

Exploring attributions of causality for child undernutrition: Qualitative analysis in Lusaka, Zambia

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Abstract

Child undernutrition is responsible for 45% of all under-five deaths in low- and middle-income countries (LMICs) and numerous morbidities. Although progress has been made, high levels of child undernutrition persist in Zambia. Existing studies have explored primary caretakers' (PCs) explanatory models of child undernutrition in LMICs, without comparison with those of health care providers (HCPs). This paper examines and compares the perceived causes of child undernutrition among PCs and HCPs in Zambia. We conducted a qualitative study, using semistructured one-to-one and group interviews, with 38 PCs and 10 HCPs to explore their perceptions of child undernutrition and its perceived causes in Lusaka district, Zambia. Interview data were analysed with thematic analysis. Our findings indicate that PCs and HCPs in Lusaka district have divergent explanatory models of child undernutrition and perceive parental agency differently. In divergently framing how they conceptualise undernutrition and who is able to prevent it, these models underpin different attributions of causality and different opportunities for intervention. PCs highlighted factors such as child food preferences, child health, and household finances. Contrarily, HCPs stressed factors such as 'improper feeding', only highlighting factors such as wider economic conditions when these impacted specifically on health care services. One factor, identified by both groups, was 'inadequate mothering'. To accelerate the reduction of child undernutrition, interventions must address divergences between PCs and HCPs' explanatory models. Additionally, attention needs to be paid to how wider socio-economic and cultural contexts not only impact childhood undernutrition but shape attributions of causality.

KEYWORDS

complementary feeding, infant and child nutrition, nutritional anthropology, practice, qualitative methods, undernutrition

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1 | INTRODUCTION

Childhood undernutrition is a complex problem that challenges low- and middle-income countries (LMICs). In Zambia, although the government has increased annual nutrition expenditure on children under 5 years old, the burden of childhood undernutrition persists (Global Nutrition Report, 2019). The current average annual rate of reduction of childhood stunting in Zambia is lower than World Health Assembly recommendation and rates of childhood wasting continue to fluctuate (USAID, 2020). Presently, one in three Zambian children under 5 years old is affected by one or more forms of undernutrition—stunting, wasting, and micronutrient deficiencies (Zambia Statistics Agency et al., 2020).

Policy makers and professionals have promoted the United Nations Children's Fund (UNICEF) conceptual framework of malnutrition to advance nutrition policies and programmes for children globally (UNICEF, 2020). In contrast to earlier biomedical models of health, this framework valuably employs a biosocial approach that accounts for social, cultural, and environmental factors that impact the onset and course of disease (Farmer et al., 2006, 2013; Hanna & Kleinman, 2013; Kim et al., 2013). As it pertains to clinical practice, this framework, alongside existing literature, is intended to inform an improved understanding among health care providers (HCPs) of the wider structural and sociocultural determinants of childhood undernutrition, and a contextualised understanding of the varying impact of these determinants in their communities.

Previous studies have explored primary caretakers' (PCs) perceptions of the determinants of childhood undernutrition in varying contexts (Paul et al., 2011) and the wider 'explanatory models' in which these attributions of causality are embedded (Flax, 2015). However, existing literature has largely centred around PCs' perceived determinants of infant and young child feeding (IYCF), highlighting the impact of finances, cultural beliefs, social-cultural feeding norms, and gender on IYCF (Bazzano et al., 2017; Kavle et al., 2017). To date, no studies have compared how PCs and HCPs attribute causality for undernutrition differently or the implications of these differences; this is the first study to do this.

An explanatory model (Kleinman et al., 1978) encompasses how a disease presents itself, what causes it, and how it can be treated; this is always shaped by wider cultural and social structures (Dinos et al., 2017). Disconnects between PCs' and HCPs' explanatory models of disease have implications for prevention, treatment, and quality of care (Atkinson & Medeiros, 2009). In relation to child undernutrition, divergences in explanatory models, and specifically, attributions of causality that are a part of such a model, could affect health-seeking behaviours, the quality of nutrition services provided, and ultimately, childcare practices. Neglecting to discuss and compare the perspectives of HCPs and PCs may therefore undermine efforts to prevent and control childhood undernutrition.

This study explores and compares the perceived causes of child undernutrition among PCs of children under 5 years old and HCPs in

Key messages

- Primary caretakers (PCs) and health care providers (HCPs) in Lusaka district attributed causality for child undernutrition differently. PCs emphasised factors they perceived as constraining their agency, whereas HCPs perceived PCs as having more agency than they acknowledged.
- HCPs' conceptualisations of childhood undernutrition were not reflective of the biosocial approach or of the local context described by PCs.
- To accelerate progress in Zambia, PCs may require additional tailored nutrition education that is reflective of their context. Furthermore, there is a need to strengthen current approaches to address the impact of economic constraints on PCs and HCPs.

Lusaka district, Zambia, to inform the design of future nutrition interventions, the implementation of existing programmes, and broadly improve the impact of these interventions on child nutritional outcomes.

2 | METHODS

We conducted a qualitative study of experiences of child undernutrition, grounded in the theoretical frameworks of medical anthropology (Lambert & McKeivitt, 2002), in Lusaka district, Zambia, between May and August 2019. Ethical approval was obtained from the institution at which The first author was enrolled at the time of data collection and ERES Converge IRB (Zambia). Further approvals were obtained from the National Health and Research Authority, Lusaka Province Medical Office, and Lusaka District Health Office.

