"It does help but there's a limit …": Young people's perspectives on policies to manage hot food takeaways opening near schools

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A R T I C L E   I N F O

A B S T R A C T

Background: Local authorities (LAs) in England are increasingly using the planning system to manage the proliferation of hot food takeaway outlets ('takeaways') near schools as part of a range of policies to promote healthy weight in children. These takeaway 'management zones' include restrictions on planning permission to open new takeaways within a certain distance of schools. In this qualitative study we explore young people's perspectives of management zones.
Methods: We purposively recruited 46 young people (aged 11–18 years) attending secondary school across two London LAs with operating management zones. We conducted semi-structured, walking group ("go-along") interviews in January–February 2023 in the local food environment close to participants' schools. We analysed data using framework analysis.
Results: Participants generally viewed management zones as reasonable and uncontroversial but were not always aware that management zones were in operation. Although participants understood that management zones prevented new outlets from opening, they observed they did not seem to reduce existing provision. This was viewed positively as it did not result in the closure of local takeaways perceived as important components of the social fabric of school life. Participants believed that the potential health impact of management zones is limited by their exclusive focus on takeaways as other food retail commonly patronised by young people, such as convenience stores, are important sources of unhealthy food. Participants also identified inadequacies in the wider food environment, including the school dining environment and access to food delivery apps.
Conclusions: Our findings suggest that although young people find management zones acceptable and believe they have some positive impact on diet, they did not perceive management zones as effective as they could be. Participants articulated that the management of takeaways on their own is unlikely to reduce exposure to unhealthy foods. Widening the remit of planning policy to include outlets selling convenience foods may be important for policy optimisation.

1. Introduction

The environments where we source and consume food can influence dietary choices in a way that is detrimental to health (Neve and Isaacs, 2022; WHO, 2016). The association between exposure to a poor-quality food environment and diet is well known and may contribute to the generation and maintenance of diet-related inequalities in health (Hallum et al., 2020; NHS Digital, 2019). In response, environmental

interventions have been proposed as components of local and national public health strategies to improve population diet and reduce dietary inequalities (Penney et al., 2014; Public Health England, 2019).

As adolescents spend 40% of their waking time in school each week, the food environment in and around schools may significantly influence their dietary choices and behaviours (França et al., 2022; Gonçalves et al., 2021; Ohri-Vachaspati et al., 2023). Evidence suggests that adolescents are frequent consumers of hot food takeaways ('takeaways' hereafter) with purchases occurring during school breaks, lunch times and on their journey to and from school (Macdiarmid et al., 2015; Taher et al., 2019; Thompson et al., 2018). One study of UK secondary school students (aged 11–14 years) found that more than half purchased fast food or takeaway food at least twice a week, and 1 in 10 every day (Patterson et al., 2012).

Foods sold in takeaways are typically energy-dense, nutrient-poor, and served in large portion sizes (Huang et al., 2022; Jaworowska et al., 2014; Keeble et al., 2019b). Regular consumption of takeaway food is associated with poor health outcomes in adults and children, including excess weight gain, cardiovascular disease and mental health problems (Duffey et al., 2007; Ejtahed et al., 2024; Patterson et al., 2012; Penney et al., 2017; Pereira et al., 2005). Evidence also suggests some association between physical exposure to takeaways, their consumption and body weight (Burgoine et al., 2016; Jiang et al., 2023; Patterson et al., 2012; Pearce et al., 2018). Diet-related health issues in adolescence have been identified as a strong predictor of diet-related health issues in adulthood, with interventions targeting dietary behaviours during this developmental stage proving particularly effective for reducing risk of excess weight and other adverse health outcomes later in life (Neufeld et al., 2022; Simmonds et al., 2016).

Interventions targeting the food environment around schools have been shown to impact the dietary behaviours of young people and the wider population (Lake et al., 2023; Ohri-Vachaspati et al., 2023). One such intervention is the development of planning policy to manage planning applications for new takeaway outlets (Brown et al., 2022; Keeble et al., 2019b). In 2019, half of England's 325 Local Authorities had developed takeaway planning policies, with the most common health-focused approach involving the implementation of takeaway 'exclusion zones' around schools (by 41 LAs), where planning permission for new takeaway outlets may be denied or restricted (Keeble et al., 2019b). Although the term 'exclusion zone' is commonly used by LAs, in this paper we use the term takeaway 'management zones' to capture the varied approaches to management adopted across LAs. Existing takeaway outlets that fall within the management zone remain unaffected by the policy, and the size (e.g. 400 m or 800 m), shape (partly determined by the point from which the management zone starts) and inclusion criteria (primary and/or secondary schools) vary across LAs. The most common size specification is a 400 m management zone, which is believed to equate to a 5-min walk (Homes and Communities Agency, 2006).

