

BMJ Open Influence of cultural beliefs and parental feeding practices on obesity among primary schoolchildren aged 6–12 in Ghana: a qualitative study

Tutuwaa Baffo Ewusie ^{1,2}, Helen Coulthard ³, Maxine Sharps ³,
Bertha Ochieng ³

To cite: Ewusie TB, Coulthard H, Sharps M, *et al*. Influence of cultural beliefs and parental feeding practices on obesity among primary schoolchildren aged 6–12 in Ghana: a qualitative study. *BMJ Open* 2025;**15**:e087160. doi:10.1136/bmjopen-2024-087160

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<https://doi.org/10.1136/bmjopen-2024-087160>).

Received 02 April 2024
Accepted 04 April 2025



© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ Group.

¹Social Science and Nursing, Solent University–East Park Terrace Campus, Southampton, UK

²Health and Life Sciences, De Montfort University Leicester, Leicester, UK

³De Montfort University, Leicester, UK

Correspondence to

Dr Tutuwaa Baffo Ewusie;
tutu.ewusie@solent.ac.uk

ABSTRACT

Childhood obesity has become a global public health challenge and as such has attracted worldwide attention due to its negative impact on children's health. Despite its diverse determinants, there is a paucity of information on cultural beliefs and parental feeding practices related to childhood obesity in Ghana. This study aimed to explore the influence of cultural beliefs and parental feeding practices on obesity among schoolchildren in Ghana.

Background Childhood obesity is a global public health concern, drawing widespread attention for its negative impact on children's health. While the determinants are multifaceted, limited information exists on the impact of cultural beliefs and parental feeding practices in the context of childhood obesity in Ghana. The primary objective of this exploratory study was to investigate the influence of cultural beliefs and parental feeding practices on obesity among schoolchildren in Ghana.

Method Data for the study were collected through an online interview and focus group discussion from a purposively sampled 60 respondents. An audio recording device was used to compile information shared with respondents during the interview and focus group discussion, both held remotely over the internet. Following Braun and Clarke's procedure for analysing data, audio-recorded information was transcribed verbatim using Microsoft Word. Vital information to address research questions was assigned codes for collation. Similar codes were collated to form subthemes and major themes which aligned with the Attride-Stirling transcription approach of thematic analysis.

Findings Four themes emerged from data analysis: parental beliefs and perception of weight and feeding practices; evolving dietary practices; the impact of westernisation and socioeconomic status; and lifestyle at home and obesogenic environments. The cultural inclination towards considering obesity as a sign of a 'well-fed child' was evident, and traditional feeding practices were found inadequate, necessitating supplementation with modern approaches. Additionally, factors such as digital media, limited playing space and sedentary behaviours facilitated by transportation to school and easy access to electronic devices contributed to obesity among schoolchildren.

Conclusion While parents actively promoted mixed food diets, this often conflicted with nutritional needs. Parents

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The use of the qualitative data and data analysis permits researchers to appreciate the key elements of the study (cultural beliefs, parental feeding practices and the feeding of children aged 6–12 years) from a sociocultural perspective.
- ⇒ The detailed analysis of the interplay between these key elements of the study and how it impacts the propensity of school-going children aged 6–12 to become obese.
- ⇒ In the context of the limitations of the study, the study being solely qualitative implied an inability to visualise the relationship between the cultural elements and parental feeding practices.
- ⇒ Again, due to the COVID-19 pandemic restrictions at the time of the study, patient and public involvement was not employed in the design of the question or the data collection instruments.
- ⇒ Furthermore, study participants may demonstrate significant biases which could impact the objectivity of the study findings, which may affect generalisability in other geographical areas.

also inadvertently encouraged sedentary behaviours hindering physical activity and contributing to weight gain among children. The study highlighted the challenges posed by cultural beliefs on body image and modern influences, necessitating a comprehensive understanding to formulate effective interventions to address childhood obesity in the Ghanaian context.

INTRODUCTION

The escalating prevalence of childhood obesity is now a global public health concern. Since its emergence as a topic within the public health discourse, numerous studies have investigated childhood obesity, revealing a complex interplay of factors contributing to its prevalence among children.¹ There has been a significant increase in childhood overweight/obesity in Africa. For example, in 2019, 6.8% of children in Cameroon were either obese or overweight,² 14.8% of schoolchildren in

Nigeria were overweight,³ 19% of children were obese/overweight in Ghana⁴ and a documented 21% of childhood overweight/obesity was in Kenya in 2022.⁵ The literature has identified several key factors contributing to this phenomenon among children, including changes in metabolism,⁶ stunted growth,⁷ physical inactivity and issues relating to genetics and epigenetic mechanisms.¹ Paradoxically, the perception of increased body size as an indicator of well-being and health represents a potential cultural influence on obesity,⁸ particularly in Ghana. This cultural influence may additionally impact child feeding practices by parents. Currently in Ghana, the prevailing trend is with parents associating their wards' physical appearance to their social status.⁹ Thus, they tend to feed their children Ghanaian meals which are calorie dense. This has contributed to the growing rates of childhood obesity in the country.

Despite the implementation of various interventions, such as family-based and community-based interventions^{10–11} and school-based interventions,^{12–14} to address childhood obesity, empirical studies highlight the persisting risk of childhood obesity. This risk, exacerbated by the current environment conducive to childhood obesity, increases the likelihood of becoming obese as adults and developing associated cardiovascular diseases and psychological disorders.^{1–15–19} According to Muthuri *et al*,²⁰ childhood obesity poses a significant threat to healthcare resources, particularly in situations where proactive measures are not taken to address the prevalence of childhood obesity and provide support for overweight children. The ongoing negative influence on the health of children underscores the urgency for comprehensive strategies to mitigate childhood obesity, safeguarding both their present and future well-being.