2.1 | Setting

Lusaka district is an urban region with an estimated population of 2.6 million people (Zambia Statistics Agency, n.d.). Study participants were identified from government health care facilities during under-five clinics. Within this region, health care facilities are largely accessible (Zambia Statistics Agency et al., 2020). Accordingly, growth monitoring and promotion clinics, referred to within this paper as under-five clinics, are well attended. Under-five clinics are offered at all health care facilities and caretakers of children under 5 years old are encouraged to attend monthly.

2.2 | Sampling strategy

Three government health care facilities with higher rates of stunting, in the most recent quarter, were purposively selected. Facilities were identified according to rates of stunting, as opposed to other forms of undernutrition, because the prevalence of other forms of child undernutrition fluctuate easily as a result of short term events (Roser & Ritchie, 2013). One facility was identified from each of the three lowest levels of care to ensure larger catchment areas, capture a broad range of perspectives, and increase the representative nature of the data.

Within each health care facility, we identified HCPs involved in monitoring child growth at the under-five clinic. In turn, HCPs identified PCs with at least one child under 5 years old whose weight was decreasing or who was considered underweight and who had engaged with the clinic for growth monitoring. Child weight was used to identify PC participants because it was measured monthly during growth monitoring, whereas height was measured less frequently. Furthermore, the under-five cards with records of child growth only detailed child weight. Within this sample, we excluded PCs whose child was under 6 months. The 6-month criterion is in accordance with the World Health Organization (WHO) Infant and Young Child Feeding (IYCF) guidelines, adopted by the Zambian government in 1992, which recommend that complementary feeding begin at 6 months (World Health Organization, 2003). At this point, children are at a higher risk of becoming undernourished. Before conducting any interviews, we obtained written consent from all participants.

2.3 | Data collection

Interviews with HCPs and PCs were conducted separately, at health care facilities. Where feasible, one-to-one interviews ($n = 31$) were conducted. Group interviews ($n = 6$) were only conducted due to time constraints such as participants' schedules. Group interviews with PCs included two to three participants, and the sole group interview with HCPs included five participants.

All interviews were guided by a semistructured topic guide developed by the first and second authors (Supporting Information). This included questions and prompts about household food security, IYCF practices, childcare practices, cooking practices, and lived experiences related to child undernutrition. The topic guide was designed to be open and give participants room to discuss related topics that were of importance to them. The questions were also designed to elicit as much detail as the participant desired to give. Interviews were designed to last between 45 min and 1 h. Participants were provided with refreshments during the duration of the interviews. Additionally, PC participants were provided with an additional food item and a packet of multipurpose detergent as a token of appreciation. This was decided in collaboration with local stakeholders.

The first author, with the support of the fourth author, conducted all interviews. Interviews were in English unless participants were

more comfortable speaking in Nyanja or Bemba. Where this was the case, the fourth author translated the questions and responses. With the consent of participants, we recorded all interviews with a voice-recording device. These were transcribed verbatim in English and anonymised.

We determined data saturation was reached once we began identifying significant patterns in the responses of each group. However, we continued to conduct interviews past the point at which we believed we had reached data saturation and confirmed data saturation during data analysis.

2.4 | Analysis

Interview transcripts were analysed separately for each participant group using inductive thematic analysis (Alhojailan, 2012; Braun & Clarke, 2014). The first author conducted initial coding on five interviews from each participant group and reviewed coded transcripts with the second author. Once the first and second authors were in agreement about the coded transcripts, the first author coded all transcripts line by line. Codes were grouped and themes developed. Themes were discussed, refined, and agreed by the first and second authors. Themes from PC and HCP data were then compared and contrasted. Interview data were managed using Version 12 of NVivo, QSR International's qualitative data analysis software. This paper was drafted by the first author with input from the second author and reviewed by all co-authors.

2.5 | Reflexivity

The first author, a public health doctoral researcher, is a Zambian woman who spent her formative years in African countries, with periodic travel to Zambia. Although the first author did not grow up in Zambia, she grew up in a Zambian household and is familiar with common Zambian cuisine, feeding practices, and childcare practices. Considering insider/outside literature, which defines the positioning of researchers as a continuum as opposed to a dichotomy; in some respects, the first author was viewed as an insider and in others, she was viewed as an outsider (Dwyer & Buckle, 2009; Gair, 2012). Although the first author's background brought a deeper cultural understanding to the data collection process, she gave participants room to explore child undernutrition and limited the projection of her experiences and assumptions. Furthermore, interviews were conducted with the fourth author, who in many respects was considered more of an insider than the first author, to provide participants with a greater level of comfort.

No prior relationship existed between the first author, the fourth author, and the study participants. Upon arrival at health care facilities, both were introduced to hospital staff by the medical superintendent. HCPs then explained to groups of PCs that the first and fourth authors were researchers conducting research on child undernutrition.

3 | FINDINGS

Forty-eight participants took part in this study—38 PCs and 10 HCPs. Participant characteristics are detailed below (Tables 1 and 2).

3.1 | Themes

Six perceived causes of child undernutrition emerged from participants' narratives. PCs highlighted children's food preferences, general child health, and household finances. Differently, HCPs emphasised 'improper feeding' and wider economic conditions. Both PCs and HCPs also stressed 'inadequate mothering' (Figure 1).