Despite the focus of this intervention on schools, there has been limited research investigating young people's perceptions of management zones. Given that public attitudes often impact the effectiveness of public health policy, exploring the views of the target population has the potential to increase policy acceptance and impact (Diepeveen et al., 2013; Reynolds et al., 2020). Public involvement in policy-making processes can further increase acceptance, and the value of youth participation in the creation and development of policies that affect them is increasingly being recognised (Macauley et al., 2022; Patton et al., 2016). We therefore aimed to explore the acceptability, perceived effectiveness, and barriers and facilitators of the policy's impact amongst young people (aged 11–18 years) attending secondary schools in LAs with management zones in operation.

2. Methods

2.1. Setting

Data were collected in February and March 2023 in the London Boroughs of Islington and Redbridge, which were selected with the aim of including students from diverse socioeconomic backgrounds. Secondary schools in these boroughs are a mix of comprehensive and selective and are situated in neighbourhoods ranging from deprived to more affluent areas, ensuring a broad range of experiences. London boroughs have some of the highest densities of takeaways in England (Keeble et al., 2019a).

Islington is the second most densely populated LA in London and one of the most deprived (Greater London Authority, 2023; Trust for London, 2023a). In contrast, Redbridge is less densely populated and deprivation is average compared to all London boroughs (Greater London Authority, 2023; Trust for London, 2023b). In 2013 and 2018 respectively, Islington and Redbridge councils introduced policies to manage the proliferation and concentration of takeaway outlets. Islington's management zone policy specifies that planning permission for new takeaway outlets within a 200 m radius of primary and secondary schools should be resisted (Islington Council, 2016). Redbridge operate management zones with a 400 m radius of primary and secondary schools (Redbridge Council, 2018).

2.2. Sampling and recruitment

A purposive sample of 38 state-funded secondary schools across Islington and Redbridge LAs were initially approached for recruitment. All secondary schools within these LAs were contacted twice and provided with study information sheets and flyers to aid recruitment. A total of four schools (two schools in each LA) agreed to facilitate and help supervise data collection. School contacts were asked to recruit up to nine students per group interview, preferably with a mix of ages and genders (if co-educational) to ensure diverse perspectives. We conducted two go-along interviews in schools where more than nine students signed up to participate.

We recruited a total of 46 participants aged between 11 and 18 years. Participant and school characteristics are summarised in Table 1. As the school experience varies by age, participants were split into two age groups: younger participants aged 11–15 years, and older participants aged 16–18 years.

For those aged 11–15 years, informed consent was obtained from both parents/guardians and participants themselves. For older participants, only participants themselves were required to provide informed consent. Ethical approval was obtained from the London School of Hygiene and Tropical Medicine Research Ethics Committee (Ref/26337).

2.3. Data collection

Given this study's aim to understand young people's perceptions and experiences of the food environment around schools, go-along interviews were chosen. This mobile data collection method allowed reflections on the everyday food practices of participants as they unfolded in time and space (Carpiano, 2009; Kusenbach, 2003). Previous studies have found that participatory approaches with children and young people, such as go-along interviews, have the potential to reduce the power imbalance between researcher and participants by situating the young person as the expert guide (Hayball and Pawlowski, 2018; Horgan et al., 2022).

Interviews were conducted following a semi-structured topic guide designed and piloted initially in consultation with PPI groups at the University of Hertfordshire (including adolescents), and was further developed iteratively throughout data collection. Questions and prompts aided investigation into policy acceptability, its perceived impacts, and barriers to effectiveness. Each interview began at the school

Table 1
Go-along interview participant characteristics.

Local Authority	School	Description of school	IMD[a] Decile[c]	IDACI[b]Decile[c]	Interview number/s	Age Range of interview participants (years)	Female Participants n = 35	Male Participants n = 11	Total Participants n = 46
Redbridge	A	Single-sex, state	4	3	1	16–18	8	0	8
					2	16–18	7	0	7
Redbridge	B	Co-ed, state	6	6	3	11–14	4	5	9
					4	16–17	5	2	7
Islington	B	Single-sex, state	3	2	6	12–13	8	0	8
Islington	A	Co-ed, state	3	2	5	16–17	3	4	7

[a] IMD: Index of Multiple Deprivation.
[b] IDACI: Income deprivation affecting children index.
[c] A low decile indicates high deprivation (Ministry of Housing Communities and Local Government, 2019).

site with an introduction to the study and then continued on foot within the local food environment. The route chosen by participants typically involved walking to the nearest high street with takeaway and other food outlets that they identified as most popular with school students. Fig. 1 illustrates an example go-along interview route.

