south africa' or swaziland or zambia* or zimbabwe or benin or 'burkina faso' or 'cape verde' or 'cote d ivoire' or 'ivory coast' or gambia* or ghana* or liberia* or mali or malian or mauritania* or niger or nigeria* or senegal* or 'sierra leone' or togo

have focused on health. At this stage, the study excluded all articles that were systematic reviews, literature reviews, focused on the mother's health, focused on the experiences of parents that did not include information on the health of the child, focused on African Americans where no information was provided on whether or not the subjects were internally displaced and focused on Caribbean migrants. This selection (as well as subsequent analysis) was done between February and May 2019. The authors resolved any conflicts that arose between reviewers when screening titles and abstracts through discussion and consensus, resulting in 1675 articles. Given the volume of articles, additional inclusion criteria were applied to narrow the focus to articles on internally

displaced children in Africa published between January 2000 and January 2019; in doing so, the researchers aimed to cover research conducted on this population over the last ~20 years. Inclusion criteria were further narrowed to exclude articles that did not focus on sub-Saharan Africa, articles on refugees (such as those who migrated from one African country to another), articles that were not focused on first-generation IDP children (those who themselves were displaced rather than their parents) and conference abstracts and proceedings (where the methodology and results were not robust enough for our analysis).

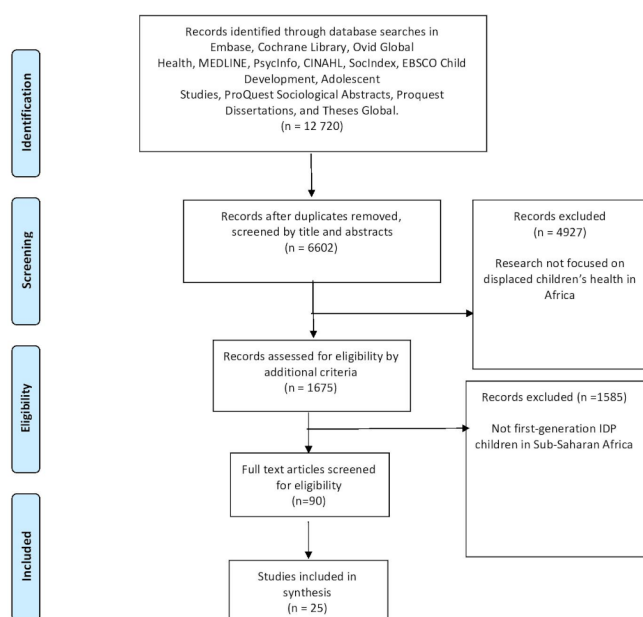
### Data extraction and charting

The following information was extracted: author name, title, year of publication, research questions or objectives, methodology, theoretical framework, method, sampling, sample size, age of child, data source, clinical area of focus, period of data collection, country of origin or region, destination country or region, summary of findings and summary of implications.

This study also completed a quality appraisal using relevant tools from the Critical Appraisal Skills Programme (CASP—<https://casp-uk.net/casp-tools-checklists/>). The review did not exclude any studies based on quality. While Arksey and O'Malley<sup>17</sup> note that scoping reviews do not require a quality appraisal as the quality of results of studies is not the focus, we choose to complete a quality appraisal as a lack thereof limits the uptake of results of scoping reviews into policy and practice.<sup>18</sup> Moreover, yielding accurate conclusions on the nature and extent of the gaps in evidence will be difficult without a quality appraisal.

### Data analysis

Articles were analysed using numerical summary and thematic analysis. Numerical summary was achieved by calculating unique elements of the included articles based on a comprehensive data extraction (eg, total number of participants across studies, male vs female



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit [www.prisma-statement.org](http://www.prisma-statement.org).

**Figure 1** PRISMA flow diagram. IDP, internally displaced person.



participants). The study also conducted a thematic analysis, which required the articles be read multiple times for the authors to familiarise themselves with the data.<sup>19</sup> Aspects of the data were then categorised into unique elements based on the areas of clinical focus. Because the foci of the articles were quite diverse, they could not be divided into subcodes for further analysis. However, data were compared across the coding segments to identify relevant linkages (relationships, interactions and consequences).