Existing literature in Ghana indicates that children's eating behaviours are established early in their development and persist through to adulthood.²¹ Children residing with their parents and attending primary schools tend to experience numerous feeding approaches influenced by the prevailing cultural norms and socially accepted practices in Ghanaian society. For example, it is common for Ghanaian parents to provide their children with 'feeding fees' for purchasing their preferred meals while in school.²² Even when schools offer meals or parents prepare food, this money is frequently spent on high-calorie and nutrient-poor foods, which they find attractive because of their trait of 'food fussiness'.²² Moreover, social perceptions of body size as an indicator of children's health status can influence the child feeding practices, contributing to the obesity of primary schoolchildren in Ghana.²³ This cultural influence, coupled with the financial autonomy granted to children for purchasing meals, further shapes their dietary choices and potentially contributes to the prevalence of unhealthy eating habits and childhood obesity. Understanding these sociocultural dynamics is crucial for formulating effective interventions aimed at promoting healthier eating habits

among Ghanaian primary schoolchildren and addressing the broader issue of childhood obesity.

The Ghana Demographic Health Survey (2015) reports that 3% of children below the ages of 5 years are classified as overweight. However, existing intervention measures, such as exclusive breastfeeding, complementary feeding and micronutrient supplementation, primarily target the issue of stunting and underweight in this age group rather than addressing obesity across various developmental stages.²³ Limited evidence exists regarding the frequency and associated factors contributing to obesity among primary schoolchildren aged 6–12 years.^{24–28} In addition, interventions such as the Ghana School Feeding Program, designed to enhance food security among children of school age, have not adequately addressed nutritional needs of children, potentially leading to unintended consequences.²⁹ By qualitatively examining the cultural factors surrounding the feeding practices of Ghanaian school-going children aged 6–12 years and understanding how these factors contribute to obesity can provide tailored knowledge that can contribute to policy improvements and more effective strategies for promoting the health and well-being of Ghanaian primary schoolchildren. Examining the feeding practices of school-going children aged 6–12 years can play a vital role in developing comprehensive intervention strategies to control and prevent the escalating trend of childhood obesity in Ghana. It is against this backdrop that the researchers sought to qualitatively explore the influence of cultural beliefs and parental feeding practices on obesity among primary schoolchildren aged 6–12 years in Ghana.

METHODS AND MATERIALS

Study setting

The study took place in Ghana, a West African country bounded by Burkina Faso to the North, the Gulf of Guinea to the South, Togo to the East and Ivory Coast to the West. Specifically, the sample for this study was drawn from participants residing in the Accra Metropolitan Assembly. The Accra Metropolitan Area is considered the most populous metropolitan assembly in Ghana (over 2.5 million people), with its population constituting more than 42% of the region's population as of the 2010 population census. Since its establishment as a metropolis in 1989, the Accra Metropolitan Assembly has functioned as the regional capital of the Greater Accra Region and the national capital of Ghana. Given that education is a priority area for the local government of the Accra Metropolitan Assembly Area, it has the highest total enrolment in the country, with a figure of 117 739 as of the 2017/2018 academic year and a teacher to pupil ratio of 1:21. The total number of basic schools in the metropolitan area is 508, with 315 being public schools and 193 being private schools. This location was considered ideal for the study as the metropolis houses major urban centres with diverse

populations and is known to have the highest prevalence of childhood obesity.⁴ In relation to this study, the strong network of private and public basic education schools present in the Accra Metropolitan Assembly makes it ideal for researching the impact of culture and parental feeding practices on school-going children aged 6–12 years. Also, its highly urbanised lifestyle, coupled with the presence of numerous public, private and international schools, makes the Accra Metropolitan Area ideal for the study.

Study design

In the current study, an exploratory research design was used. This was considered appropriate because the study sought to explore cultural beliefs and dietary practices affecting childhood obesity. The use of an exploratory study design was deemed appropriate as the phenomenon under examination has not been extensively studied in Ghana. Therefore, examining parents' cultural beliefs and dietary practices through this approach allows researchers to explore more deeply the intricate ways in which cultural beliefs and diverse dietary practices impact childhood obesity in the Ghanaian context.

Sampling size and sampling technique

Using purposive sampling, 20 (n=20) participants were interviewed, including 10 parents and 10 schoolchildren. For the focus group discussion, 40 participants, including 24 parents and 16 schoolchildren, were involved. In total, 60 participants were engaged for both the interview and the focus group discussion. Eligibility for the schoolchildren included attendance at selected primary and junior high schools in the Accra metropolis, following parental consent and assent. The parents were qualified for the study if they were (1) 18 years and above, (2) responsible for the food preparation of the child and (3) consented to participate in the study. The purposive sampling technique facilitated the collection of data from diverse perspectives, offering insights into the extent of childhood obesity in Ghana. This approach aimed to ensure a representative sample, allowing researchers to select participants based on their ability to comprehend the central phenomenon of the study.

Data collection tool and technique

To gather study data from parents and schoolchildren, online in-depth interviews and focus group discussions were conducted online using Microsoft Teams. This online method of data collection was deemed appropriate at the time of data collection as lockdown restrictions by the Government of Ghana due to the COVID-19 pandemic limited in-person contact for data collection purposes. The development of the interview guide and focus group discussion aligned with the study objective. Five main groups were formed for the focus group discussion, with each group comprising eight participants. Three groups were formed for parents and two for schoolchildren. Prior to the data collection, participants were provided

with detailed information about the venue and time for the interviews. The interviewing of the parents took place at their convenience in their respective homes, while the interviewing of the children took place in their respective schools to ensure that this did not interfere with the academic activities of the schoolchildren and prevented the influence of parents on the children's answers to questions. Regarding the focus group discussion, participants were informed about the ideal time and place for a meeting. Children's discussions took place in their respective classrooms, while the parents' focus group discussion took place online. Through both the interview and focus group discussion, participants were given sufficient time to respond to a question. To collect relevant information, inductive probing was used to explain participants' contributions to answer study questions. Both the interview and focus group discussion ended at the point of data saturation where participants had no further information to provide. The focus group discussion for study participants was conducted within 1 hour and 30 min. Similarly, the online interview for parents and children lasted 1 hour and 30 min. Both parents and children were quizzed on their knowledge and opinion of healthy feeding and eating, knowledge of child eating behaviours, children's access to healthy meals both at home and at school, the state of child feeding schedules and children's frequent consumption of fruits and vegetables.