Six go-along interviews were conducted with a total of 46 participants. Interviews were led by BS and lasted for the duration of the route chosen by participants, with an average length of 42 minutes and a range of 30 minutes. Interviews were audio-recorded and notes and photos were taken to aid analysis and contextualise the local food environment. Prior to the interview, participant background questionnaires were completed to collect data on personal characteristics (age, ethnicity, school, home address), takeaway consumption, and purchasing behaviour. Trips were conducted during school hours and were accompanied by a school chaperone. All participants were provided with a £20 shopping voucher to compensate them for their time.

2.4. Data analysis and reflexivity

Audio-recordings were transcribed verbatim by an external company and checked manually by BS. All identifying information was removed and all participants were pseudonymised. Transcripts were imported into NVivo 12 software for coding and data were analysed using Framework Analysis (Ritchie and Spencer, 1994). Framework Analysis is particularly suited to applied public health research because it allows for specific research questions and aims to be addressed through a flexible and comparative analytical approach. Data were systematically organised into deductively derived themes driven by *a priori* research questions and then combined to establish an inductively derived framework that remains fluid and open to interpretation. Throughout the data analysis process, discussions were held with SC and CT to ensure a range of perspectives were considered when interpreting the findings. Consensus on the framework was reached at the mapping and interpretation stage of analysis.
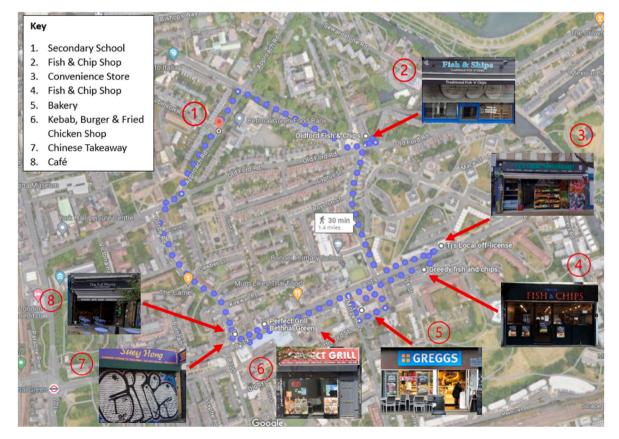

Fig. 1. Hypothecated go-along interview route using a now-closed secondary school in London and continuing on foot around the local food environment.

The researcher team acknowledge that the lead author's background and positionality may have influenced the creation and interpretation of the data. BS is a young, White woman with 3 years' previous experience working in a London secondary school, which gave her a unique insight into the experiences of UK school students. This background provides valuable context but also necessitates careful consideration of how her potential biases and preconceptions may have shaped the research. BS tried to remain critically aware of these factors throughout the research process.

3. Results

In the following sections, we explore participant experiences of the food environment in and around their schools, paying particular attention to perspectives concerning management zones. Our analysis identified three main themes: awareness and acceptability of management zones; perceived impacts of management zones; perceived barriers to effectiveness. Given the heterogeneity of findings within the last theme we divide this section into three subthemes: inadequate school food and school environment; purchasing convenience food and drinks from non-hot food outlets; food delivery apps.

3.1. Awareness and acceptability of management zones: "I don't think I would notice"

Participants found management zones broadly acceptable as they were unaware that they were in operation. Rather than threatening the existing, and sometimes much-loved, local outlets, the policy's focus on restricting the growth of new takeaways meant that its potential effects were not directly observable. While the policy may have restricted the opening of new outlets near their school, participants were generally satisfied with the current food retail offer and were loyal to existing outlets. Some participants expressed that their contentment with the current food options available influenced their receptiveness to management zones:

> "I don't think I would notice if new takeaways weren't allowed to be made anymore. I don't think I would notice 'cause I'm content with the options we have here … but for as long as we don't have it, we wouldn't know the possibility … I think I'm fine without."
>
> (Student from Redbridge A1, aged 16–18)

When visiting local food outlets, participants were keen to highlight their social, cultural and economic value. Participants spoke fondly of the enduring relationships between shop workers and the local school students, considering them fundamental features of the school community and its culture. The personalised service provided by such retailers was also frequently raised, with participants speaking of special treatment in the form of student discounts and deals, like *"buy two, you get one free"* (Student from Redbridge A1, aged 16–18). Participants, including in the following account, exhibited a strong sense of loyalty towards local businesses:

