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How Children's Experiences and Perceptions of Their School Food Environment Influence Their Food-Related Decisions In-School in Urban Ghana

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ABSTRACT

School food environments play an important role in shaping children's food-related decisions, including where and what foods to acquire and consume on a school day. In Ghana, evidence indicates that food environments in and around schools may limit healthy food acquisition and consumption behaviour. This study aimed to understand how children's experiences and perceptions of their school food environment influence food acquisition and consumption decisions. Data from 18 focus group discussions with children ($n = 157$; aged 10–17 years) attending Public Basic Schools in the Greater Accra Region of Ghana were analysed, guided by the African urban food environment framework for creating healthy nutrition policies and interventions. Children's food decisions in school were found to be influenced by experiences and perceptions at multiple food environment levels: macro, physical and social levels in combination with individual-level factors. At the macro level, exposure to food advertisements on television emerged as an influence on food-related decisions. At the physical level, experiences and perceptions of environmental sanitation, food vendor hygiene practices, affordability, and food quality were consistently reported to influence decisions. Social-level experiences including influence from friends/peers, family (mostly caregivers/parents) and social qualities of food vendors also shaped food-related decisions. Caregiver/parental dietary advice was often linked to healthier acquisition and consumption decisions by children in school. The findings highlight the need for actions that work in synergy across multiple levels of the school food environment to create conditions that support children to acquire and consume healthier diets.

1 | Introduction

Each day in school, children make decisions about where and what food to acquire and consume in a complex food environment. This environment includes the spaces, infrastructure and conditions within and around a school where food is available, obtained, purchased and/or consumed, the nutritional content of foods, their promotion, pricing and all other information available about food and nutrition (Food and Agriculture Organization 2019). Further, interconnected stakeholders, such as school staff, caregivers/parents, the broader community and organisations with an interest in child health and nutrition are important actors in the school food environment (Food and Agriculture Organization 2019;

Summary

- Food-related decisions by children in schools were shaped by environmental and social contexts in combination with individual-level factors.
- Experiences with and perceptions of the macro environment (e.g., food advertising), physical environment (e.g., environmental sanitation, food vendor hygiene practices and food quality) and social environment (e.g., friends/peers, family, food vendor interactions) were identified to play a significant role in shaping food decisions.
- To promote healthier diets in schools, interventions should target multiple socio-ecological levels of the food environment.

Moore et al. 2023). Because schools provide a structured environment where children spend their time (7–8 h a day and approximately half of the days in a year) (Ross et al. 2021), schools have consistently served as a focal point for effective actions to improve diet, nutrition and health outcomes (Chriqui et al. 2014; Hanks et al. 2012; Micha et al. 2018; Pineda et al. 2021).

In Ghana, the quality of foods and beverages children purchase and consume in schools and the associated health outcomes is an ongoing concern (Abizari and Ali 2019; Fernandes et al. 2017; Ogum Alangea et al. 2018, 2020). While there are existing school-level policies and programmes to support children's nutrition (Annan et al. 2022; Ghana Education Service 2012; Government of Ghana 2015; Tandoh et al. 2023), undesirable shifts in school food environments warrant additional actions that acknowledge the complexity and role this environment plays in influencing the food decisions and therefore the diets of children.

There is wide consensus that interventions to promote healthier diets could be more effective when they are grounded in knowledge obtained from a target population's perspective (or 'lived experience') (Hawkes et al. 2015; Neufeld et al. 2022; Neve et al. 2021; World Health Organization 2021). In the school environment, this involves, for example, understanding what motivates food decisions (choosing healthy and less healthy foods/beverages) from the experiences and perspectives of children (Hawkes et al. 2020; Neufeld et al. 2022).

While previous research in Ghana provides some insights relating to children's dietary behaviours and food purchasing patterns in schools (Fernandes et al. 2017; Ogum Alangea et al. 2018, 2020), outdoor advertising of food and beverages around schools (Amevinya et al. 2022), school community readiness to improve food environments (Tandoh et al. 2023) and policy implementation (Laar et al. 2020), a better understanding of how children perceive and engage with these environments and the subsequent influence on their food-related decisions is needed to inform the design of interventions that reflect children's realities in the school context.