Research ethics

Prior to data collection, explicit consent was sought from all participants involved in the study. To uphold confidentiality and anonymity, each participant was assigned an alphanumeric code during both data collection and analysis phases. The study details were also explained to each of the participants before data collection, with ample opportunities provided for any queries or clarifications. Furthermore, participants were informed that their involvement in the study was entirely voluntary, and they retained the right to withdraw at any stage without any repercussions.

Data analysis

Following the data collection phase, the recorded interviews were manually transcribed and coded on Microsoft Word. The thematic analysis was conducted using the Attride-Stirling's³⁰ approach. This method facilitated the identification of significant information, incorporating saliency analysis in the formation of themes. These themes comprised codes, summarising metaphors, keywords, phrases and transitions that frequently occur in the interview transcripts. Code descriptions were used to explain the codes in simple terms. Drawing from Buetow,³¹ saliency analysis was used to ascertain the importance of codes to interpreting themes using high and moderate saliency rankings.

Patient and public involvement

In conducting this study, a patient and public involvement (PPI) was not included due to the prevalence of the

COVID-19 pandemic and its associated lockdown restrictions. According to Jamal *et al.*³² special situations such as the instance of the COVID-19 pandemic and its rapid progression required expedient research actions which limited the feasibility of a meaningful PPI in empirical research. As such, this study aimed to generate immediate, relevant and actionable insights necessary for informing public health strategies and clinical practices on childhood obesity in the study context; however, it ensured and preserved the safety of people, hence not involving PPI.

FINDINGS

Demographic characteristics

In total, 60 participants took part, comprising 10 (n=10) parents and 10 (n=10) schoolchildren for the interviews, while five focus groups of 24 (n=24) parents and 16 (n=16) primary school-going children aged 6–12 years were recruited into the qualitative survey. Among the parent participants, seven were male while 17 were female. 12 (n=12) had tertiary level education, while seven (n=7) and five (n=5) had secondary and basic level education, respectively. In terms of age distribution, 15 (n=15) of the parent participants were aged between 30 and 40. Five (n=5) and four (n=4) parent participants, respectively, were aged 41 and above and distributed between ages 20 and 30 years. In the case of the children, five (n=5) of the participants were male, and the other five (n=5) were female (see [table 1](#)).

Themes and subthemes

Accordingly, [table 2](#) illustrates the four main themes and subthemes identified concerning the relationship between cultural influences and parental feeding practices that contribute to obesity among primary schoolchildren. These themes primarily originated from parental cultures but also suggested both direct and indirect influences from external family members. The identified themes are as follows:

1. Parents' beliefs and perception of weight and feeding practices in primary schoolchildren.
2. Food practices and perception of parents and children.
3. Changing dietary practices: the impact of westernisation and socioeconomic status.
4. Lifestyle at home and obesogenic environment.

DISCUSSION

This section of the study elaborates on the identified themes and their corresponding subthemes about the relationship between parental feeding and obesity in primary schoolchildren. The subsequent discussion provides a comprehensive exploration of these, shedding light on the nuances within each theme and connecting the findings to the existing body of literature. As a result of human intuition, the possibility of biased responses from consented parents and schoolchildren cannot be

ruled out. Additionally, social desirability bias could influence participants' responses. Moreover, the contextual and cultural factors specific to Accra and the study population may limit the generalisability of the results.

Parents' beliefs and perception of weight and feeding practices in primary schoolchildren

The theme was analysed using the codes '*Perception of beauty*' and '*A well-fed child*'. These codes were used to examine how parents perceive the ideal weight for children aged 6–12 years. Specifically, they revealed that parents consider children with some weight gain to be more appealing than those with a lean appearance. The '*Perception of beauty*' code highlighted the cultural inclination of parents of primary schoolchildren towards their children to be overweight, even if it results in a more proportional appearance. For example, a parent respondent suggested:

I believe that my child is more attractive when she is heavy than when she is skinny. Preferable, my child should. (P08F, Trader, Mid-30s)

In relation to this, the study by Mhrshahi *et al.*³³ expounds that a nation's prevailing culture holds the potency to influence the general perception of beauty, thereby contributing to elevated rates of overweight and obesity and impeding intervention programmes. According to Aryeetey *et al.*'s²⁷ study on the perceptions of body proportionality and its appropriateness in the Ghanaian context further supports the notion that Ghanaian society accepts weight gain and obese appearance. This suggests that among school-going children aged between 6 and 12, the culture of the Ghanaian society which shapes parental attitudes and behaviours towards child feeding practices often associates a heavy body with being healthy. This could pose problems for public health initiatives aimed at curbing the phenomenon of childhood obesity among schoolchildren, as parents are likely to support and engage in such intervention programmes. Educational programmes which respect such cultural perceptions while at the same time promoting healthy lifestyles could serve as a solution to this situation.

Furthermore, the code '*A Well-Fed Child*' revealed parents' belief that if children are obese, it conveys the impression that they are well taken care of. Insights from the data collection sessions indicated that parents associated the physical appearance of their children with their economic status to society. Consequently, they felt compelled to provide their children with access to foods that could lead to obesity as a way of demonstrating their affluence.

All my children look like that (overweight), and it is because we feed them and take good care of them. (P09F, Nurse, Mid-30s)

Despite the well-intentioned nature of such beliefs, Arcan *et al.*³⁴ argue that in the long term such ideologies may have adverse effects on the physical health of