> "They're [the local Fish & Chip shop] like very, acquainted with tradition and that place has been around for, like, so long, so it would be so weird if that chip shop just disappeared because it's an independent one. It's known to be in this area, so that makes it … we have … a great attachment to it and we don't want to get rid of it."
>
> (Student from Redbridge A2, aged 16–18)

Takeaway outlets (including those with seating and the option to eat in) were referred to as important community spaces for socialisation, and their patronage a marker of social belonging and inclusion. The acts of socialising and eating takeaway food seemed to be intrinsically linked for participants; it was routine to do both things at once. Some participants specifically raised the issue of takeaways filling a gap in alternative spaces for young people to meet and *"socialise"* after school and on

the weekends. One participant described the lack of *"accessible"*, *"safe zones"* in his local community where young people can *"go to, not to order food, but just to hang out"* (Student from Redbridge B3, aged 11–14). In this way, these spaces transcended their function of fulfilling food-related needs to become hubs for social interaction and passing time. Although participants often described eating takeaway food as the primary motivator for patronising takeaways, their social potential evidently played an important role in their food choices and behaviours:

> "A lot of people go out to eat because it's the only thing you can do around here, like to hang out."
>
> (Student from Redbridge A1, aged 16–18)

> "Takeaways and fast food restaurants in the area are a way for a lot of people to socialise and by taking that away it takes away a lot of social activity and then everything's committed to just school and you won't be able to make those connections and relationships outside of school."
>
> (Student from Redbridge B4, aged 16–17)

3.2. Perceived impacts of management zones: "I don't think it would make much of a difference"

Participants generally perceived management zones to have had little tangible impact in reducing young people's physical access to takeaways as visible concrete 'change' in the food environment was not observable. As a result, a policy focus on reducing takeaway growth was expressed as synonymous with a lack of significant perceived change (either positive or negative) in youth dietary behaviours.

The local context in which the policy was applied had a bearing on how participants theorised its possible impacts. In areas with numerous takeaways and other food outlets selling unhealthy foods, participants generally believed that preventing further proliferation is unlikely to achieve much as these areas are already saturated. This issue was particularly salient to the participants in this study, who all attended schools situated near a wide array of food outlets. Some participants expressed a desire to consume *"healthy"* takeaway and convenience food but struggled to access outlets near their schools selling affordable healthier options.

In the following excerpt, one participant reflects on the issues of implementing the policy in areas already highly saturated with takeaway outlets. It was explained that small reductions in the number of new takeaways are unlikely to be impactful without closing existing outlets:

> "It won't affect that much, it might affect a lower majority of the areas. But if in places that don't already have fast food places that would make sense, but somewhere like here, we are so close to a town centre, it won't do much."
>
> (Student from Redbridge B4, aged 16–17)

While participants acknowledged that the policy may *"help"* to *"limit students' choices"* by reducing access to takeaways near schools, they also noted the limitations of the scope and size of the management zone itself. Participants pointed out that the policy may not apply to other areas they frequent, including places they pass through on their journeys home. For older participants typically able to *"go anywhere, anywhere you want"* (Student from Redbridge B4, aged 16–17) during break and lunch times and study periods, a management zone was also not perceived as a barrier to accessing takeaway (and convenience) food during the school day. There was a strong consensus across age groups that students, if they could, would willingly travel beyond a management zone if their food-related and social needs were not being met:

> "I don't think completely closing down or not closing down but preventing new takeaway shops near schools is going to change anything 'cause students can still travel to other areas to get food. Especially after school, which is when most people would get food."

(Student from Redbridge A1, aged 16–18)

"I think it also wouldn't fix the problem. People would just go elsewhere and try and find more takeaways."

(Student from Redbridge A2, aged 16–18)

3.3. Perceived barriers to effectiveness: "I don't think it's takeaways"

When asked about their perceptions of management zones, participants were particularly keen to discuss their beliefs about potential barriers to effectiveness. Conversations revolved around issues in the wider food environment in and outside of school, such as school food, non-hot food outlets and food delivery apps (FDAs), and their collective influence on youth dietary behaviours. Participants expressed the belief that management zones can only achieve partial management of the food environment, which reduces their potential to decrease overall access to unhealthy foods and improve diets.

3.3.1. Inadequate school food and school environment

Participants argued that the policy's impact is compromised by the unappealing and inaccessible state of school food and school dining environments. They argued that the comparative affordability and convenience of takeaway food rendered the external food environment particularly appealing and, at points, necessary to compensate for the shortcomings of the school food environment. This juxtaposition led to a common perception among participants that improving the taste and material conditions of school food would better serve to deter young people from patronising external food outlets at break and lunch times (if permitted) and after school:

"I think if they improved school dinners it might actually help because a lot of people might be like, I don't want to eat the school dinners, I'm just going to eat something after school instead from a takeaway. But if there were nicer school dinners that people really wanted to eat, then they probably wouldn't be hungry after school, so they wouldn't really want to go to the takeaways."