Using the 10-point quality scale resulting from the CASP tool, 19 studies achieved a score of 9 to 10 (ie, rated as strong)<sup>20–37</sup> and six scored 7 or 8 (ie, rated as medium).<sup>38–43</sup> Articles had various strengths: some justified their sample size by population, minimised social desirability bias through multiple data collection strategies and reanalysed results using multiple models and strong statistical analysis, including multivariate logistic regression analysis. Weaknesses across several studies included issues with sampling; a few did not have a well-distributed sample due to limitations inherent to recruitment within war-affected and low-income settings. Some studies with scores of 7 to 8 on the CASP scale had low generalisability because the data relied on self-report scales, they lacked standardised data collection tools and they failed to account for the influence of the researcher's presence on participant behaviours.

### Patient and public involvement

Our project is a scoping review of the literature. We analysed data from peer reviewed literature on the health of internally displaced children. Thus, we did not engage or involve patients or the public in this project.

## RESULTS

A total of 25 articles met the inclusion criteria: 16 were quantitative studies,<sup>20–30 38–42</sup> 6 were qualitative studies<sup>31–36</sup> and 3 were mixed method studies.<sup>37 43 44</sup> Limited data on disease prevalence were available across different age groups. The exception was Iyer *et al*,<sup>25</sup> who report an increase of vibriocidal titres in older children, likely due to increased pathogen exposure. Further, studies in general did not consider the influence of time of stay,<sup>21 23</sup> but did report that post-traumatic stress symptoms and depression and anxiety symptoms decreased with time following exposure to conflict and displacement. However, this may be due to successful interventions. Several articles evaluated interventions aimed at improving the health of internally displaced children, mainly focusing on nutrition and mental health. Four themes emerged in the scoping review, as presented below. The majority of studies involved children who had been displaced with their families.

### Infection and disease

Six articles focused on childhood infections or diseases, of which five were quantitative studies<sup>22 24–26 28</sup> and one was mixed methods.<sup>43</sup> Studies considered several specific

individual countries: one each on central Sudan<sup>22</sup> and Nigeria,<sup>24</sup> two on South Sudan<sup>25 28</sup> and two others on northern Uganda.<sup>26 43</sup> Several authors reported a high rate of infectious diseases, including parasitic infections that cause diarrhoea, cholera, schistosomiasis, malaria and sexually transmitted infections among internally displaced children.<sup>24 25 43</sup> For instance, a study conducted in Khartoum state, Sudan,<sup>22</sup> reported a prevalence rate of 32.6% for *Hymenolepis nana*, an intestinal parasitic worm infection; children presenting with diarrhoea were 9.4 times more likely to have an *H. nana* infection than those who did not have diarrhoea. In addition, findings showed gender is a predictive factor in infection, as 42.4% of boys included in the study tested positive for *H. nana* compared with 25.8% of girls.<sup>22</sup> Male children also had higher rates of infection of intestinal schistosomiasis (3.89% compared with 1.60% of female children).<sup>24</sup> Poor sanitary conditions, drinking unclean water, deplorable living conditions, insecurity and exposure to sexual exploitation were the main social factors that predisposed these displaced children to infections and diseases. Two studies in Uganda<sup>26 43</sup> found proper education and remuneration of community volunteers who distributed prepackaged antimalarial medicines improved the uptake of home-based management and decreased rates of malaria complications.

### Growth and child nutrition

Six articles concerned child growth and nutrition.<sup>20 27 30 39 40 42</sup> All six focused on factors and interventions that exacerbate or mitigate child malnutrition postdisplacement and were conducted in six regions: Rwanda,<sup>27</sup> northern Nigeria,<sup>40</sup> the Gwembe Tonga Valley in Zambia,<sup>39</sup> the Kasese district at the Uganda–Congo border,<sup>30</sup> northern Uganda<sup>42</sup> and Somalia.<sup>20</sup> Two studies<sup>20 42</sup> focused on the efficacy of community-based interventions for displaced mothers in improving child nutrition. These studies demonstrated that neither cash supports nor psychosocial education interventions could improve the nutritional status of the displaced children. However, home-based early child development/nutrition education improved mothers' feelings of competence as well as maternal mood and engagement, while cash incentives only improved food security.