Table 1 Demographic features of participants for interview and focus group

Adult participants				
Participant No	Age	Sex	Occupation	Participant code
Parents who participated in both interview and focus group discussion				
01	Late 30s	Female	Psychiatrist	P01F
02	Early 30s	Female	Banker	P02F
03	Late 30s	Male	Civil servant	P03M
04	Late 20s	Female	Teacher	P04F
05	Early 30s	Female	Civil servant	P05F
06	Early 30s	Female	Banker	P06F
07	Early 40s	Male	Trader	P07M
08	Early 30s	Female	Trader	P08F
09	Mid-30s	Female	Nurse	P09
10	Mid-30s	Female	Human resource manager	P10F
Parents who participated in FGD only				
11	Early 30s	Male	Teacher	P11M
12	Early 30s	Female	Beautician	P12F
13	Late 20s	Female	Seamstress	P13F
14	Early 40s	Female	Housewife	P14F
15	Early 30s	Female	Shop attendant	P15F
16	Early 40s	Male	Vulcaniser	P16M
17	Early 40s	Female	Shop attendant	P17F
18	Mid-30s	Male	Trader	P18
19	Mid-30s	Female	Policewoman	P19F
20	Early 30s	Female	Immigration officer	P20F
21	Mid-40s	Male	Unemployed	P21M
22	Late 30s	Male	Accountant	P22M
23	Early 30s	Female	Teacher	P23F
24	Early 40s	Female	Housewife	P24F
Child participants				
Participant No	Age	Sex	Level of education	Participant code
Child participants for both interview and FGD				
01	Middle childhood	Male	Lower primary	P01FC01F
02	Middle childhood	Female	Lower primary	P03MC02F
03	Middle childhood	Female	Upper primary	P04FC03F
04	Early adolescence	Male	Junior high school	P06FC04M
05	Middle childhood	Female	Upper primary	P07MC05F
06	Early adolescence	Male	Junior high school	P08FC06M
07	Middle childhood	Male	Upper primary	P09FC07M
08	Middle childhood	Female	Junior high school	P10FC08F
09	Middle childhood	Female	Lower primary	P02FC09M
10	Middle childhood	Female	Lower primary	P05FC10M
Child participants who did FGD only				
11	Middle childhood	Male	Upper primary	P11MC09M
12	Middle childhood	Female	Junior high school	P12FC11F
13	Middle childhood	Female	Lower primary	P15FC06F
14	Middle childhood	Male	Lower primary	P20FC07M

Continued

Table 1 Continued

Child participants				
Participant No	Age	Sex	Level of education	Participant code
15	Middle childhood	Male	Junior high school	P16MC10M
16	Middle childhood	Female	Lower primary	P22MC08F

Source: Field Data Collection, August 2022.
FGD, focus group discussion.

children. The study argues that Ghanaian parents are drawing associations between their economic status and the appearance of their children. This can reinforce beliefs and behaviours which facilitate childhood obesity as parents are likely to strive to meet the societal expectations by overfeeding their children. It is essential that Ghanaian parents are instructed on nutritional education and the health risks their perceptions pose to the growth and development of their children.

Food practices and perception of parents and children

The theme '*Food practices and perception of parents and children*' is explored through the codes '*Preference for Traditional Foods*', '*Substituting Sweets with Fruits*' and '*Parent Perception of School Feeding*'. This theme delves into the opinions of respondents regarding the influence of traditional and modern cultures on food choices for schoolchildren aged 6–12 years. With regard to the preference for traditional foods, parents expressed a preference for feeding their children the foods they were exposed to while growing up in Ghanaian society, intending to demonstrate their cultural heritage. According to a respondent:

In my house like this, we are always eating 'fufu' (a Ghanaian starchy staple), both parents and the children all eat the fufu. That is what we eat where I am from so that is what we like. (P07M, Trader, Early 40s)

In relation to this, authors such as Arcan *et al.*³⁴ advocate for traditional foods as an effective means to promote healthy dietary habits and weight management in children. However, an over-reliance on feeding children with starch-rich foods, as opposed to a balanced meal that includes carbohydrates, proteins, vegetables and other essential minerals, exposes primary schoolchildren to the risk of obesity and its associated complications. The analysis also highlighted parental concerns about the consumption of sweets, deeming it generally unhealthy for children aged 6–12 years. As expressed by a respondent:

No, I do not give them any sweet things at all. When they were young, I used to but now I do not want them to become addicted. It is not good for them. (P04F, Teacher, Late 20s)

In this context, the code '*Substituting Sweets with Fruits and Vegetables*' demonstrated the strict measures parents implemented to restrict children's access to sweets. It was

found that parental disciplinary actions played a crucial role in limiting the school-going children's consumption of sweets. For example, a child respondent indicated:

When I eat a lot of sweets, I will not be allowed to eat any more sweets till after five months have passed by. My parents do not allow me to eat a lot of sweets freely. (P10FC08F, JHS, Middle childhood)

Another child respondent purported:

My parents will beat me because I'm not supposed to eat a lot of sweets. (P04FC03F, Lower primary, Middle childhood)

This suggests that in the Ghanaian context, authority figures such as parents and teachers have a considerable influence on the dietary choices of school-going children. In addition, it is evident that children within the study population are more likely to enjoy positive role modelling when it comes to deciding to consume healthy food. In the context of the social cognitive theory, which suggests that children are likely to adopt the eating behaviours and physical actions of their parents,³⁵ the analysis revealed that most school-going children adhered to the guidance provided by their parents and teachers regarding the consumption of fruits and vegetables rather than sweets. According to a child respondent:

My teachers and parents have been teaching me at home and in school that too much sugar is not good for me. They advise me to eat vegetables and fruits because it is good for my body. It will give me energy. (P09FC07M, Lower primary, Middle childhood)

By implementing such modifications in the environment in which children are raised and the feeding practices to which they are exposed, Birch and Davison³⁶ assert the likelihood of children becoming obese significantly reduced. Furthermore, Wilson *et al.*³⁷ argue that educating children about the benefits of substituting sweets with healthy foods leads to behaviour modifications that are lifelong.

In relation to the code '*Perceptions of Parents on School Feeding*', the analysis revealed mixed reactions from respondents. On the one hand, some parents expressed scepticism about the food preparation methods of school feeding programmes, considering them to be below standard.