(Student from Islington B6, aged 12–13)

The most common recommendation for improving school food was related to the temporal organisation of lunchtimes, which disincentivised participants from eating and socialising with their peers in school. Accounts of eating in *"noisy"* and *"busy"* canteens, often with *"long"* and time-consuming queues, were frequently contrasted with experiences of eating *"quick"* takeaway food in *"open areas"*. While older participants could avoid this issue by eating outside of school, younger participants recounted instances where *"you might not have time to eat in because the queues are so long"* (Student from Islington B6, aged 12–13). Participants generally also shared the view that school food represented poor value for money, particularly in comparison to takeaway food:

"It costs £2.50 to get chips, and it costs around that same amount of money to get like food from school. So if it's going to cost the same amount, but you can get like a big portion of chips that's more filling, and that's warm, and faster, a lot of students might prefer to get that."

(Student from Redbridge A1, aged 16–18)

Considering these frustrations, participants objected to interventions in the external food environment at the expense of the school food environment. The external environment where they spend their *"own time"*, was perceived as being prioritised over government intervention in schools. There seemed to be a sense that it would be more impactful, and more acceptable, for interventions to focus on improving food provisioning in educational establishments where autonomy is ordinarily (and knowingly) restricted:

"Making school food healthier and more inclusive or have wider variety because then, students can eat something that they enjoy, and for not too

much money, and it'll be better for the health … the only reason students will pick unhealthy food opposed to a full meal is because it's much more affordable, right?"

(Student from Redbridge A1, aged 16–18)

3.3.2. Purchasing convenience food and drinks from non-hot food outlets

In addition to concerns around the shortcomings of the internal school food environment, participants expressed the belief that the policy does not address crucial parts of the external food environment contributing to poor diets. Participants argued that young people are much more likely to purchase confectionery, crisps, and sugar-sweetened beverages (SSBs) before and after school than takeaway food. Participants found these items more affordable and socially acceptable, and perceived them as readily available at all times of the day in the food environments where they spent time. As a result, they tended to believe that the policy also needs to tackle convenience stores selling an abundance of unhealthy snacks. Some participants explained that even if the policy resulted in fewer takeaways near their school, convenience stores would *"make up for"* any reduction in access to unhealthy foods:

"we have so many sweet shops in this area, which kind of makes up for it … it's not really that big of a deal that we've only got like one popular chip shop because everyone just goes to the sweet shop because we've got two just down there …"

(Student from Redbridge A2, aged 16–18)

Takeaway food was generally regarded as a *"rare"* *"treat"* acquired *"occasionally"* after school, and convenience food and drinks were seen as *"more often"* everyday purchases. This was attributed to the relative low cost and accessibility of the latter, with the foods on offer tending to be perceived as greater value for money than takeaway food. Participants frequently referred to purchasing multiple *"little bits and bobs"* as a *"snack"* at a time, particularly *"cheap sweets"* (confectionery and chocolates) that could be shared with friends:

"I think it's easier to go and buy sweets and, because of that, we do it more often, whereas the takeaway is more rare in that sense, in terms of the time that you have."

(Student from Redbridge A2, aged 16–18)

Participants also reported being tempted by product marketing and the associated social value of displaying 'trendy' products in the school environment. In contrast to the generic *"chicken and chips"* or *"pizza"* sold in the local independent takeaways, which are typically served in unbranded or lesser-known packaging, convenience stores were characterized as selling branded sweets such as *"Twangers"* and *"Push Pops"* or SSBs and energy drinks such as *"Boost"*, *"Lucozade"* and *"Mogu Mogu"*. Such product names seemed to be easily recognised amongst participants, often leading to animated discussions around their popularity and social value in school. Participants identified branded food and drink products as popular and valuable amongst young people for a variety of reasons, including their association with specific marketing to young people on social media or their perceived ability to increase productivity.

As most participants referred to specific school policies around bringing *"junk food"* (takeaway food and convenience food and drinks) onto site, convenience or non-hot food and drinks, generally with less overt physical and odorous features, were valued for their relative transportability and ease with which they could be consumed surreptitiously in class:

"I guess if it's sweets or crisps or something, you can put in your pocket, whereas you probably wouldn't do that with chips."