This study, thus, set out to understand how children's experiences and perception of the food environment influence their food-related decisions (food acquisition or consumption) on a school day to gain insights that could potentially improve school food environments and support healthier diets.

2 | Methods

2.1 | Study Setting

This study was part of a larger project conducted in six districts in Greater Accra Region, the highly urbanised administrative capital of Ghana (Laar et al. 2021): Accra Metropolitan District, Ashaiman Municipal District, Ga South Municipal District, Kpone-Katamanso District; La-Nkwantanang-Madina Municipal District, and Ningo Prampram District. These districts were selected to represent areas at varying urbanisation and poverty levels (Ghana Statistical Service 2015; Laar et al. 2021). The current study was conducted with children aged 10–17 years attending selected public basic schools within the six districts. In Ghana, Public Basic Schools are nonresidential government educational institutions comprising kindergarten, primary and junior high school levels, for children from the age of 4 years or older. The provision of basic education is mandatory and free to all Ghanaian children (Education Act 2008 Act 778 2008 (Act 778) 2008).

2.1.1 | Overview of School Food Environments Across Study Districts

The food environment in public basic schools in these districts could be described as diverse, with various sources of food available to pupils. In many cases, informal food vendors operate on or near school premises, selling foods and beverages from tables tops or small stalls. The foods available typically include a mix of packaged snacks like biscuits, sweets and chips; prepared meals such as rice dishes, kenkey (fermented corn dish), cooked beans, fried foods (e.g., plantain, yam, potatoes, fish and chicken), and sugar-sweetened beverages like carbonated drinks and fruit juices. The area within a school where these vendors operate is often referred to as 'the canteen' in the local context, which may differ from formal, purpose-built cafeterias. The extent and nature of food and beverage advertising in these environments also varies, with some schools experiencing more exposure to marketing than others (Amevinya et al. 2022).

During school hours, pupils obtain food through various means, including bringing food from home, receiving food through the Ghana School Feeding Programme (where applicable) or purchasing food from vendors operating within and around schools. While the Ghana School Feeding Programme aims to provide one hot, nutritious meal per day to children at the kindergarten and primary levels in all public basic schools, and has significantly expanded its reach in recent years, it has yet to achieve universal implementation nationwide (Government of Ghana 2015). As a result, pupils in schools not covered by the programme and those at the junior high level in all public basic schools often rely on purchasing food and drinks from vendors throughout a school day (Fernandes et al. 2017).

2.2 | Data Collection

Eighteen focus group discussions (FGDs) were conducted with children aged 10–17 years. This age range was selected to capture the perspectives of children who have been reported to be exposed to a wider range of food-related influences, compared to younger children, and are developing greater independence in making food decisions in the school environment (Neufeld et al. 2022; Story et al. 2002).

While not intended to be a representative sample, children were recruited, through their schools, by sex, age and level of education (primary or junior high) to ensure a broad range of perspectives were gathered. Three FGDs were conducted in each of the six districts, stratified by sex (i.e., a group consisting of all males, all females and mixed sex, respectively).

Data collection was carried out in April 2021. The topic guide was piloted with five children in the same age range as the study participants from a school outside the study setting to test the clarity and feasibility of the questions. All discussion facilitators (males $n = 4$ and females $n = 8$) had a minimum of a bachelor's degree, and prior experience in qualitative research methods. In addition, facilitators were trained on the aims of the study, including the application of the topic guide, and using appropriate probing questions during the FGDs. None of the facilitators had a prior relationship with the participants.

Informed consent was obtained at two levels (child assent and responsible adult consent). As part of the consent process, children were provided with information about the study and the research team. Each child and responsible adult provided permission for the FGDs to be audio-recorded.

FGDs were conducted on school premises during school hours and lasted 90 min on average; only children and facilitators were present in the group discussions.