Two studies showed that internally displaced children often had poorer levels of nutritional health than non-displaced children<sup>30 39</sup> and many bore the consequences thereof. For example, growth was stunted in half of the displaced children in the Kasese district along the Uganda–Congo border.<sup>30</sup> Conversely, one study from 2000<sup>27</sup> showed that displaced children living in camps in the Democratic Republic of Congo actually had better nutritional status (1.7% rate of acute malnutrition) than children in remote rural towns nearby (Kirotshe and Masisi, which showed 3.8% and 5.8% rates of acute malnutrition, respectively). The study attributed this difference to the presence of aid agencies in the camps and lack of support in nearby rural communities.<sup>27</sup> These findings

indicate host populations should be considered in interventions. Host populations can also play a role in mitigating the effects of displacement. Glew *et al*<sup>40</sup> found that displaced Fulani children in northern Nigeria showed no significant nutritional deterioration in the 7 months following displacement. Therefore, stress associated with geographical and sociological displacement did not necessarily translate into growth failure or adverse effects on body composition. This was partly explained by the fact that the Fulani children were displaced into a secure area where people of the same ethnic group cared for them.<sup>40</sup> Additionally, although access to staples was limited, the Fulani children had access to dairy products such as milk, cheese and butter fat from the cattle that had been recovered in the days and weeks following the crisis as well as maize, millet and sorghum. Also of significance, these children were never separated from their mothers in the 7 months postdisplacement.<sup>40</sup>

A randomised controlled trial in Somalia showed that food security was improved when parents lessened their own ration so that their children could eat. Expenditure decisions that prioritised household utilities such as water, kerosene, firewood and soap over food also impacted overall outcomes of community-based interventions.<sup>20</sup> Nonetheless, the community-based intervention that included an unconditional cash transfer of US\$84.00 for 5 months, a once-only distribution of a non-food items kit, and the provision of piped water free of charge did not achieve improvement specifically for nutritional outcomes. Speculation is that cash transfer may not have been used in the most nutritionally optimal way because of potentially limited market choices, that is, the availability of a variety of nutritious foods.<sup>20</sup> Behaviour change, peer communication and education were found to influence the knowledge of families with respect to food choices and household expenditure decisions and help mothers to know how to improve their child's development and play activities. Overall, the various studies report mixed results on the outcomes of humanitarian interventions for nutrition because several factors are at play in each individual study setting, including public health, nutritional vulnerability livelihoods and market environment.<sup>20 42</sup> Gender was not a noted factor in these studies.

### Mental health

Eight articles focused on child mental health and psychological well-being: three were qualitative,<sup>33–35</sup> four were quantitative<sup>21 23 38 41</sup> and one was mixed method.<sup>44</sup> One study was conducted in the Democratic Republic of the Congo,<sup>41</sup> one in Sierra Leone<sup>21</sup> and the rest in northern Uganda. Findings show that internally displaced children reported higher degrees of internalising symptoms and post-traumatic stress than non-displaced children<sup>34</sup>; as well, experiences of violence were a compounding factor in mental health problems that emerged during or after displacement.<sup>44</sup> These problems most frequently manifested in five symptoms: obsessive compulsive thinking,

grief, worry, generalised anxiety and a problem-oriented outlook.<sup>35</sup> Further, Betancourt *et al*<sup>35</sup> and Bass *et al*<sup>34</sup> each found that mental health symptoms were often described in locally specific ways that merged Western understandings of mental health with culturally specific understandings of mental and behavioural problems. In addition, adolescents and caregivers disagreed on the severity of the adolescents' mental health problems, with caregivers placing greater emphasis on behaviour and youth expressing greater concern for internalising problems.<sup>34</sup> In addition, gender was found significant as boys were more likely to agree with caregiver assessments of their mental health than were girls.<sup>34</sup> This is likely the fact because boys more often show externalising mental health symptoms while girls face internalising symptoms.<sup>34 41</sup>