3.2 | Conceptualisations of child undernutrition

PCs and HCPs' perceived causes of child undernutrition revealed different conceptualisations of what child undernutrition was between the two groups. When asked what they understood by the term undernutrition, PCs all focused on the *quantity* of food a child was eating, describing undernutrition as 'a disease whereby a child lacks food' (Participant 42). PCs' conceptualisations of undernutrition

TABLE 1 Primary caretaker participant characteristics (N = 38)

Primary caretakers (N = 38)	
Health care facility	
Facility one	47%
Facility two	16%
Facility three	37%
Sex	
Female	95%
Male	5%
Relation to child	
Mother	92%
Father	5%
Nonfamilial caretaker	3%
Age	
17–19	11%
20–24	26%
25–29	29%
30–34	18%
35+	13%
Undisclosed	3%
Number of living children	
1	42%
2	21%
3	13%
4	16%
5+	8%

TABLE 2 Health care provider participant characteristics (N = 10)

Health care providers (N = 10)	
Health care facility	
Facility one	50%
Facility two	N/A ^a
Facility three	50%
Sex	
Female	100%
Job title	
Nutritionist	20%
Nurse	20%
Psychosocial counsellor	20%
Midwife	20%
Public health technologist	10%
Undisclosed	10%
Years of experience	
1–4	20%
5–9	20%
10+	30%
Undisclosed	30%

^aHCPs jointly served facilities two and three.

centred on severe acute malnutrition. In contrast, HCPs conceptualised what child undernutrition is differently, focusing on the *quality* of food instead of *quantity*. HCPs stressed the importance of a *balanced diet* and *proper meals* to prevent the development of undernutrition.

3.3 | Food, bodies, and individual agency

3.3.1 | Children's food preferences

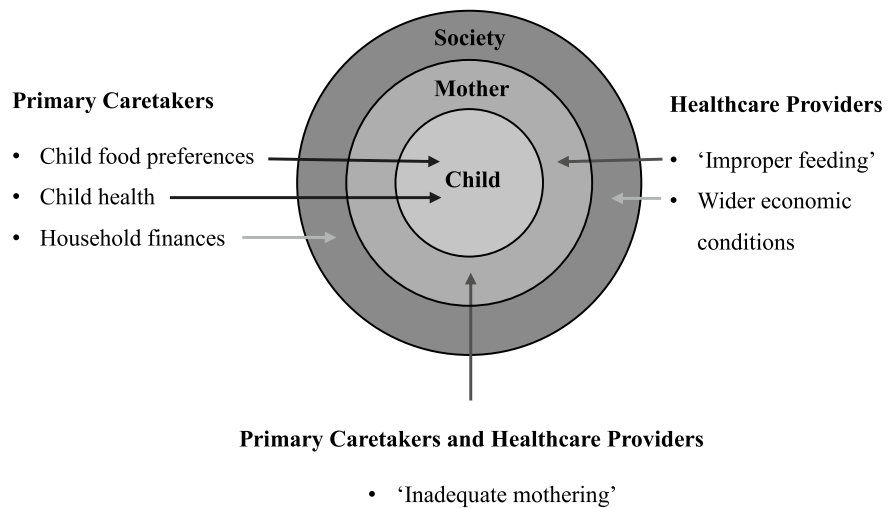
Primary caretakers

Due to PCs' conceptualisation of child undernutrition as an illness that occurs when children are not fed an adequate amount of food, they emphasised causal factors as those which they perceived to impact food quantity. The first of these was highlighted by PCs' descriptions of children who: '[refused] to eat' (Participant 7). Parents' framing of children's food preferences as a perceived cause of undernutrition was confirmed by HCPs. One HCP described PCs who made statements such as 'this child likes maybe porridge [maize meal porridge]. If I give the child nshima [a staple food made of maize flour], she'll refuse' (Participant 44).

PCs' perceptions of children's food preferences impacted both the amount and type of food they felt able to feed their children.

Sometimes, when his appetite comes, he will eat. When you try to feed in the afternoon, he refuses. You try to cook at another time, he may refuse. (Participant 42)

FIGURE 1 Attributions of causality for child undernutrition, by participant group



Because this one refuses porridge. Yes ... So I only cook for him rice. (Participant 38)

To address these concerns, some PCs focused on encouraging children to eat the meals prepared for them regardless of whether they had a preference for the meal or not. Other PCs resorted to only feeding children the food that they enjoyed. This sometimes meant that children were not eating meals of high nutritional value but instead meals such as plain white rice or maize meal porridge.

Health care providers

Because HCPs believed that child undernutrition occurred largely due to the inadequate *quality* of food, they did not conceptualise children's food preferences as a significant driver of child undernutrition, minimising the sense of 'struggle' that arose in PCs' interviews.

One HCP detailed that some PCs '[have] just got this belief that ... breakfast is just groundnuts - [maize meal] porridge with groundnuts' (Participant 45). As such, 'if the child refuses to eat porridge with groundnuts, that child will be starving' (Participant 45). Yet, this HCP stressed the wide array of 'different cereals' which are available, such as 'soya [based breakfast cereal]' (Participant 45). Although HCPs were understanding of the fact that children can be fussy eaters, they stressed a wide variety of locally available and affordable food items which met the food preferences of children. Consequently, HCPs attributed causality differently, emphasising moral judgements that are discussed in later sections.