All FGDs were conducted in English, the primary language of instruction in the participating schools. Notes were taken and written up after each FGD. The discussion guide for the focus groups covered two broad areas—food provisioning (food sold by food vendors and provided through the national school feeding programme) in schools and food promotion (in and outside school). Among the topics explored in food provisioning were children's understanding of what constitutes a healthy diet, malnutrition (in all its forms), perceptions of the school food environment and reasons influencing eating habits in school. Under food promotion, the discussions explored children's views on food adverts (brand recall, appeal, target audience), the overall effects of exposure to food adverts, perceptions of nutrition/health claims by adverts and views on implementing food marketing restrictions. In the current study, discussions relating to children's experiences with, and perceptions of their school environments and reasons for eating habits, formed the basis for data analysis.

2.3 | Data Analysis

Coding of transcripts was conducted using a deductive approach. The factors identified were categorised using the African urban food environment framework for creating healthy nutrition policies and interventions (Osei-Kwasi et al. 2021). Anchored on the socio-ecological model, this framework recognises the diverse drivers of dietary behaviour, in a food environment on a four-level structure: individual, social, physical and macro levels, respectively. This framework was developed using a mixed-methods approach including—combining evidence synthesis from a systematic review, qualitative data from photovoice interviews with adolescents and adults in two African countries, and expert consultation with individuals from several African countries. The framework contains 103 factors across the four socio-ecological levels of influence with nearly half of these being novel factors specific to the urban African context (Osei-Kwasi et al. 2021).

Coding of the transcripts was undertaken by a primary coder (A.T.) using *Nvivo* version 14 (Lumivero 2023). This involved: familiarising with transcripts from the FGD and the factors within the African urban food environment framework; using the predefined categories in the framework to code the transcripts by identifying expressions that aligned to the factors within the macro, physical, social and individual levels and also analysing the categorised data to find interactions (if any) between the different food environment levels. In addition to coding deductively, the data were also explored for potential new factors, beyond those in the framework, but no new factors emerged. A quarter of transcripts were double-coded by a second coder (M.H.) to confirm if the codebook was applied consistently. Any discrepancies identified during the double coding process were discussed between coders to achieve consensus.

2.4 | Ethics Statement

Ethics approval was granted by the Ghana Health Service Ethics Review Committee (Approval # GHS-ERC 005-06-19) and the University of Ghana Ethics Committee for Humanities (Approval # ECH 152-18-19). Additionally, permission to conduct this study in schools was obtained from the Greater Accra regional office and district offices of the Ghana Education Service in the respective study areas.

3 | Results

3.1 | Characteristics of the Study Participants

FGDs were conducted with 157 children across the six study sites. There were slightly less males ($n = 75$) than females ($n = 82$) and age ranged between 10 and 17 years (mean = 13 years, SD 1.7) (Table 1). Each FGD involved 7–10 children participating.

3.2 | Experiences and Perceptions Influencing Food-Related Decisions

Experiences and perceptions shaping children's food-related decisions in the school food environment were broadly related to 16 factors across the macro ($n = 1$), physical ($n = 6$), social ($n = 3$) and individual ($n = 6$) levels in the African urban food environment framework (Figure 1).

TABLE 1 | Demographic information of participants in focus group discussions ($n = 157$).

Focus group (FG) number	Sex		Age range (years)	District
	Male	Female		
FG 1	8		10–15	Ningo Prampram
FG 2		9	10–17	
FG 3	4	4	11–15	
FG 4	10		13–17	Ga South
FG 5		10	12–16	
FG 6	5	5	11–17	
FG 7	9		11–16	Ashaiman
FG 8		8	11–14	
FG 9	3	6	11–14	
FG 10	9		11–15	Kpone-Katamanso
FG 11		8	13–17	
FG 12	4	4	10–16	
FG 13	10		11–15	La-Nkwantanang-Madina
FG 14		10	10–17	
FG 15	4	6	10–15	
FG 16	7		13–14	Accra Metropolitan
FG 17		7	12–14	
FG 18	2	5	11–15	
Total	75	82		