Several studies assessed interventions into mental health problems. Classroom settings<sup>33</sup> and group psychotherapy interventions<sup>38</sup> were both found to be more beneficial for girls than boys. School-based trauma treatment programmes including drama and art therapy techniques were found to improve emotional outcomes in children.<sup>33</sup> In addition, Haroz *et al*<sup>23</sup> showed that adverse life experiences after exposure to conflict (such as the death of a loved one) can impede the success of interventions. One successful intervention for traumatic stress symptoms that also aided in classroom learning was the Rapid-Ed Programme in Sierra Leone, demonstrating the effectiveness of combining education and trauma healing in postconflict areas.<sup>21</sup>

### Health services delivery

Five articles focused on health services delivery: four were qualitative studies<sup>29 31 32 36</sup> and one was a mixed method study.<sup>37</sup> Overall, infant care in IDP camps was inadequate. Several factors contributed to this problem: first, poor nutrition, lack of opportunities and insecurity in IDP camps create barriers to good prenatal health<sup>36</sup>; second, essential medical supplies are lacking in the camp facilities<sup>29</sup> and finally, insufficient healthcare providers,<sup>36</sup> and specifically female healthcare providers,<sup>37</sup> present another barrier to both prenatal and infant healthcare.

Sami *et al*<sup>29 37</sup> examined data gathered in the same setting in South Sudan but over different time periods. These two studies, along with Gee *et al*,<sup>36</sup> specifically found that both institutional and sociocultural factors contributed to the poor health of newborn and small-for-gestational-age babies born in displaced communities. These factors included lack of professional birth attendants and postnatal care services, as well as harmful traditional newborn care practices such as mixed feeding, use of herbal infusions to treat illnesses and the application of ash and oil to the newborn's umbilicus.

Age-appropriate reproductive healthcare was also lacking in IDP camps, often resulting in unplanned pregnancies. Further, the lack of necessary medical services for reproductive health issues served to compound these problems, as inadequate services were available<sup>31</sup>; this

mirrors the issues noted above for prenatal and infant health concerns. Likewise, basic needs such as shelter were not being met in camps.<sup>32</sup> No data on health services delivery for internally displaced children were found for settings outside of Sudan and South Sudan.

## DISCUSSION

This scoping review on displaced persons in sub-Saharan Africa highlights four major areas of research on internally displaced children: infection and disease prevalence, mental health, growth and nutrition and health service delivery. The results largely indicate poorer health outcomes among internally displaced children in the areas of mental health and infectious disease. This evidence corroborates previous reviews on the health of refugees and internally displaced children that indicate poorer mental and physical health status.<sup>7–9</sup> Mental health problems are significantly more elevated in children displaced by war. For example, Attanayake *et al*<sup>7</sup> conducted a systematic review that shows a 43% rate of depression in this population and Owoaje *et al*<sup>1</sup> reported that prevalent mental health problems included post-traumatic stress disorder (range: 42%–54%) and depression (31%–67%). Mental health problems result from a complex interplay of factors operating at the individual level (eg, exposure to violence, child's age, exposure to sexual abuse), family factors (eg, low income), community factors (eg, availability or absence of social supports in the postmigration period) and social factors (eg, premigration and postmigration conditions).<sup>9</sup>

The nutrition studies reviewed indicate that community interventions, including incentive-based nutrition education, do not improve growth and nutrition for internally displaced children; however, the presence of aid agencies and the ability of families to connect with host communities appear to improve nutritional outcomes.<sup>27–40</sup> According to a systematic review conducted by Owoaje *et al*<sup>1</sup> on the health problems of IDPs in Africa, the most prevalent symptoms among children were fever, cough and diarrhoea. Demographic factors associated with malnutrition included being a male child, being between 3 and 24 months of age and the presence of fever. The lack of intervention success for internally displaced children may be attributed to a lack of access to nutritious food rather than lack of education around healthy nutrition habits. As such, education-based interventions may be less effective than interventions aimed at improving food access, as well as increased stability and community engagement, which may be limited for those living in IDP camps.