Table 2 Themes that emerged from interviews and FGDs

Themes	Codes	Code descriptions	Sample quotations	Frequency	Saliency
Parents' beliefs and perception of weight and feeding practices in primary schoolchildren	Perception of beauty	A child who appears to be overweight is more desirable.	"...because I believe that my child is more attractive when she is heavy than when she is skinny." (Respondent 8, female)	6	High saliency
	A well-fed child	An overweight child symbolises a well-fed and well-cared-for child.	"All my children look like that (overweight), and it is because we feed them and take good care of them." (Respondent 3, male)	6	High saliency
Food practices and perception of parents and children	Preference for traditional foods	Parents feed children more starch than protein because it is perceived as more nutritious and 'filling'.	"Some people will only be feeding their children meat, meat, meat, which is a bad idea... the gari ^a , rice balls ^b and kenkey ^c is healthier [sic]... that is how I was brought up and I am very fine." (Respondent 3, male)	4	High saliency
	Substituting sweets with fruits and vegetables	Parents are replacing the consumption of highly processed and energy-dense foods with wholesome fruits and vegetables.	"My relatives, especially my aunts tell me that too much sugar is not good for me. Rather, I should eat a lot of fruits and vegetables as it will help me grow healthy."	4	High saliency
	Perceptions of parents on school feeding	Parents have superstitious beliefs about school feeding. Also, the availability of school-based programmes aimed at fostering the consumption of healthy food.	"... we opted out of the school feeding because you cannot be too careful. We do not know how healthy the food is or whether someone has bewitched it..." (Respondent 2, female) "In our school, every Friday is dedicated to eating fruits. This has been helpful."	4	High saliency
Changing dietary practices: the impact of westernisation and socioeconomic status	Modern versus traditional feeding	Parents who viewed traditional forms of feeding as unhealthy discarded it for modern feeding styles that were characterised by balanced diets and authoritative feeding.	"... I feed my children a lot of salad so the food I prepare must be able to go with salad. Most local foods do not go well with salad and most of them are too heavy and starchy." (Respondent 5, female)	5	High saliency
	Westernised feeding knowledge	Parents prefer using feeding knowledge and practices from books, reports, magazines and websites.	"I do a lot of research into the feeding of my child... no, my feeding is not remotely informed by my culture but by what I have read and learnt since I became a father." (Respondent 9, female)	7	High saliency
	Accessing health foods	The likely people and places children go to for food.	"My mother and sometimes my father prepare healthy food for me."	4	High saliency

Continued

Table 2 Continued

Themes	Codes	Code descriptions	Sample quotations	Frequency	Saliency
Lifestyle at home and obesogenic environment	Sedentary lifestyle	Most of the student's day is spent in class or at home studying, while a fraction of that time is spent exercising or playing. Also, the use of electronics defines playtime.	"Nowadays all the children know are gadgets and no activity... after school they will have extra classes for hours then by the time they get home, they are exhausted to even be active. So, they are always indoors on their gadgets." (Respondent 9, female)	3	Medium saliency
	Home physical activity environment	Some children do not have friends who live in the neighbourhood or have access to outdoor spaces to encourage an active lifestyle.	"I also blame the way our house is designed—there is little room to play ball and conduct outdoor games, so they are not motivated to be active outside. Funny enough, this is not the Ghanaian way." (Respondent 9, female)	3	Medium saliency

Source: Field Data Collection, August 2022.
FGD, focus group discussion.

We opted out of the school feeding because you cannot be too careful. We do not know how healthy the food is or whether someone has bewitched it. (P05F, Civil servant, Early 30s)

Such opinions were identified to contradict the findings of Schmitt *et al*,³⁸ who argued that school feeding programmes provide children with access to healthy meals without excessive processing. On the other hand, child respondents highlighted how specific practices within their school's feeding programme positively contributed to their health and energy levels.

In our school, every Friday is dedicated to eating fruits. This has been helpful. (P08FC06M, JHS, Early adolescence)

This demonstrated the awareness of the primary school-going children regarding the efforts made by their school to promote healthy weight gain and encourage the habit of consuming nutritious food despite the scepticism of the parents. In effect, schools in Ghana should demonstrate transparency about the food preparation process, feeding times and the content of the menu they serve to children. Also, parents can be engaged in the meal planning process and the monitoring of school nutritional programmes. These strategies can help build trust between the school authorities and parents when it comes to child feeding.

Changing dietary practices: the impact of westernisation and socioeconomic status

The theme '*Changing dietary practices: the impact of westernization and socio-economic status*' was analysed using the codes '*Modern vs traditional feeding*', '*Westernized feeding*

knowledge' and '*Accessing Health foods*'. These codes were employed to compare modern feeding approaches with traditional feeding practices embedded in the Ghanaian culture. The analysis aimed to provide insight into how the Bronfenbrenner model can be applied to explain the development of obesity among school-going children aged 6–12 years in Ghana.

In relation to modern feeding practices, the study revealed that parents who deemed the traditional approach to feeding children as lacking in providing the essential nutrients for proper growth were inclined to complement it with modern feeding practices and knowledge:

Traditionally, children in Ghana are fed using an authoritarian approach. Growing up in such an environment, I thought an accommodating approach could be used to encourage children to eat healthy and balanced meals. I prefer to set my expectation of their nutritional needs whilst incorporating their preferences in the meal. (P05F, Civil servant, Early 30s)

The novel approach adopted by parents to supplement traditional feeding practices with modern knowledge and expertise aligns with study's³⁹ social cognitive theory, which suggests that individuals are more likely to continue with a venture if they perceive it as beneficial and to unlearn actions that are deemed harmful.

Furthermore, parents aim to use this up-to-date knowledge to enhance the health of their children and simultaneously reduce the risk of obesity. Evidence from the analysis indicated that parents actively sought information from various sources to acquire scientific insight into

beneficial feeding practices for children within the specified age range.

I do a lot of research into the feeding of my child. My feeding is not remotely informed by my culture but by what I have read and learned since I became a father. (P09F, Nurse, Mid-30s)

Through the modification of children's eating habits, Bandura⁴⁰ argues that children are more likely to consume healthy and wholesome foods rather than energy-dense options, resulting in a decrease in obesity levels among children in the specified age range. When viewed through study⁴¹ model, it becomes apparent that parents situated at the micro level can leverage various resources, such as researched information, to shape the dietary habits and decisions of their children.