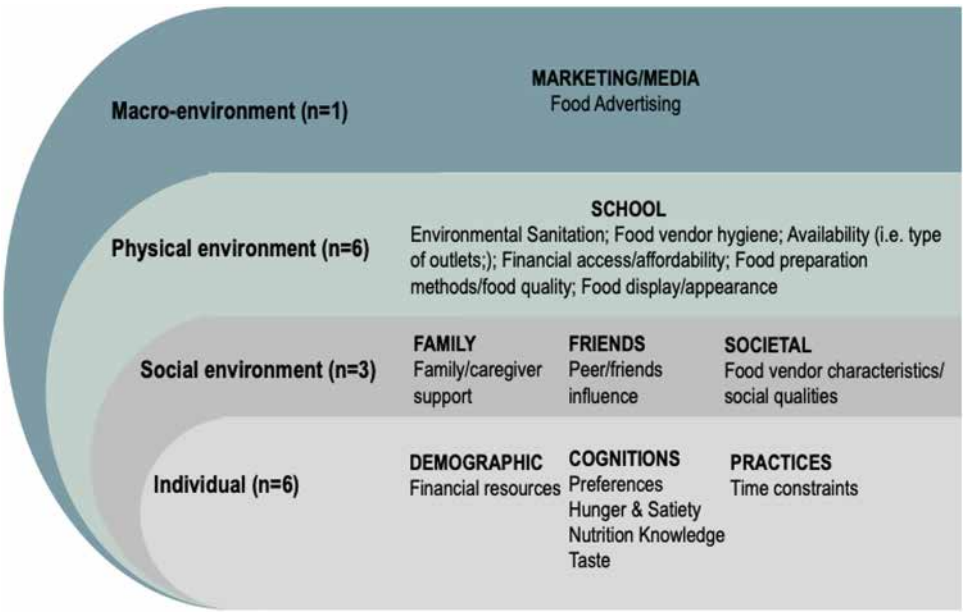

FIGURE 1 | A summary of factors ($n = 16$) identified to influence food decisions by children in schools (adapted from Osei-Kwasi et al. 2021).

Square brackets [...] have been used in the presentation of results for the following purposes:

1. Clarification/Modification: To add words or explanations that are not present in the original quotes but are needed for clarity or context (e.g., explaining local food terms, minor grammatical corrections).
2. Shortening Quotes: To indicate the omission of text within a quote to shorten lengthy quotations without altering the original meaning or intent.

3.3 | Macro-Level Factors

At the macro level, food advertising was the one factor that emerged.

3.3.1 | Food Advertising

Children's responses highlighted the influence of food advertising, particularly adverts seen on television for snacks and sugar-sweetened beverages, on their food-related decisions in the school environment. These adverts influenced the kinds of foods children brought to school or purchased from vendors in and around the school food environment. As explained by one participant, seeing appealing adverts could trigger discussions with friends and a desire to try new products, illustrating how advertising could create social pressure and influence children's perceptions of what is desirable to eat.

> *Sometimes when the advert is nice it pushes you to go for it, you will be like the way this advert is and the way the product is, it might be nice so when you come to school and you see your friend [...] you will be like I have not even eaten some [advertised food product] before, but may be it might be nice so let's go and try it.*
> (Female, 13 years, FG 17, Accra Metropolitan District)

3.4 | Physical-Level Factors

The following factors related to the physical food environment emerged from the discussions: environmental sanitation, food vendor hygiene, food availability, food preparation methods/quality of foods and food display/appearance.

3.4.1 | Environmental Sanitation

Environmental sanitation—referring to the hygienic and aesthetic conditions of the school surroundings, including cleanliness and the absence of unpleasant smells or unsightly conditions—emerged as a prominent consideration for making food-related decisions. This also contributed to the overall perception of food safety and food quality and influenced children's willingness to consume available food options. If children perceived the school food environment to be 'clean' and well-maintained, they were more likely to trust the safety and quality of the food being sold by vendors. Conversely, if a school's food facilities were deemed as visibly unclean or poorly maintained, children were deterred from purchasing or consuming from that food facility. This link between cleanliness and trust was apparent in statements like:

> *When the surroundings where they sell the food is very clean, I actually buy from that place.*
> (Male, 15 years, FG 15, La-Nkwantanang-Madina District)

Additionally, children expressed concern that poor environmental sanitation could lead to the spread of foodborne illnesses, causing them to be cautious about their food acquisition and consumption behaviour.