This scoping review, in combination with findings of Owoaje *et al*,<sup>1</sup> shows that internally displaced infants and under 5 children are at a higher risk of malnutrition compared with older children, which we identify may be attributable to maternal early infant-feeding practices. Data show that there is a variety of other factors that impact nutrition, including poverty, community instability that

may impact food security, as well as infection and disease prevalence leading to decreased energy.<sup>45</sup> These factors can all be created or worsened by displacement. Further research into IDP mothers' feeding practices should consider the psychosocial factors that influence feelings of competence and attitudes towards breast feeding and infant feeding. These findings point to the potential role of aspects of the local context that may serve as either risk or protective factors for internally displaced children. They also indicate the promise of humanitarian efforts with respect to addressing the health of internally displaced children. Specifically, efficient humanitarian aid may serve to protect against some of the risk factors associated with displacement, especially after trauma.

These findings also point to the importance of attending to the needs of host societies. Indeed, the World Bank<sup>46</sup> identifies economic challenges that may be faced by host societies. For example, internal displacement often causes a disequilibrium in the economic standing of host societies. This could contribute to increasing poverty in host societies, which in turn may contribute negatively to health outcomes of IDPs and their children. Thus, effective humanitarian aid must consider these imbricated relationships. However, there is a need for caution when involving host communities in interventions because there are mixed views. Morris *et al*<sup>42</sup> reported that interventions have been ineffective in improving children's nutritional status, but problems can be related to who is targeted in the household during food distribution. Ager *et al*<sup>33</sup> noted the limitations of interventions in a study in northern Uganda caused by lack of material, financial and human resources.

Most of the studies reviewed were quantitative (n=16), and limited qualitative work exists particularly with respect to infectious disease control. Thus, while the research shows a marked prevalence rate of infectious diseases in internally displaced camps, it is still unclear which contextual factors may decrease the spread of these diseases. Moreover, few studies investigate interventions to control infectious diseases in camps for IDPs, including internally displaced children. This is in stark contrast to research studying interventions related to nutrition and mental health, which are more common. Thus, this review suggests more qualitative research be conducted to disentangle the contextual factors relevant to displacement, as well as intervention studies to provide information on promising practices that will contribute to the health of internally displaced children in particular.

Most qualitative work to date has been descriptive in nature, and more studies are certainly called for in this area. Rigorous approaches that include statistical methods as well as sufficient and appropriate sampling are needed to illuminate the intricate web of factors that contribute to the health of internally displaced children. Our review also points to a geographic maldistribution of research on internally displaced children more generally, as the studies thus far have only been conducted in Uganda, South Sudan and Somalia. At present, few



studies have focused on internally displaced children in areas that have experienced displacement in recent years, such as Central Africa (Cameroon and Congo, each estimating 459 000 and 1 921 000 newly displaced people, respectively, in 2018<sup>47</sup>) and West Africa (such as in Nigeria, which estimated 1 154 000 newly displaced people in 2018<sup>46</sup>). Thus, more research needs to be undertaken in these regions.

### Limitations

This scoping review has several strengths including a comprehensive search of multiple databases and article selection by two reviewers. However, some weaknesses should be noted. First, a quality appraisal was conducted but no articles were excluded based on quality. This is consistent with scoping review methodology.<sup>17 18</sup> Future reviews could use a systematic review methodology with a stronger quality appraisal. Second, the review focused on peer-reviewed journal publications and did not account for grey literature. Therefore, it did not account for health findings published in brochures, policy statements, websites, and so on. Also, our English search terms might have excluded articles in other languages, including official languages in some African countries such as French. We suggest future studies consider linguistic diversity with article search and selection.

### CONCLUSION

Our review identified elevated health problems among children who have been internally displaced as well as in children of host societies. This indicates the need to consider the influence of the intricate chain of complex factors on the health of people who have been internally displaced. These factors can operate at all levels and at all stages of the migration process (including premigration and postmigration). Intervention studies are needed to shed light on approaches to improve the health of internally displaced children.

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**Contributors** BS conceptualised the project and design, contributed to interpretation of data, supervised research assistant, wrote the introduction and methodology section and reviewed the work for important intellectual content. SI, CN, HG and TL contributed to the design of the work and reviewed the work for important intellectual content. OA and MT completed data analysis and data extraction, completed article selection and wrote part of the results section. MK contributed to the design of the work, reviewed the work for important intellectual content and supervised research assistants.

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**Data availability statement** All data relevant to the study are included in the article or uploaded as supplementary information. Scoping review search strategy, data extraction and PRISMA were uploaded with manuscript.

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