(Student from Redbridge A2, aged 16–18)

Across all participant groups, food and drinks purchased from convenience stores appeared to be associated more with everyday life than

foods from takeaways. Younger participants (generally prohibited from leaving school at break and lunch times) pointed out that this was partly because *"the sweet shops open early"* allowing students to *"buy stuff before school … and then … also buy stuff after school"*. However, discussions surrounding takeaway food consumption revealed that this was mainly because, regardless of age, participants found the food and drinks sold in convenience stores and newsagents more appealing, affordable, and socially acceptable:

> *"Sometimes if the bus is taking long, I'll get some sweets from the shop and just enjoy it while I'm waiting for the bus. And on the way back to home, I do that as well, but sometimes I just get chicken and chips. So I wouldn't get chicken and chips in the morning, but only after school."*
>
> (Student from Redbridge B3, aged 11–14)

> *"We obviously don't have like a lot of money to like buy a whole meal, so we'll probably just get something cheap. Like a lot of people will just get some like sweets from the corner shop."*
>
> (Student from Redbridge A1, aged 16–18)

3.3.3. Food delivery apps

Participants identified food delivery apps (FDAs) as elements of a rapidly changing food environment, both in and outside of school. While FDAs were not reported to be widely used by young people, participants seemed to anticipate and predict that they would present more of a problem in the future by establishing a new opportunity to access takeaway food. Links were made between the rise of FDAs and increased smartphone and debit card ownership, particularly by older participants with greater financial autonomy: *"it's [name of food delivery app] on our phone, we can access it* whenever" (Student from Islington A5, aged 16–17). For older participants, who were generally permitted access to their smartphones during the school day, FDAs were described as having the power to collapse both the physical boundaries of the management zone and the temporal boundaries of a short school lunchtime. FDAs facilitated access to a range of takeaway outlets ordinarily inaccessible on foot:

> *"So I guess, stopping takeaways would help, as in, from popping up around schools. But then now with [name of food delivery app], how helpful is that going to be? So it's difficult."*
>
> (Student from Islington A5, aged 16–17)

> *"I don't think it [management zones] would help because people still just go home and order off [name of food delivery app 1], [name of food delivery app 2] things like that."*
>
> (Student from Redbridge B3, aged 11–14)

Some participants specifically raised the issue of students using FDAs to order takeaway food to be delivered to the school site, particularly as *"a group of friends"* for *"celebrations"* like *"the last day"* of term. Participants expressed uncertainty around school policies on ordering food to school and the potential consequences of breaching such rules. In one interview, a chaperoning teacher reinforced the ambiguity surrounding this issue, stating that students are currently able to *"order a takeaway and meet them [the delivery driver] outside of the school site"* since it is not *"technically"* the school's *"business"* (Teacher from Redbridge A1) if the food is not delivered to the school reception. Participants described navigating this liminal space and ordering food *"secretively"* even when *"it's not allowed"*.

Participants expressed similar uncertainty over different FDAs' policies on delivering to school sites. While some reported instances in which FDAs generally refused delivery to their school, others spoke of individual drivers delivering orders *"secretly"*, often to just outside school gates. There was consensus amongst participants that FDAs remain largely unregulated in both the in-school and out-of-school environment and that any existing rules could be bypassed:

> *"Yes some people can order and provide, to be honest it depends on what delivery driver you get, some will just plainly just say no, but some will for the money, they'll come secretly."*
>
> (Student from Redbridge B3, aged 11–14)

4. Discussion

4.1. Summary of main findings

Many local authorities in England have introduced management zones around schools, yet little is known about the perspectives of young people, who are the stated target group for this policy. This qualitative study explored narratives of acceptability and perceived effectiveness of management zones amongst young people attending secondary school in LAs who had adopted management zones. We found that these young people were largely unaware of the policy both in general and in the context of their own school's local food environment. They identified other aspects of the food environment as important contributors to poor diets and were open to further intervention in the school and broader food environment. The shortcomings of the school food environment itself and the widespread availability of unhealthy foods and drinks from convenience and other stores nearby were identified as significant barriers to the effectiveness of management zones. They highlighted the important social role the food environment plays in their everyday lives and emphasised the need for alternative social infrastructure for socialising and passing time after school and on the weekends.

4.2. Contributions to the literature

Our findings revealed that management zones are generally acceptable to young people because they perceive that they do not noticeably change the existing food environment or compromise their current experience of it. Participant accounts revealed the influence of other aspects of the food environment on their diets, suggesting that takeaways are only one contributor to their consumption of unhealthy food and drinks. Previous research has highlighted the wide range of food environments through which adolescents can access unhealthy food and drinks in their everyday lives, including during school days, which often include travel through different spaces (Burningham and Venn, 2022; Caraher et al., 2014, 2016; Cowburn et al., 2016; Tyrrell et al., 2017).