Additionally, Bronfenbrenner's⁴² study concluded that children aged 8–10, living in homes where access to unhealthy food is unrestricted, are five times more likely to develop obesity compared with those in homes with restricted access to unhealthy food. Under the code 'Regulated Eating Schedules', the child respondents emphasised the significance of their home meal plans to their growth. For example, a child respondent reported that their parents ensured their access to three square meals per day:

I eat in the in the morning, I eat at 9:00 and in the afternoon I eat 1:00 and in the evening I eat 6:00. I am also advised to make sure that when I am eating, I do not put the food on the floor, not to talk and to take my time and eat so that the food will satisfy me. (P01FC01F, Lower primary, Middle childhood)

Specifically, in relation to the time taken to eat, a study by Kral *et al*⁴³ advocates for teaching children to eat slowly as a potent family-based strategy for reducing obesity in children. This conclusion stems from a study that applied psychoeducational and behavioural techniques to address rapid eating among 24 children identified as rapid eaters.

According to Cyril *et al*,⁴¹ both mesosystems and exosystems present in a culture, beyond the influence of parents, can contribute to the creation of an environment conducive to the development of obesity in children. In the context of this study, it was identified that the overly formalised nature of parents' working schedules compels them to spend significant amounts of their time in the corporate world, limiting their ability to oversee the well-being of their children. Consequently, parents who participated in the study mentioned resorting to processed obesogenic foods to feed their children at times due to the lack of time to prepare wholesome meals.

At times when I have to prepare their food for school, my husband and I have to rush to work so I either make quick foods like indomine (a popular Nigerian noodle) or give them a lot of snacks for the day, it is not healthy but that is the reality we are faced with. (P06F, Banker, Early 30s)

In addition, the analysis uncovered instances where parents sometimes provide food and engage in force-feeding practices with their children, irrespective of the time and their awareness of the nutritional value of the food being offered to their children.

Sometimes, I have to insist that my child eats at a particular time due to my work schedule or a loss of appetite for food from my child. (P07M, Trader, Early 40s)

According to another respondent:

Usually, we purchase large stocks of snacks to keep the children from going hungry in between meals. We allow them to access these foods, especially in situations where our work schedules. (P10F, HRM, Mid-30s)

These instances align with the findings of Schmitt *et al*,³⁸ which demonstrate a correlation between the practice of non-responsive feeding and obesity in children.

While the study of Schmitt *et al*³⁸ suggests that children participating in family mealtimes can provide a protective influence against obesity by consuming less saturated fat and more fibre-dense traditional meals, the analysis identified that, frequently, extended family members exert pressure on parents to include processed foods in their children's meals and often feed them such foods in the absence of the parents. This contributes to the development of obesity in children aged 6–12.

Their grandmother will also go behind my back to feed the child heavy foods to make them gain weight. Sometimes I do not even know what the food is. (P09M, Nurse, Mid-30s)

Lifestyle at home and obesogenic environment

'Lifestyle at Home and Obesogenic Environment' emerged as a theme from the analysis of codes such as 'Sedentary Lifestyle', which delved into the activities of primary school-going children both in and out of school, and the 'Home Physical Activity Environment', which detailed the impact of digital media and technologies, lack of available playing spaces and socialisation opportunities that resulted in a sedentary behaviour among the school-going children aged 6–12 years. Regarding the 'Sedentary Lifestyle' code, the analysis revealed that mode of transportation to school and easy access to electronic devices contributed to the development of obesity in primary school-going children aged between 6 and 12 years in Ghana. While walking and the use of private cars to school were the main modes of transport for these children, the analysis identified a preference for the latter among parents. For example, a parent indicated:

We often make transportation arrangements for the children to be conveyed to school due to safety and distance. (P07M, Trader, Early 40s)

Another parent respondent stated:

My children do not walk to school, but I see others that do. (P04M, Civil servant, Late 30s)

In essence, relying solely on private vehicular transportation limits the opportunities for children to engage in physical activities like walking, which helps in regulating body fat.⁴⁴ In addition, these children may miss out on the health-promoting benefits of integrated public transportation systems that physical activities such as walking and cycling.⁴⁵ Furthermore, responses from parents indicated that children aged 6–12 defined their playtime by spending an unhealthy amount of time on electronic devices or allocating most of their time in the classroom or indoor activities, leaving little room for exercising and engaging in physical play.

The children are always on their PlayStation and phone. That is how we raised them, so it is hard for them to stop at this age. (P07M, Trader, Early 40s)

Allowing children most of their time with electronic devices, as argued by King and Jacobson,⁴⁶ is seen by parents as a way to ensure their children's safety from the weather and other social vices. However, this limitation in physical activity increases the likelihood of children developing obesity in the long run. This is evident from the case of Latino and Hispanic youth who spent more than 2 hours on screens, had less physical activity according to health guidelines and consumed high-calorie meals, putting them at risk of developing obesity and related health complications.^{46 47}

The code '*Home Physical Activity Environment*' highlighted how the arrangement of the home environment influenced engagements in physical exercises. The analysis revealed that most school-going children lacked access to indoor and outdoor physical spaces where they could participate in physical activity at home and in their neighbourhoods:

I also blame the way our house is designed – there is little room to play ball and conduct outdoor games, so they are not motivated to be active outside. Funny enough, this is not the Ghanaian way. (P11M, Teacher, Early 30s).

This situation eliminates the reported 42% odds of children reducing obesity, as mentioned by King and Jacobson.⁴⁶ Specifically, for girls, the analysis revealed that prevailing customary beliefs within various households and society at large contributed to the development of obesity. Parents tended to limit the participation of female children in physically demanding activities because such activities were seen as not being 'lady-like.'

I prefer that my female child learns to partake in feminine activities like learning how to cook and clean. Even if; she is to engage in any physically demanding activity, it should be mild and not the type that results in her getting sweaty. (P07M, Trader, Early 40s)

Such suppositions align with the findings of studies conducted in Somalia and Latin America.³⁴ In the former, women were compelled to wear apparel that restricted their participation in physical activities, while in the latter country, women were confined to home caregiving roles, hindering their engagement in physical activities that could help regulate the accumulation of body fat. By extrapolation, although obesity may occur among school-going children aged 6–12 years, females within this age group are more susceptible to developing obesity.