3.3.2 | Child health

Primary caretakers

PCs also identified two embodied factors—body type and illness—which they perceived as influencing child feeding and, thus, causing undernutrition. A few PCs believed child undernutrition to be the result of a particular body type. This is a belief that HCPs described also having heard PCs express. One mother stated, 'Us parents, most

of the time we say when the child is too thin, as tradition, we used to say it's how [the child] is' (Participant 26). This belief was shared by mothers of children suffering from undernutrition who had tried many sources of treatment, to no avail. One mother of a child suffering from chronic undernutrition mentioned that she had tried many remedies to treat and prevent this:

He was - just had diarrhoea. That's how we went to the clinic... We would cook for him [maize meal] porridge with oranges. Just trying out, we would cook [maize meal] porridge with [dried fish] and at last, when things became difficult, we went to the village. (Participant 5)

This mother had tried changing the child's diet, visiting health care facilities, and eventually consulted a traditional healer. She now believed that her child's poor growth was simply 'how the child is' (Participant 5). Another mother mentioned that she believed that her undernourished child's body was akin to his father's thin body type: 'I think he took it from his father' (Participant 9). In circumstances where PCs felt they had exhausted their options, they perceived themselves as no longer having agency.

Views of child undernutrition as a body type were embedded within the wider structural context of poor child health in Zambia and an associated sense of a lack of agency among PCs. One mother who regularly attended under-five clinics detailed the following: 'Sometimes, if [my child] is sick, he loses appetite. So if he is sick I will easily know that things will not be okay because he hasn't been eating' (Participant 7). In addition to decreased appetite, PCs noticed that 'when the child is sick [the weight] goes down because the baby refuses to eat' (Participant 22). Illnesses or conditions perceived as causing child undernutrition ranged from fevers, malaria, teething, diarrhoea, flu-like symptoms, and stomach pains.

However, despite the fact that most PCs took their children to health care facilities when they were ill, there was a widespread sense of hopelessness arising from the sense of a lack of agency over both the child's eating and health, across the data set.

Health care providers

Although child health emerged as an important determinant of child undernutrition according to PCs, we noted a difference in HCPs' perceptions. They did not mention child health as a significant driver of child undernutrition. Instead, they described child health in their communities as 'fair' (Participant 48) and 'not that bad' (Participant 30). Furthermore, when asked about the state of child health in Zambia more widely, one HCP praised government initiatives.

The ministry has really worked hard to draw up programmes which also include the outreach programme. (Participant 48)

As such, while PCs primarily identified drivers of child undernutrition in which they viewed themselves as having little or no agency, HCPs perceived PCs as having more agency, and thus responsibility, than they acknowledged. In so doing, HCPs negated the wider structural context in which PCs operate, which led to moral judgements.

3.4 | Moral discourses: Perceived responsibilities

3.4.1 | Improper feeding

Health care providers

While PCs detailed how child food preferences, and individual and structurally framed embodied factors impacted feeding practices by exerting influence on what their child ate, HCPs strongly attributed causality for undernutrition to parents' actions. HCPs highlighted 'improper feeding practices', by parents, as an important driver of child undernutrition.

Most of the mothers that we interview, we find that the children are not fed the right food. (Participant 29).

HCPs defined 'proper' (Participant 44) feeding according to a meal's nutritional value, and stressed the importance of a 'balanced diet' (Participant 48). These differences in perceived parental agency can be linked to fundamental divergences, noted above, between how each group conceptualised child undernutrition, as related to the *quality or quantity of food*.

In line with the fraught realities of caretaking more broadly, child feeding was viewed by HCPs as the responsibility of mothers. As such, when they deemed child feeding inadequate, blame was placed on mothers. 'Improper feeding' by mothers was ascribed to low social status, generational and community-wide feeding practices, and a lack of knowledge about what HCPs deemed to be appropriate feeding practices.

First, HCPs stated that lower income mothers wanted to feed their children what they believed children in higher income homes were eating—junk foods of low nutritional value. This paradigm of

desired feeding practices and social status is explored in the *Household Finances* section, below. Second, HCPs discussed what they framed as 'harmful' feeding practices which are '[passed] on to the next generation' (Participant 30).

For example, many mothers avoided feeding young children certain proteins such as poultry and red meat, in accordance with feeding practices encouraged by elders and community members. There was a shared belief that foods of such texture could not be prepared in an age-appropriate manner. Common and accepted methods of preparing poultry and red meat, ascribed to by mothers and challenged by HCPs, did not allow for a texture that was easy for young children to eat. While HCPs were understanding of mothers' reservations, they disagreed with this practice and encouraged mothers to embrace alternative methods of food preparation.

[PCs] should just learn babies eat everything. It's just a matter of making it in a form that a child can eat. (Participant 45)

HCPs were aware of the wider cultural systems from which mothers' cooking and feeding practices emerged, however, they believed that mothers within these systems had more agency than they acknowledged.

Lastly, HCPs believed that among some mothers, there was a 'lack of knowledge' (Participant 48) about how to best feed children. This was the case even though HCPs were committed to educating PCs during under-five clinics and outreach in communities. While many PCs agreed that they received health information from HCPs, they believed that the information was not personalised and could not easily be implemented in their households—'some things, you can't manage' (Participant 33).