> *In the environment, if the food is good and the environment is not good, and houseflies come and settle on the food you will get sick.*
> (Male, 13 years, FG 12, Kpone-Katamanso District)

3.4.2 | Food Vendor Hygiene

Children widely expressed that food vendor hygiene practices influenced their food decisions in the school environment. They specifically considered practices such as handwashing, safe and proper food handling practices and the use of appropriate utensils (e.g., ladles, spoons) by individuals who prepare and sell food.

> *When I'm going to buy food, I first look at the person who is selling the food, whether clean or dirty. And I look at the environment, whether there are rubbers [used plastic bags] and houseflies there. And I look at how the person takes [serves] the food.*
> (Female, 13 years, FG 14, La-Nkwantanang-Madina District)

When children observed food vendors practising appropriate hygiene measures, they were likely to perceive the food being sold as safe and of high quality and would therefore buy and consume that food.

> *I eat from the canteen because I know how they prepare it, and I also heard that they allow only those who go for check-ups to see if they have any diseases. So, before they come to sell, they have been treated, and they show their health certificate. The other vendors just come and sell. The woman who sells kenkey [fermented corn dish] uses her bare hands to serve the kenkey, so the food can be contaminated.*
> (Male, 15 years, FG 3, Ningo Prampram District)

Additionally, inappropriate food handling by vendors sometimes resulted in children avoiding healthier food options, such as fruit.

> *There is a woman at the canteen, she sells fruits, if you see, she will not put rubber [food gloves] on her hands, she will just take the fruit and she will be peeling it, so you won't feel like eating it anymore.*
> (Female, 13 years, FG 8, Ashaiman District)

Other children also reported buying food outside the school premises or bringing homemade foods to consume in school because they had concerns about environmental hygiene in the school food environment.

3.4.3 | Food Availability

Food availability, described as the range of food and beverage options in schools, was another influence on food purchasing and consumption decisions. Children reported that purchasing decisions were defined by foods that were available

in the school food environment. For instance, one child shared:

> *...All the variety of food are sold there [school canteen] and there are also fruits, when you buy the food, you can buy that too.*
>
> (Female, 12 years, FG 6, Ga South District)

3.4.4 | Financial Access/Affordability

The cost of food available in schools was another consideration for children when deciding what to purchase. Most children expressed the view that food sold in their schools was expensive for the portions served by vendors. To illustrate this point, one participant noted:

> *The food is expensive so if you are not holding like 3 Cedis [$0.20] it can't satisfy you.*
>
> (Female, 13 years, FG 11, Kpone-Katamanso District)

3.4.5 | Food Preparation Methods/Quality of Foods

Children's subjective assessment of food preparation methods, including adulteration, and the quality of meal ingredients influenced their preferences and food decisions. Where children perceived food to be of poor quality, they were likely to avoid it.

> *They prepare the food to be cheaper than what is sold outside so that the students will not go outside to go and buy, and they make it cheap and it's not quality. [For example], the stew is like soup [...] and if you are not careful like my colleagues are saying, you will find things in the food.*
>
> (Female, 15 years, FG 12, Kpone-Katamanso District)

3.4.6 | Food Display/Appearance

Some children expressed that their purchasing decisions were influenced by the visual appeal and presentation of food by vendors. Here, children were drawn to foods they found appealing and were packaged.

> *What influence[s] me to go and buy food is when the food is well packaged or when it looks attractive and good to see.*
>
> (Male, 14 years, FG 9, Ashaiman, District)

3.5 | Social-Level Factors

Discussions with participants revealed the influence of these social-level factors: friend/peer influence, family influence and food vendor characteristics/social qualities.

3.5.1 | Friend/Peer Influence

Within the school food environment, children reported that their friends/peers had a significant influence on decisions on what foods to purchase and consume. These influences were either positive or negative in terms of nutrition. Some children reported friends providing support and recommendations for healthier food options.

> *Yesterday I was going to buy banku [fermented corn dish] and my friends said the banku is not nice, but we should go and buy jollof and I said why, they said the banku woman doesn't keep her place neat but the jollof, her jollof is nice and the surrounding is neat so we should go and buy jollof, so I followed them.*
>
> (Female, 14 years, FG 18, Accra Metropolitan District)

Others also had friends influencing them to consume less healthy food options.