Consistent with previous studies, food outlets identified as popular with young people were heterogeneous and encompassed fast food outlets, takeaways, convenience stores, and supermarkets (Crawford et al., 2017; Wills et al., 2015). Access to social space, the friendliness of staff and the convenience, affordability and taste of the food and drink available were cited as key factors affecting food-related decision-making. While proximity to food outlets was a consideration for younger participants, who were generally constrained to the school site at break and lunch times, older participants expressed a willingness to travel beyond the management zone if their needs were not being met. This finding suggests a connection between break and lunchtime stay-on-site school policies, which are largely implemented in schools for students up to age 16 years in England, and the potential of management zones to impact dietary behaviours (Baines and Blatchford, 2019). With the freedom to leave site during break and lunch times and in their free study periods, the older participants in our study had more time to access foods in the external food environment than younger participants.

In contrast to previous research, which primarily focused on takeaways and fast food, participants reported most of their purchases as convenience food and drinks on account of their relative value for money and ready accessibility at all times of the day, both before, during (if permitted to leave the school site) and after school (Forsyth et al., 2012; Patterson et al., 2012). The familiarity and social value of the branded products available, often heavily marketed to this demographic on digital platforms, were also described as important (Boyland et al.,

2020; Buchanan et al., 2018; Stead et al., 2011).

The association between perceived shortcomings in the school food environment and patronage of external food outlets emerged as a key finding in our interviews. Participants frequently described long school canteen queues and high prices as making the external food environment particularly enticing, and sometimes, necessary. The school food environment has been found elsewhere to shape young people's food purchasing and consumption behaviours in the external food environment (Caraher et al., 2014, 2016; Fletcher et al., 2014; Wills et al., 2015). In particular, the 'takeaway experience' was described at times as making up for the lack of time and space to socialise in school canteens. Participant accounts of struggling to have enough time to eat and socialise are consistent with recent research highlighting a significant reduction in the length of lunchtimes in UK secondary schools (Baines and Blatchford, 2019).

Consistent with previous research, our findings illustrate young people's attachment to takeaway and fast food outlets as social spaces to gather with friends, 'hang out' and eat together (Burningham and Venn, 2022; Shaw et al., 2023; Thompson et al., 2018). Participants spoke of takeaway and fast food outlets as compensating for the lack of accessible and safe social infrastructure for young people, particularly during colder months and for those requiring access to Wi-Fi (Moore et al., 2024; Webster, 2016). In line with this finding, a recent survey into public acceptability of management zones found a correlation between 16 and 17 year olds who perceive takeaways as important places for socialising *and* those who believed that young people would continue to patronise takeaways even if there were fewer near schools (Keeble et al., 2024). This further highlights the importance of takeaways in the social lives of young people and its related implications for policy acceptability.

Our findings suggest that changes in the digital food environment, particularly increased access to food delivery apps, which gained popularity as a result of the COVID-19 pandemic, may become a more significant barrier to management zones in the future (Granheim et al., 2022; Kalbus et al., 2023). Although participants described schools as in some ways preventing access to FDAs, there was a sense that potential barriers could be overcome. The schools in this study did not have specific policies on ordering food to the school site, and our participants reported no direct evidence that the food delivery aggregator platforms have banned deliveries to schools.

4.3. Implications for policy and future research

Prior to these interviews, participants in this study were generally unaware that management zones were in operation around their school. Given the policy's focus on restricting new takeaways, participants did not perceive any discernible changes in the external food environment. While recent evidence indicates that the policy has, to some extent, achieved its stated aim of reducing the growth of takeaways (Rahilly et al., 2024a, 2024b) participants seemed to conflate the lack of concrete change in the food environment with policy ineffectiveness.

While our other research indicates that management zones may decrease the expected growth of takeaways in the longer term (Rahilly et al., 2024a, 2024b), they do not directly address other aspects of the food environment that our participants deemed to impact their food purchasing behaviours. Therefore, management zones would be potentially more effective as part of a broader suite of policies designed to improve dietary health (Brown et al., 2021; Downs and Demmler, 2020). The ubiquitous presence of convenience foods and drinks around schools means that young people's exposure to unhealthy foods is likely to persist, even with a potential *reduction* in takeaway outlets.

As found in other studies, our participants expressed a willingness to consume healthier options yet generally struggled to source affordable healthier alternatives near their school (Calvert et al., 2020; Kelly et al., 2021). Participants frequently described their local food environments in critical terms that resonate with the concept of 'food swamps', where

a saturation of outlets selling unhealthy foods ostensibly 'swamp' healthier alternatives (Fielding and Simon, 2011; Rose et al., 2009).