3.4.2 | Inadequate mothering

Primary caretakers and health care providers

As discussions about 'improper feeding' focused on women, they brought to light a wider conversation about parenting and what it means to mother a child within the Zambian context. Despite differences in the attribution of causality between both groups, PCs and HCPs both identified what they described as 'inadequate mothering' as a perceived cause of child undernutrition. When asked about drivers of child undernutrition within their communities, both PCs and HCPs made value judgements about mothers' child-rearing.

In a home, child well-being was viewed as a mother's duty by both groups. This gendered nature of child-rearing practices has been observed across various cultures. As it relates to child undernutrition, mothers in Zambia were in charge of cooking and feeding their children, and ensuring that they were in good health. One mother plainly stated, 'It's my responsibility to take care of my child' (Participant 10). PCs and HCPs judged and blamed mothers who did not adequately carry out the above tasks. PCs and HCPs ultimately believed that 'inadequate mothering' could cause child

undernutrition as mothers would disregard their children's meal frequency and meal content.

What I've seen in most mothers is that they don't really pay attention... You'll find a child, maybe a child hasn't eaten from morning. They're just giving her maybe lunch at 12:00. Or, they won't give her proper food. (Participant 23)

PCs and HCPs both attributed this trope of 'inadequate mothering' to laziness, preoccupation with professional work, and substance abuse. While some mothers were termed '[lazy]' (Participant 23), others were believed to have misdirected priorities. Both PCs and HCPs believed that working mothers did not feed their children or pay attention to what the children were being fed.

Sometimes mothers are too busy. Like you're working... You just leave a child with a maid or the young sister. 'No, you give her whatever you give her'. Then the same child at home doesn't know what to give the baby. She'll just be giving her you know, [yoghurt drink], tea, biscuits the whole day until the mother comes back. (Participant 23)

Thus, PCs and HCPs judged working mothers' ability to ensure adequate child nutrition, believing that working mothers blindly trusted non-familial caretakers or older siblings to look after younger children. Siblings would end up giving babies food with low nutritional value. Nonfamilial caretakers were also frequently described as having no vested interest in the health of the children they care for: 'Some maids will say 'The baby is refusing to eat, so it's not my fault. After all, it's not my baby'' (Participant 46).

While PCs and HCPs expressed the above judgements about working mothers, participants who were working mothers described how involved they were in child feeding. When asked how frequently in a day their children ate, and about the content of their meals, most working mothers were able to provide detailed answers. One mother detailed a chart system she used to meal plan. As such, she stated that 'Even if I'm out, today they'll know that we're eating this' (Participant 26). Similarly, other working mothers left their children's caretaker with detailed instructions about when and what to feed their child while they are at work. However, these same working mothers viewed themselves as exceptions.

HCPs occasionally attributed 'inadequate mothering' to substance abuse. This was largely the case for stay at home mothers. These mothers were described as women who felt 'they've got nothing to do' (Participant 44). Mothers would resort to drinking alcohol and disregard childcare. While a few HCPs mentioned substance abuse among mothers, only one PC mentioned substance abuse among mothers as a perceived cause of 'inadequate mothering', and subsequently child undernutrition. This suggests that in this instance, HCPs may be further displacing responsibility for child undernutrition onto PCs while negating the role of structural factors.

3.5 | Socio-economic factors: From the household to the state

3.5.1 | Household finances

Primary caretakers

In contrast to moral judgements that implied parental agency in 'improperly' feeding children, PCs identified household finances as a structural driver of child undernutrition. PCs recounted how household finances impacted food purchases, meal diversity, and meal frequency. When PCs were asked how they decide what food to buy, PCs simply stated 'money' (Participant 13).

If there's enough money, we buy maybe chicken and then we add vegetables sometimes. If we do not have money for chicken, we buy [dried fish] and [veggies]. We cook and eat. (Participant 11)

With a higher budget, PCs bought more expensive protein such as meat. With a lower budget, PCs would purchase more affordable protein such as dried fish or soya pieces. While some mentioned how finances affected the food items they purchased, others expressed that finances decreased the amount of food they bought: 'If I have enough money, I still buy the [food] in bulk' (Participant 26). When money was low, this same PC only 'selected those [foods] which [were] important' (Participant 26).

The implications of finances on food purchases altered child-feeding practices. Limited finances led to a decrease in both meal diversity and meal frequency among children.

We feed the baby twice in a day. There is no money. (Participant 15)

When they reach the age as this one, the baby needs to be fed three times a day... I give the baby the same [kind of] food throughout. (Participant 1)

In spite of financial difficulties, PCs continued to prioritise their children's nutrition. PCs frequently mentioned the importance of feeding their children first and making sure that their nutritional needs were met.

When there is not enough money, I have little, I look at the family and then I say 'how do I use this money for the children to have enough'... Because I need to buy enough for the children to have enough to eat. (Participant 16)

Health care providers

Although HCPs sympathised with PCs, they did not consider household financial difficulties a significant driver of child undernutrition in their communities. HCPs placed judgement on stay at home mothers for limited household finances, stressed their efforts to minimise the

impact of low finances on child nutrition, and sometimes blamed mothers for limited implementation of recommendations on how to mitigate the impact of low finances.