CONCLUSION

In conclusion, the study uncovered that cultural influences and parental feeding practices to which primary school-going children aged 6–12 years are exposed can either shield them from early-onset obesity or expedite its development along with associated risk factors. In relation to parental beliefs and perception of weight, the study revealed that in Ghanaian society, parents generally prefer children to have some weight, be it healthy weight or being obese, and disapprove of children looking 'lean'. Additionally, regardless of the nutritional value of the food served, Ghanaian parents tend to offer their children familiar foods that they believe contribute to their growth. The study also emphasised the importance of discipline in controlling the consumption of sweets and processed foods, leading Ghanaian parents to implement strict measures to regulate their children's intake. For the school feeding programme, while it promoted healthy eating habits such as regular fruit consumption, the analysis suggested that Ghanaian parents are likely to be sceptical about whether the programme's food adequately meets their children's nutritional needs.

In exploring changing dietary practices, the study highlighted how Ghanaian parents were making efforts to blend research information on children's nutrition with traditional practices to foster a balanced approach to feeding. Despite these efforts, parents struggled to ensure their children had access to food at regular intervals. The study also revealed that electronic devices and children's schedules were designed to keep them occupied indoors rather than be seen playing outside with their peers. Additionally, most homes lacked both physical indoor and outdoor spaces for children to engage in healthy physical activities, which are crucial for regulating their weight. From a policy perspective, the findings suggest the importance of implementing strategies that promote healthier dietary habits among children. This could involve educational campaigns to raise awareness about the potential health risks associated with excessive consumption of sweetened foods and the benefits of consuming healthier alternatives. Additionally, efforts should be made to improve the availability and affordability of nutritious food options, particularly in school settings. Future studies can incorporate qualitative research methods, such as focus groups or in-depth interviews, to provide deeper insights

into the sociocultural factors, attitudes and perceptions that shape dietary choices among children.

X Tutuwaa Baffo Ewusie @fremahb and Maxine Sharps @maxinesharps

Acknowledgements We are most grateful to the respondents who voluntarily participated in the study. We also wish to express our sincerest gratitude to everyone who contributed to the success of the study in diverse ways.

Contributors TBE and BO conceptualised the study topic, drafted the study introduction and developed the methodology. TBE assembled the study data. TBE and BO analysed the data collected. TBE, BO and HC discussed the study findings after analysing the data and drafted the remaining portion of the manuscript. MS, HC and BO reviewed the manuscript. All authors read and proofread the final manuscript, which was accepted for submission. TBE is the guarantor and takes full responsibility for the study's work, has access to the data and makes publication decisions, ensuring the study's integrity.

Funding The study was funded by the Ghana Scholarship Secretariat.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Consent obtained from parent(s)/guardian(s)

Ethics approval This study involves human participants and was approved by De Montfort University (Ref: 3816 and 479782), the 37 Military Hospital (Institutional Review Board Approval No 37MH-IRB/PhD/IPN/482/2021) and Ghana Education Service (GES/HQTS/PA/21/0042). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data sharing not applicable as no datasets generated and/or analysed for this study. Data for the study would be available at reasonable requests from the investigators.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iDs