> *Sometimes when I like to go and buy jollof [rice dish] and my friend wants to buy yoghurt [sweetened milk ice-cream], I can change my mind and go and buy the yoghurt].*
>
> (Female, 14 years, FG 8, Ashaiman District)

Influence from friends also occurred in other ways, such as joint decision-making. Children sometimes made decisions together with their friends about where to eat or what food to purchase.

> *...Yes, because we are 5 friends and we walk as 5, maybe we all want to eat waakye [rice and beans dish] then only you, you will say you want to eat this [something else]. It will be like you want to isolate yourself, so you follow them if they say they want to eat waakye because you are all friends.*
>
> (Male, 15 years, FG 6, Ga South District)

Others also pooled their lunch money to buy food with their friends.

> *If your money is not enough for what we both want to buy we come together with our money to buy the food.*
>
> (Female, FG 2, Ningo Prampram District)

3.5.2 | Family Influence

Children reported that family members, particularly caregivers/parents had an influence on their food-related decisions when in school. This occurred through ways such as encouraging them to buy healthy food options. Children reported adopting the guidance given by caregivers and parents as illustrated by the quote below.

> *My father advised me to be eating food that would boost my immune system. First, I was eating those sweets, those toffee things. Then he advised me that I should take food*

that would boost my immune system. So, from that day I have been eating foods like rice, jollof and chicken.

(Female, 11 years, FG 9, Ashaiman District)

3.5.3 | Food Vendors Characteristics/Social Qualities

The way food vendors interacted with customers, including their friendliness, demeanour and responsiveness shaped children's food decisions and overall experience of the school food environment. Where children had a positive experience with food vendors, they were likely to return and purchase whatever options the vendor had available.

...Because when you go to buy the food, they don't frown their face and they smile at you, it makes you feel like they have known you for a long time.

(Female, 14 years, FG5, Ga South District)

3.6 | Individual-Level Factors

Individual-level factors that emerged from the discussions included preferences, taste, hunger and satiety, time constraints, financial resources and nutritional knowledge/beliefs.

Although factors at physical and social levels in the food environment were commonly expressed considerations for food-related decisions, those factors often interacted with individual-level factors that relate to children's individual food preferences, financial resources, hunger and satiety, time, and nutrition knowledge.

3.6.1 | Preferences

Children expressed that their personal preferences relating to taste and foods they liked/disliked shaped their food decisions. If a child disliked a particular healthy food option, they sometimes chose an alternative food item even if it was less healthy.

If I come to school, I don't like yam, so I prefer a drink. Yesterday I drank a drink, the whole of last week I was drinking Bel cola, yeah that drink.

(Female, 13 years, FG 17, Accra Metropolitan District)

3.6.2 | Hunger and Satiety

A key consideration for children was their hunger level together with the satiety value of a food item. Children who were hungry were likely to prioritise food that will result in satiety over any other factors including the nutritional quality of the food.

...Sometimes when you are very hungry you don't think whether there are vitamins or something in it [food]. As far as you are hungry, you have to eat or buy the food.

(Male 12 years, FG 9, Ashaiman District)

3.6.3 | Time Constraints

When children had limited time to sit and eat, they were more likely to choose less healthy food options that were quick and easy to consume. Time as a consideration for food-related decisions was often expressed in relation to school-level factors such as short lunch breaks, long queues and type/number of food outlets available. Illustrative of this point, one participant stated:

Our time [lunch break] too is short, it is 30 minutes [...]. By the time you go out, the food queue, if you say you are counting you will be the number 1000 and something so we will go for drinks. And you see there are many shops here, like we have about 5 places where they sell drinks so I prefer the drink because that one if I go, I just take it [...] you can just finish it within 3 minutes and you are good to go.

(Female, 13 years FG 17, Accra Metropolitan District)

3.6.4 | Financial Resources

A child's financial resources influenced their ability to access and afford food options available in the school environment. Where children had limited financial resources, they were more likely to consider factors such as food quantity and cost before purchasing.

What influences me to buy food is the adequacy of food or lack of money. When I don't have money, but the vendor sells it at a cheap price I always like to buy it.