Within family structures where mothers were viewed as making a choice to not work, mothers were judged as 'being dependent on the men' (Participant 45). Providing more context, one HCP explained that 'most mothers don't want to be independent and work' but instead complain that 'the father is not bringing food' (Participant 45). HCPs placed blame and judgement on stay at home mothers who they believed had the ability to 'sustain [themselves] and [their] family' (Participant 48) but were choosing not to.

HCPs also emphasised that they educated mothers about how to feed their children with limited finances. HCPs highlighted interactive cooking demonstrations as an important way to educate PCs about how to best feed their children, especially when finances were low. HCPs stressed the importance of 'proper diets' (Participant 48) and 'simple recipes' (Participant 48) which are 'locally available' (Participant 44) and 'cheap' (Participant 27). Linking back to the paradigm of 'proper' and 'improper' feeding discussed above, one HCP detailed standard communications with PCs with low budgets saying, 'We always encourage [PCs] – give the child what you can afford. As long as you prepare it in a right way. It should be a proper meal' (Participant 44).

HCPs were intentional about being inclusive in their distribution of knowledge about how to feed children with a low budget. As such, they believed that low budgets caused child undernutrition if one or more of the following occurred: (1) PCs did not apply the knowledge that they received from HCPs or (2) when PCs wanted to feed their children foods of low nutritional value, which are common in communities of higher socio-economic status. In both scenarios, HCP perceived PCs as having more agency than they acknowledged and again placed moral judgements on PCs.

We educate them. In fact, we encourage them to use local products. But because, you know, a community is a difficult place. Because you find different people with different status and different levels of education. So, for this reason, you find that mothers, they'll hear from the neighbour saying 'Ah, me, I want custard. Me, I want cerelac. Me, I can't manage. What should I do?'. So if they see that the other one is cooking something different, they start gossiping about it. So to avoid all those, they try to find [food] to suit the neighbours' status. (Participant 44)

Wider economic conditions

Health care providers. Although HCPs and PCs disagreed about the significance of household finances in causing child undernutrition in their specific communities, HCPs did conceptualise economic precarity as a significant driver of child undernutrition, both locally and nationally. However, this was framed as impacting health care rather than at the family level on feeding practices. They stated that national poverty impacted HCPs' ability to access hard to reach populations and deliver

health education services. Due to limited hospital funds, HCPs were unable to conduct regular growth monitoring and promotion in hard-to-reach communities.

You want to go to some places, very far, like rural areas where you can go and do an outreach. But when you don't have transport, you normally have a challenge. So it's like those children are cut off. (Participant 47)

Furthermore, HCPs frequently mentioned that they 'have not done cookery demonstrations for a few months due to finances' (Participant 48). HCPs believed that limited funding at the national level impacted their ability to educate PCs about how to improve the quality of the meals children were being fed. HCPs viewed themselves as agents of the state and emphasised economic conditions as a structural factor that impacted their own agency, but not that of PCs.

4 | DISCUSSION

This paper has examined and compared primary caretakers (PCs) and health care providers' (HCPs) perceptions of the causes of child undernutrition in Lusaka district, Zambia. Our findings reveal that PCs and HCPs have largely divergent 'explanatory models' (Kleinman et al., 1978) of child undernutrition and, crucially, that those of HCPs do not encompass the sociocultural factors that are both detailed in the UNICEF conceptual framework and highlighted by PCs in this study. PCs conceptualised child undernutrition as occurring primarily when children are not fed an adequate *quantity* of food, whereas HCPs stressed the significance of the *quality* of food over the quantity. Although each group perceived child undernutrition differently, PCs' emphasis on the quantity of food may be in reference to an adequate quantity of food of adequate *quality*, highlighting implicit similarities between both groups. Additionally, critically, HCPs and PCs had divergent perceptions of parental agency. In differently conceptualising undernutrition and PCs' ability to prevent it, these models underpin different attributions of causality, and thus opportunities for intervention, between the two groups.

To date, there has been limited comparison of explanatory models of child undernutrition among key populations with the largest direct impact on child well-being. Existing studies have only explored PCs' explanatory models of child undernutrition (Bilal et al., 2014; Charlton et al., 2009; Kismul et al., 2015; Nankumbi & Muliira, 2015) largely excluding the perspectives of other key stakeholders such as HCPs.

Our study goes beyond previous research by exploring disconnects between HCPs and PCs' explanatory models of child undernutrition, and the attributions of causality included in these models. In a different context, Kleinman et al. (1978) illustrated that divergent explanatory models among PCs and HCPs have implications for the quality of care received, health-seeking behaviours, and preventative measures implemented in households. This is reflected in the findings of our study: that PCs differently conceptualised child undernutrition led them to perceive certain health information as not reflective of

the local context, to not always seek out health care services from HCPs, and to continue to practise cooking and feeding practices discouraged by HCPs. Understanding disconnects in explanatory models could therefore improve communication between HCPs and PCs and could be used to improve the quality of services provided and modify interventions to address both known and perceived causes of childhood undernutrition (Ahern et al., 2013; Awan et al., 2017).