Tutuwaa Baffo Ewusie <http://orcid.org/0000-0002-9450-6760>

Helen Coulthard <http://orcid.org/0000-0001-7667-9564>

Maxine Sharps <http://orcid.org/0000-0003-4703-8121>

Bertha Ochieng <http://orcid.org/0000-0002-4406-1388>

REFERENCES

- 1 Afrifa-Anane E, Agyemang C, Codjoe SNA, *et al*. The association of physical activity, body mass index and the blood pressure levels among urban poor youth in Accra, Ghana. *BMC Public Health* 2015;15:269.
- 2 Noutakdie Tochie J, Mbonda A, Fonkwo V, *et al*. Childhood Overweight and Obesity in Sub-Saharan Africa: Current Definition, Prevalence and Risk Factors. *Acta Scie Nutr* 2019;3:133–6.
- 3 Otitoola O, Oldewage-Theron W, Egal A. Prevalence of overweight and obesity among selected schoolchildren and adolescents in Cofimvaba, South Africa. *SAJCN* 2021;34:97–102.
- 4 Akowuah PK, Kobia-Acquah E. Childhood Obesity and Overweight in Ghana: A Systematic Review and Meta-Analysis. *J Nutr Metab* 2020;2020:1907416.
- 5 Awuor Gewa C, Christine Onyango A, Okoyo Opiyo R, *et al*. Association between Primary School Children's Unhealthy Behaviors and Overweight/Obesity: A Cross-Sectional Analysis in Urban Kenya. *J Pediatr Perinatol Child Health* 2022;06:9–28.
- 6 Mantovani RM, Rios DRA, Moura LCR, *et al*. Childhood obesity: evidence of an association between plasminogen activator inhibitor-1 levels and visceral adiposity. *J Pediatr Endocrinol Metab* 2011;24:361–7.
- 7 Popkin BM, Richards MK, Montiero CA. Stunting is associated with overweight in children of four nations that are undergoing the nutrition transition. *J Nutr* 1996;126:3009–16.
- 8 Teevale T. Body image and its relation to obesity for Pacific minority ethnic groups in New Zealand: a critical analysis. *PacHealth Dialog* 2011;17:33–53.
- 9 Aryeetey R, Ansong J. Childhood obesity in urban Ghana: Evidence from a cross-sectional survey. *BMC Public Health* 2019;19:1–10.
- 10 Ash T, Agaronov A, Young TL, *et al*. Family-based childhood obesity prevention interventions: a systematic review and quantitative content analysis. *Int J Behav Nutr Phys Act* 2017;14:113.
- 11 Davison KK, Jurkowski JM, Li K, *et al*. A childhood obesity intervention developed by families for families: results from a pilot study. *Int J Behav Nutr Phys Act* 2013;10:3.
- 12 Heelan KA, Bartee RT, Nihiser A, *et al*. Healthier School Environment Leads to Decreases in Childhood Obesity: The Kearney Nebraska Story. *Child Obes* 2015;11:600–7.
- 13 Manios Y, Androustos O, Katsarou C, *et al*. Relationship between food insecurity, child weight status, and parent-reported child eating and snacking behaviors.
- 14 Sharma M. Dietary education in school-based childhood obesity prevention programs. *Adv Nutr* 2011;2:207S–16S.
- 15 Adom T, Puoane T, De Villiers A, *et al*. Prevalence of obesity and overweight in African learners: a protocol for systematic review and meta-analysis. *BMJ Open* 2017;7:e013538.
- 16 Carcani M, Carcani S, Keci M, *et al*. Prevalence of childhood overweight and obesity in Durres. *obesity facts*. 2014.
- 17 Moraes LI de, Nicola TC, Jesus JSA de, *et al*. High Blood Pressure in Children and its Correlation with Three Definitions of Obesity in Childhood. *Arq Bras Cardiol* 2013;102:175–80.
- 18 Gupta N, Goel K, Shah P, *et al*. Childhood obesity in developing countries: epidemiology, determinants, and prevention. *Endocr Rev* 2012;33:48–70.
- 19 Hewitt-Taylor J, McBride J. Overweight and obesity in children: a review of the literature. 2004.
- 20 Muthuri SK, Francis CE, Wachira L-JM, *et al*. Evidence of an overweight/obesity transition among school-aged children and youth in Sub-Saharan Africa: a systematic review. *PLoS ONE* 2014;9:e92846.
- 21 Waters E, Swinburn BA, Seidell JC, *et al*. *Preventing childhood obesity: evidence policy and practice*. 2010.
- 22 Owusu-Addo Ebenezer. Perceived impact of Ghana's conditional cash transfer on child health. *Health Promot Int* 2016;31:33–43.
- 23 Frempong RB, Annim SK. Dietary diversity and child malnutrition in Ghana. *Heliyon* 2017;3:e00298.
- 24 Addo P, Adua E, Harrison OA, *et al*. School-Based Nutrition Education Intervention Improves Nutrition Knowledge and Lipid Profile among Overweight/Obese Children. *GJHS* 2017;9:109.
- 25 Agbozo F, Atito P, Abubakari A. Malnutrition and associated factors in children: a comparative study between public and private schools in Hohoe Municipality, Ghana. *BMC Nutr* 2016;2:32.
- 26 Ogom Alangea D, Aryeetey RN, Gray HL, *et al*. Dietary patterns and associated risk factors among school age children in urban Ghana. *BMC Nutr* 2018;4:1–9.
- 27 Aryeetey R, Lartey A, Marquis GS, *et al*. Prevalence and predictors of overweight and obesity among school-aged children in urban Ghana. *BMC Obes* 2017;4:38.
- 28 Steiner-Asiedu M, Addo P, Bediako-Amoa B, *et al*. Lifestyle and Nutrition Profile of Overweight and Obese School Children in the Ga-East District of Ghana. *Asian J Med Sci* 2012;4:99–104.
- 29 Abdul-Rahman L, Agble R. Review of school health and nutrition interventions and mapping of existing programmes in Ghana. 2012.
- 30 Attride-Stirling J. Thematic networks: an analytic tool for qualitative research. *Qual Res* 2001;1:385–405.
- 31 Buetow S. Thematic Analysis and Its Reconceptualization as 'Saliency Analysis'. *J Health Serv Res Policy* 2010;15:123–5.
- 32 Jamal Z, Perkins A, Allen C, *et al*. Patient and public involvement prior to trial initiation: lessons learnt for rapid partnership in the COVID-19 era. *Res Involv Engagem* 2021;7:13.
- 33 Mhrshahi S, Drayton BA, Bauman AE, *et al*. Associations between childhood overweight, obesity, abdominal obesity and obesogenic behaviors and practices in Australian homes. *BMC Public Health* 2017;18:44.
- 34 Arcan C, Culhane-Pera KA, Pergament S, *et al*. Somali, Latino and Hmong parents' perceptions and approaches about raising healthy-weight children: a community-based participatory research study. *Public Health Nutr* 2018;21:1079–93.
- 35 Martinez SM, Rhee KE, Blanco E, *et al*. Latino mothers' beliefs about child weight and family health. *Public Health Nutr* 2017;20:1099–106.
- 36 Birch LL, Davison KK. Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatr Clin North Am* 2001;48:893–907.



- 37 Wilson TA, Liu Y, Adolph AL, *et al.* Behavior Modification of Diet and Parent Feeding Practices in a Community- Vs Primary Care-Centered Intervention for Childhood Obesity. *J Nutr Educ Behav* 2019;51:150–61.
- 38 Schmitt SA, Bryant LM, Korucu I, *et al.* The effects of a nutrition education curriculum on improving young children's fruit and vegetable preferences and nutrition and health knowledge. *Public Health Nutr* 2019;22:28–34.
- 39 Demir D, Bektas M. The effect of childrens' eating behaviors and parental feeding style on childhood obesity. *Eat Behav* 2017;26:137–42.
- 40 Bandura A. Social cognitive theory: an agentic perspective. *Annu Rev Psychol* 2001;52:1–26.
- 41 Cyril S, Nicholson JM, Agho K, *et al.* Barriers and facilitators to childhood obesity prevention among culturally and linguistically diverse (CALD) communities in Victoria, Australia. *Aust N Z J Public Health* 2017;41:287–93.
- 42 Bronfenbrenner U. Ecological systems theory. In: *Making human beings human: bioecological perspectives on human development*. Sage Publications Ltd, 2005: 106–73.
- 43 Kral TVE, Chittams J, Moore RH. Relationship between food insecurity, child weight status, and parent-reported child eating and snacking behaviors. *J Spec Pediatr Nurs* 2017;22.
- 44 Faith MS, Diewald LK, Crabbe S, *et al.* Reduced Eating Pace (RePace) Behavioral Intervention for Children Prone to or with Obesity: Does the Turtle Win the Race? *Obesity (Silver Spring)* 2019;27:121–9.
- 45 Adom T, De Villiers A, Puoane T, *et al.* Prevalence and correlates of overweight and obesity among school children in an urban district in Ghana. *BMC Obes* 2019;6:14.
- 46 King DM, Jacobson SH. What Is Driving Obesity? A Review on the Connections Between Obesity and Motorized Transportation. *Curr Obes Rep* 2017;6:3–9.
- 47 Evenson KR, Arredondo EM, Carnethon MR, *et al.* Physical Activity and Sedentary Behavior among US Hispanic/Latino Youth: The SOL Youth Study. *Med Sci Sports Exerc* 2019;51:891–9.