Participants believed that issues with the school food environment were pushing students further toward making unhealthy choices in the external food environment. Enhancing the taste and affordability of school food, along with mitigating long queues and allowing more time for socialising by extending school lunchtimes, were identified as potential strategies to encourage students to stay on site at mealtimes. When schools are typically competing with an abundance of cheap convenience food that is readily available in the external environment, policies aimed at improving young people's relationship with school food in ways that are qualitatively important to them are crucial. With reports that FDAs are delivering to school premises in our study and others, schools may also be increasingly competing with unhealthy foods delivered directly into the school environment (Royal Society for Public Health, 2016). The regulation of FDAs to prohibit deliveries to schools could further support schools in cultivating a healthier food environment.

While the policy envisages a primary motivator in takeaway proximity, in reality the factors driving young people's diet-related behaviours are more complex. For instance, although the policy may reduce exposure to takeaways in the long-term, it will not remove the secondary, and in some cases more important need for safe and welcoming spaces for socialisation. Given the social value of food outlets, demonstrated in this study by the young people's use of takeaway and fast food outlets as social spaces, interventions should also consider young people's social and emotional needs (Hawkes et al., 2020; Isaacs et al., 2022).

4.4. Strengths and limitations

This study generated unique data highlighting the perspectives of an important target population of management zones i.e. young people attending secondary school in England. The views of young people are not always considered in the policy process despite their ability to provide important and useful insights into the mechanisms and potential effectiveness of policies and interventions (Macauley et al., 2022; Rudner and Wilks, 2013). The observations and insights of young people from this study could be beneficial for LAs considering implementing management zones around schools.

A strength of this study was the rich, in-depth data gained from go-along interviews. While participant engagement in these interviews may have been inhibited by the presence of the teacher/school chaperone, they were able to freely lead both the direction of the trip and the discussion. This facilitated a dynamic and fluid exploration of the food environment in their own words. Including a heterogenous sample of young people in terms of age (11–18 years old) and socioeconomic background contributed to the development of themes reflecting the perspectives and experiences of secondary school students at different educational and developmental stages.

Although schools were selected to represent a broad socioeconomic spectrum, this was only partially achieved, with fewer students included from the lowest deprivation deciles. Additionally, despite efforts to achieve gender balance, the inclusion of two single-sex schools resulted in a higher number of female participants. This overrepresentation of female participants may limit the generalisability of findings, as gender-specific factors could influence how students perceive and interact with the food environment. Furthermore, since our research is limited to the perspectives of secondary school students, future research into the perspectives of primary school students would allow for greater insight into the policy's influence on dietary behaviours across age groups.

This study was limited to urban areas of London and therefore our findings may lack generalisability to other areas of the UK. However, while young people's experiences of the food environment may vary in character and nature, it is possible that their ideas on management zones may be transferable to other contexts. That said, future research in rural

areas is needed to understand perceptions of management zones in a wider range of social and physical contexts.

5. Conclusions

In this research, we explored young people's perspectives on management zones around their schools and shed light on their wider experience and understanding of the food environment. While the policy's focus on reducing future growth of takeaway outlets was acceptable amongst participants, their perception was that there had been limited 'change' in the food environment. In turn, this decreased confidence among our sample in terms of the ability of this policy to influence young people's complex food behaviours. Interventions and policies should therefore consider the wide range of determinants of young people's relationships with food. This involves considering the impact of unhealthy foods sold in food outlets other than takeaways and the influence of inadequate school food environments on young people's interaction with the food environment more broadly. In this study, we also showed that young people are willing to engage in discussion about public health strategies. Including their voice more deeply in the policy-making process could serve to increase acceptability of interventions and therefore maximise impact.

CRediT authorship contribution statement

B. Savory: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **C. Thompson:** Writing – review & editing, Methodology, Funding acquisition, Formal analysis, Conceptualization. **S. Hassan:** Writing – review & editing, Methodology, Formal analysis, Conceptualization. **J. Adams:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **B. Amies-Cull:** Writing – review & editing. **M. Chang:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **D. Derbyshire:** Writing – review & editing. **M. Keeble:** Writing – review & editing. **B. Liu:** Writing – review & editing. **A. Medina-Lara:** Writing – review & editing. **O.T. Mytton:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **J. Rahilly:** Writing – review & editing, Conceptualization. **N. Rogers:** Writing – review & editing. **R. Smith:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **M. White:** Methodology, Funding acquisition, Formal analysis, Conceptualization. **T. Burgoine:** Writing – review & editing, Validation, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **S. Cummins:** Writing – review & editing, Methodology, Funding acquisition, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no competing interests.

Data availability

The data that has been used is confidential.

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