(Male, 14 years, FG 9, Ashaiman District)

3.6.5 | Nutrition Knowledge and Beliefs

Children's knowledge and awareness of the role of different nutrients in the body and the benefits of various food groups also influenced their purchasing and consumption decisions in the school food environment.

I look at how [what] the food will give me ... how it will help me grow healthy.

(Male 11 years, FG 13, La-Nkwantanang-Madina District)

4 | Discussion

This study sought to understand how children's experiences and perceptions of their school food environment influence food-related decisions in-school. From a socio-ecological perspective (Osei-Kwasi et al. 2021), the data suggest that children's experiences and perceptions at multiple levels of the school food environment—physical, social, macro and individual—contributed to shaping decisions about the foods and beverages to consume on a school day. These findings add to the extant evidence of school-level research in low- and middle-income

countries that moves beyond individual-level determinants of diet to examine the broader environmental factors shaping food acquisition and consumption behaviour.

At the macro-level, factors such as food marketing played a role in children's food-related decisions in school. Here, children were particularly influenced by food adverts seen on television. Existing evidence shows that children are susceptible to the influence of food marketing, which can shape their dietary habits and preferences (Boyland et al. 2022; Norman et al. 2016; Smith et al. 2019). Given the influence of food advertisements on children's food-related decisions, stronger legislation is needed to restrict the advertising of unhealthy foods to children to protect them from the harmful effects of unhealthy food marketing. Currently in Ghana, the challenge and urgency of addressing food marketing to children is well recognised, with ongoing advocacy efforts to implement complementary policies on food marketing, food labelling, food-related fiscal measures and healthy public food procurement (Healthier Diets for Healthy Lives Project 2022) to promote healthier and more equitable consumer food environments including in and around schools.

At the physical environment level, experiences and perceptions relating to food vendor hygiene practices and environmental sanitation were consistently reported by children to influence their food-related decisions. In addition, the types of food available and their affordability also mattered to children when food decisions were made. These findings correspond to similar studies among schoolchildren in urban Zambia (Mukanu et al. 2022) and Ethiopia (Berhane et al. 2023), which also found that affordability, hygiene of food vendors and food availability were key factors influencing food decisions. However, in the present study, these experiences did not operate in isolation. When making decisions on what to eat, these physical-level factors often interacted with individual-level considerations. For example, children who were hungry were likely to prioritise satiety over any other factor including the nutrient quality of the food. Additionally, children with limited lunch money also prioritised the satiety value of a meal over other considerations. This observation aligns with existing research that investigated food choices among low-income adolescents and found that when faced with limited funds, these adolescents often prioritised feeling full over selecting nutrient-rich foods (Burns et al. 2013). These interactions demonstrate a need for actions that reinforce and complement each other to improve children's diets. For instance, interventions to simultaneously address the physiological mechanisms of hunger and satiety, food availability and affordability, could involve structured education around the benefits of selecting healthy foods, together with modifications to the food environment—such as introducing policies to regulate the types of foods and beverages sold within and around school premises and emphasising the provision of affordable food options. Combining such efforts could have a positive synergistic effect on food decisions. A study exploring different approaches to improve the diets of schoolchildren (Moore et al. 2013), concluded that when the different levels of influence in a school environment are considered together, it could make policies and interventions more effective, easier to implement and maintain over time.

In discussing their concerns about food vendor hygiene practices, environmental sanitation and food adulteration in the school food environment, children showed a keen awareness of the elements making up food safety and the ability to make informed decisions based on those observations. These findings reinforce the importance of food safety and its contribution to dietary behaviour in low- and middle-income contexts (Isanovic et al. 2023; Liguori et al. 2022).

In public basic schools in Ghana, the informal food sector plays an important role in the school food environment. The presence of these vendors ensures schoolchildren have access to a wider variety of foods and beverages, and also supplements the national school feeding programme, especially in schools where the programme is yet to be implemented or where the meals provided may not cover all pupils. While there are existing guidelines on food hygiene standards in schools (Ghana Education Service 2012), most foods sold by informal vendors were still perceived by children to be unsafe and also carry a risk of foodborne diseases. These findings highlight a need for stricter enforcement of existing regulations on safe food-handling practices in schools. Additionally, the existing guidelines could be updated to include vendor education on marketing strategies to promote healthy food options, while maintaining hygiene standards. Providing guidance on how to make healthy options appealing to children could increase their consumption (Guthrie et al. 2015).