Importantly, while each group perceived child undernutrition differently, there was an overlap in their conceptualisations of undernutrition, which neither of them recognised or acknowledged. In some instances, PCs' emphasis on the *quantity* of food a child ate could be reflective of a perception among PCs that children were not eating an adequate quantity of food that PCs perceived to be of good *quality*, revealing an implicit similarity in both groups' conceptualisations of undernutrition. Notably, PCs' conceptualisations of child undernutrition were reflective of how HCPs explained undernutrition during nutrition education. However, HCPs conceptualised undernutrition differently than they explained it, indicating an important disconnect. In spite of this implicit similarity, many PCs did not explicitly highlight distinctions between food they perceived as good or bad when discussing the quantity of food. They focused largely on ensuring that the children ate an adequate quantity of food.

Each groups' conceptualisation of undernutrition consequently informed how they attributed causality. We identified six perceived causes of childhood undernutrition. PCs stressed structural factors that they perceived as limiting their agency and HCPs stressed individual factors in which they perceived PCs as having more agency than they acknowledged.

Structural factors are known to be determinants of childhood undernutrition (Akombi et al., 2017). In our study, while HCPs perceived parental agency as independent of structural factors, PCs perceived parental agency as situated in and constrained by structural factors. This is reflective of Giddens' (1984) conceptualisation of structural factors—factors that individuals perceive as modifying agency—either limiting or amplifying it. This notion of constraint ran through PCs' identification of factors that they perceived as modifying their parental agency—child food preferences, child health, and household finances.

In addition to financial and child dependent structural constraints highlighted by PCs, our data revealed social constraints that PCs perceived as limiting their agency. While individuals may have agency, there are socially bound practices that they may not act against due to existing power dynamics and perceived social repercussions (Neuman, 2019). In our dataset, HCPs highlighted a perception among PCs that young children should not eat meat because it was not socially acceptable to cook meat into an age-appropriate texture, illustrating social restrictions on parental agency.

Galtung's (1969) conceptualisation of structural violence is useful here in allowing us to further distinguish between structural factors that amplify agency and factors that limit agency. The limitation of parental agency, as opposed to the amplification of it, is reflective of the concept of structural violence and how this may weave through

seemingly individual, or even intimate, experiences, and practices such as feeding and childcare (Brady & Burton, 2016). Within our dataset, the embodiment of structural violence was evidenced in how PCs' narratives elucidated them to operate in the context of limited finances, children's food preferences, and chronic poor child health, or, what Berlant (2006) has called in a different context, within 'compromised conditions of possibility'.

First, HCPs detailed that PCs with limited household finances expressed a desire to feed their children food that they associated with higher socio-economic status. Abbots (2017) has explored the association between food and social status: noting how the classification of food can be used to distinguish between socio-economic groups and that individuals of lower socio-economic status aspire to replicate feeding practices associated with higher socio-economic status. Expanding on the earlier discussion of social constraints, it may be that such practices were rooted in PCs' desire for their households not to be viewed as 'other'. Given the existence of moral discussions surrounding food and feeding practices, and in an attempt to avoid judgement, PCs may be inclined to continue feeding practices which are not recommended by HCPs.

Second, PCs frequently described their parental agency as entangled with that of their children, with parental agency mapped through that of the child, which was seen in narratives of child food preferences. Yet, what also emerged within these accounts was a sense that PCs actively minimised their own agency and prioritised that of their children, as a form of care. Building on the concept of aspirational feeding in poverty, feeding children junk food can also be seen as part of a framework of caring for children and providing them comfort, especially in difficult economic contexts (Zivkovic et al., 2015). Within a different context, families of lower socio-economic status in high-income countries have discussed food and feeding as positive experiences and memories in the midst of the difficulties of poverty (Neuman et al., 2021). Additionally, junk food was referenced as a treat within this context (Neuman et al., 2021). This is reflective of the idea that food and feeding are more than just nourishment for the body. Sociocultural analyses have widely described food's ability to symbolise shared ideas and feelings, and feeding as a social activity through which individuals connect (Barthes, 1961; Douglas, 2019; Mintz & Du Bois, 2002; Williams-Forsen, 2019). This conceptualisation of food emerged from a study in Zambia that found that parents displayed affection for their children through feeding (Brudevold-Newman et al., 2018).

Third, in some instances where PCs had attempted to address undernutrition in their children but to no avail, PCs perceived a child's body as having agency of its own, either through seemingly embodied characteristics or through ill health. This conceptualisation had the impact of leading PCs to no longer attempt to cure or prevent undernutrition. Flax et al. (2016) revealed a similar finding in Malawi, where child height was perceived by PCs as unmodifiable by parental action.

In order to address PCs' perceptions of limited or no parental agency, it could be helpful to strengthen the provision of tailored one-to-one nutrition education. This would assist PCs in addressing social, cultural, and economic constraints and could increase the likelihood of

behaviour changes required to prevent child undernutrition. A pilot study conducted in Ndola, Zambia, observed a statistically significant increase in dietary diversity, meal frequency, and the intake of animal protein following the provision of tailored one-to-one nutrition counselling (Moramarco et al., 2017, 2019).

Additionally, it is important to address wider economic constraints on PCs. Specifically, there is a need for a systematic national distribution of supplementary foods to younger children. Where social protection schemes (Arruda & Dubois, 2018) are currently unable to access vulnerable populations (Zambia Ministry of Community Development, 2014), households experiencing household food insecurity may require access to supplementary food. A pilot study providing high-energy protein supplements in Ndola, Zambia, found significant improvements to child growth and health (Moramarco et al., 2019).