Within the social context, findings from this study showed that support from caregivers and parents often led to healthier food decisions by children in school. This finding also aligns with existing studies on food parenting practices and their effect on children's dietary behaviour (Sleddens et al. 2014; Vaughn et al. 2016).

The influence of parental and caregiver dietary advice on children's food decisions points to the importance of considering the broader food environment when developing interventions to promote healthy eating habits among children and involving families in nutrition education initiatives. Approaches around family and community involvement, such as fostering collaboration and advocacy between families/caregivers, communities and schools could promote healthy diets by children when in school.

Another important way in which children decided on what foods to consume was through recommendations by, or preferences of, their friends/peers. This influence was, however, bidirectional with some children experiencing a positive influence from friends while others experienced a negative influence. Studies have shown that adolescents who perceive their friends to purchase and consume healthier foods were more likely to make healthier food decisions (Hargreaves et al. 2022; Salvy et al. 2012).

Beyond, food vendor hygiene practices, the social qualities of vendors, such as their friendliness and approachability exerted an influence on food-related decisions by children. This indicates the need for interventions that not only consider improving the hygiene practices of food vendors but also their social skills and interactions with young customers. This could involve implementing training programmes that cover both food safety and customer service skills. To encourage

participation and ensure sustainability, incentives could be offered to vendors who consistently demonstrate high hygiene standards and positive social interactions. While implementing such interventions might face challenges, such as the cost of training, potential solutions include seeking funding and building partnerships with organisations that have an interest in child health and nutrition to support these initiatives.

While this study focused on understanding how various factors influence children's food-related decisions in the school food environment, it is interesting to note some parallels with factors influencing adult food choices in urban Ghana. Some findings from this study—for example food advertising, environmental sanitation and food vendor hygiene, friends, food vendor characteristics/social qualities and hunger and satiety—resonate with recent research on adult food consumption in urban Ghana (Mensah and Oyebode 2022; Osei-Kwasi et al. 2020; Pradeilles et al. 2021; Wanjohi et al. 2023), suggesting the potential transferability of some of these contextual factors across different age groups and settings. Although these factors appear to operate across age groups and settings, the current study highlights the unique ways these factors manifest in the school context and is useful for the design of targeted interventions to support healthier diets among children.

4.1 | Limitations

This study has several limitations that should be considered when interpreting the findings. While the study was conducted with participants aged 10–17 years from different public basic schools in selected districts in the Greater Accra Region of Ghana, the findings may not represent the experiences of children in other urban areas, including those attending private schools where there might be variations in food environment policies, resources and infrastructure that could influence children's experiences and perceptions. Additionally, while many of the factors identified as influencing children's food-related decisions remain relevant, specific aspects of the food environment, such as food prices or availability, may have changed since the time of data collection. Finally, it is important to acknowledge the inherent limitations of FGDs, such as the potential influence of dominant voices on individual responses thereby influencing the saliency of the factors that emerged in the study.

5 | Conclusions

Children's food decisions (acquisition/consumption) in Ghanaian schools were influenced by experiences and perceptions at multiple food environment levels: physical, social and macro levels in combination with individual-level factors. Experiences with, and perceptions of, the physical environment, social environment and macro environment were identified to play a significant role in shaping food decisions. Thus, highlighting the need for actions that work in synergy across multiple levels of the school food environment to create conditions that support children to acquire and consume healthier diets. While the factors identified to play a role in food-related decisions in this study are non-exhaustive, they offer important insights for policy and practice aimed at creating supportive school food environments for healthier diets in Ghana and similar contexts.

Author Contributions

Akua Tandoh conceived the study with substantial contributions from Amos Laar, Michelle Holdsworth, Charles Agyemang and Richmond Aryeetey. Akua Tandoh analysed, interpreted the data and wrote the first draft of the manuscript. All authors provided critical inputs to the initial draft, read and approved the final manuscript.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data are available on reasonable request. The data supporting the findings of this study are available on reasonable request.

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