In contrast to PCs' conceptualisations, HCPs perceived PCs as having more agency than they themselves acknowledged. While HCPs were aware of the wider structural factors influencing child feeding, they emphasised PCs' responsibility to ensure good child health. Within this framework, HCPs acted as agents of the state—responsible for distributing health knowledge. As such, HCPs minimised the impact of structural factors on PCs and emphasised moral judgements such as 'improper feeding' under the assumption that PCs had received the necessary information. This is reflective of older paradigms of public health, which have since been criticised, that assume rational behaviour once individuals receive full information (Banerjee & Duflo, 2012). In practice, human behaviour is complex and dependent on an array of factors such as social networks, social status and norms, and mental models—how we perceive people, places, or things (World Bank, 2015).

Crucially, HCPs only recognised structural factors, such as wider economic conditions, if they impacted HCPs' ability to carry out their job. This highlights that HCPs identify primarily as agents of the state rather than members of their respective communities. Although many HCPs live in the communities they cater to and may follow social norms, they identify themselves as outsiders—minimising the perceived plight of their community members and highlighting individual factors as drivers of child undernutrition. Studies have shown that HCPs' personal values and/or beliefs may impact their professional performance (Dieleman & Harnmeijer, 2006). This was demonstrated in our findings as HCPs emphasised moral judgements and perceived the appropriateness of health education differently than PCs.

Importantly, although local nutrition policies and IYCF training guidelines for HCPs incorporate a biosocial approach to child undernutrition, this is not reflected either in HCPs' conceptualisations of child undernutrition or the nutrition services provided. To ensure that HCPs are providing nutrition services that are contextually appropriate, it would be beneficial to provide HCPs with additional training that promotes the biosocial approach, as well as tailored training about the local context in which PCs operate. This could reduce moral judgements of PCs, improve the quality of care provided, and further improve household implementation of recommended IYCF practices.

In addition to the moral judgements made by HCPs, and in spite of the wider contrasts between HCPs and PCs' conceptualisations of causality, PCs also made moral judgements about mothers. HCPs and PCs both identified 'inadequate mothering' as a determinant of child undernutrition. This reveals the gendered nature of child undernutrition and the importance of feminist theory in understanding explanatory models of child undernutrition. Globally, within many households, child feeding and health are viewed as the responsibility of mothers (DeVault, 1994; Van Esterik, 2018). As such, when inadequate feeding or health results in child undernutrition, mothers are usually blamed. HCPs and PCs both identified 'laziness' and misplaced priorities as perceived causes of 'inadequate mothering'—crucially in others and not themselves. 'Laziness' was used to describe mothers who were viewed as choosing not to practice socially acceptable forms of mothering, which involved embracing motherhood as one's primary identity and responsibility.

The aggregate of factors that were perceived as limiting mothers' ability to mother 'adequately' resonate with the structural contexts and violence that compromise agency, as noted above. The perception, among HCPs and PCs, of some forms of mothering as 'inadequate' does not account for the fact that socially acceptable forms of mothering, such as stay-at-home mothering with minimal assistance, are now less accessible due to the impact of wider structural factors such as poverty. This highlights a need to address the impact of economic constraints on both individual households and the functioning of health care facilities.

4.1 | Strengths and limitations

The findings of this study are limited by the sample population and sampling strategy. Although we sampled a small number of HCPs, their perceptions overlapped, suggesting that data saturation was achieved. However, it remains possible that our study has not captured the entirety of perceived causes of child undernutrition among PCs and HCPs. Specifically, our sampling strategy limited study participants to PCs who attended a health care facility, and thus did not access the voices of PCs who could or did not access this health care intervention. To mitigate this limitation, we identified study participants from the three lowest levels of health care facilities. Furthermore, we confirmed that under-five clinic attendance was relatively high. However, future research should purposively sample hard to reach populations.

Despite the above limitations, a strength of our study is its design. First, it enabled us to explore both PCs and HCPs' perceived causes of child undernutrition, thereby allowing for thorough comparisons. Second, our use of semistructured interviews enabled focused questioning whilst also giving participants room to discuss topics that they themselves viewed as important. Finally, conducting interviews in local languages improved participants' comfortability and ease of expression, further increasing the richness of the data.

Although the objective of this study was achieved, our findings highlight opportunities for additional research. First, although it was

beyond the scope of this study, future studies should examine in additional detail PCs' perceptions about breastfeeding practices in children above 6 months of age and whether, in addition to the factors detailed in this paper, PCs perceive breastfeeding practices as impacting childhood undernutrition. Second, future research should go beyond the findings of this study to examine in more depth PCs' perceptions about their ability to parent and make decisions that ensure adequate nutrition in their children.

5 | CONCLUSION

Our study found that PCs and HCPs in Lusaka district, Zambia, conceptualised child undernutrition and parental agency differently, and consequently, largely identified differing perceived causes for child undernutrition. This has implications for the effectiveness of policy and practice to address childhood undernutrition in Zambia and similar LMIC settings. In order to accelerate the reduction of childhood undernutrition in Zambia, our findings underscore the importance of tailored one-to-one nutrition education and addressing the wider economic constraints on both HCPs and PCs.

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

CONTRIBUTIONS

NL and AL designed the study. NL, with the assistance of SK, conducted the interviews. NL analysed the data and drafted the manuscript, with input from AL. All authors critically reviewed the manuscript.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available upon request from the corresponding author.

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