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A qualitative study investigating food choices and perceived psychosocial influences on eating behaviours in secondary school students.

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## Abstract

**Purpose:** Childhood obesity is a major global health concern. Understanding children's and adolescents' eating behaviours, and promoting healthier behaviours, is key for reducing the negative health outcomes associated with obesity. The current study explored the perceptions of healthy eating behaviours and the influences on eating behaviours amongst 11-to-13-year-old secondary school students.

**Design/methodology/approach:** Nine semi-structured same-sex focus group discussions were conducted in schools located in deprived areas of England, with the discussions subjected to a thematic framework analysis.

**Findings:** Three main constructs were identified in the analysis: (1) *eating patterns and lifestyle*, (2) *social influences*, and (3) *environmental influences*. Participants understood what healthy eating behaviours are, and the benefits of eating healthy, yet reported irregular mealtimes and consuming unhealthy snacks. Students reported that their parents and fellow student peers were strong influences on their own eating behaviours, with girls subjected to being teased by male students for attempting to eat healthily. Finally, students perceived that unhealthy foods were cheaper, tasted better and were readily available in their social environments than healthier options, making healthier behaviours less likely to occur.

**Originality/value:** Findings indicate that students had a good understanding of healthy eating behaviours but did not always practise them and are seemingly influenced by their social and environmental context. The promotion of healthier eating in this age group needs to challenge the misperceptions associated with the accessibility and social acceptability of unhealthy food items.

**Key words:** *Child; School; Dietary Behaviour; Perceived Influences; Qualitative*

## Introduction

Childhood obesity is one of the most serious global public health challenges for the 21st Century according to the World Health Organisation (Public Health England, 2016). Recent research has indicated that 63 % of adults in England are either obese or overweight, with 34% of children being overweight or obese by the age of 11 (NHS, 2018). Younger generations are becoming obese at an earlier age and remaining obese for longer (Johnson et al., 2015), this can have associated risks later in life, including an increased risk of heart disease, diabetes, and liver disease (Ipsos, 2014; NHS, 2018). Eating behaviours that are formed in adolescence and continue into adulthood can become resistant to change (Winpenny et al., 2017). Adult weight problems may stem from problematic eating behaviours that start in childhood; therefore, interventions and research should focus on improving childhood eating behaviours to minimise longer-term negative health outcomes (Craigie et al., 2011; Wisniewski and Chernausek, 2009). It is crucial to understand why adolescents make unhealthy food choices to identify effective ways of improving their dietary behaviours.

Children who are progressing to secondary education (typically aged between 11-12 years old in the UK) are at a stage in their lives where they have increasing independence, including greater control over their own diets and eating behaviours (Bassett et al., 2008; Contento, 2010). Research suggests that transitioning into early adolescence can be accompanied by undesirable changes in eating behaviours (Lytle et al., 2000), for example, the increased consumption of sugary-sweet beverages and nutritionally-poor snacks (Bauer et al., 2009; Siega-Riz et al., 1998) and the lack of consumption of healthy foodstuffs, i.e. fruit and vegetables (Larson et al., 2007). Teenagers in England are one of the heaviest consumers of sugar-sweetened beverages compared to the rest of Europe (Hagell et al., 2013) and as many as 17% of secondary school students consume foods high in fat, salt and sugar and low in nutritional value on a daily basis (Zahra et al., 2014). British adolescents regularly do not meet

national nutritional guidelines, for example just under half (48%) of adolescents do not eat the recommended five portions of fruit and vegetables a day (Stevenson et al., 2007). Studies have shown that although adolescents have the correct knowledge of which behaviours constitute healthy eating, for example eating the recommended five-a-day portions, they do not necessarily practise these behaviours (British Nutrition Foundation, 2015), suggesting that there could be other influences on dietary behaviour aside from food knowledge. There are also some sex differences in food preferences and dietary behaviours in this age group (Feeney et al., 2014; Ogden et al., 2012), such as adolescent girls having a higher liking for fruit and vegetables compared to boys (Wind et al., 2007), and boys tending to eat fewer fruit, vegetables, low-fat foods, and drink more sugar-sweetened beverages, than girls (Beer-Borst et al., 2000; Neumark-Sztainer et al., 1998).

Factors influencing obesity can include societal, economics, cultural, environmental and genetic factors (Albuquerque et al., 2017). Obesity levels in children have been strongly related to socioeconomic status (SES) (El-Sayed et al., 2012), with obesity prevalence among children in the UK increasing in accordance with the increase of socioeconomic deprivation (NHS, 2019). The prevalence of overweight and obese 11-15 year olds is nearly double in the most deprived areas of the UK compared to the areas with the lowest levels of deprivation (McLennan et al., 2011; NHS, 2018). Adolescents living in deprived areas of the UK are more likely to report frequently consuming a large amount of fast food and sugary-sweetened beverages, and consuming a limited number of fruit and vegetables (Noonan, 2018). Adolescence is an important time in which to develop and maintain a healthy diet, particularly as this is a key stage of growth and development (Conolly and Davies, 2018). Therefore, more research is needed to understand barriers and influences to having healthy dietary behaviours within this population.

There is a distinct lack of qualitative research investigating the influences on 11-13-year olds' eating behaviours despite the importance of understanding the influences on healthy eating behaviours in this key age group, especially in socioeconomic deprived areas. Previous research has tended to sample either primary school-aged children (aged up to 11 years) or participants who are aged 16 years and older, with limited research focusing on secondary schools in deprived areas in the UK. Therefore, the purpose of the current qualitative study was to explore the perceived psychosocial influences associated with healthy and unhealthy food choices amongst secondary school students living in socially deprived areas in England. In addition, the study explored the perceived barriers to healthy eating and investigated possible sex-specific differences in students' opinions and perceptions related to eating behaviours.

## **Methods**

### *Design*

This study took a qualitative approach using focus groups and thematic framework analysis (Ritchie and Spencer, 1994) to analyse the data and to allow an exploration of possible differences in views between sexes. Nine semi-structured focus groups (5 girls-only and 4 boys-only) were conducted with secondary school students from May to July 2016. A focus group design was employed to help obtain a greater level of understanding of perceptions of students through the flow of conversation. Krueger (2002) suggest collecting data via focus groups is beneficial because it allows participants to interact, which leads to a greater depth of conversation allowing for a better understanding of the topic. Ethics approval was gained from the Ethics Committee at Staffordshire University.

### *Participants*

Students from two secondary schools in deprived areas of the North (School A) and Midlands (School B) of England were recruited for this study. Unemployment rates for the surrounding areas of the schools were 35.3% and 30.8% respectively and both schools' surrounding areas fell within the 30% most deprived areas of England (Smith et al., 2015). Students aged 11-13 years old (within the English schooling system these students will be in years (grade) 7 or 8) with opt-in parental or guardian written consent took part in the study. Nine focus groups (6 x School A and 3 x School B) with a total number of 46 participants (21 boys and 25 girls) were conducted, with focus groups ranging in size from 4-7 participants.

### *Materials*

A set of standardised open-ended questions and prompts were used to guide the discussions. The questions helped to investigate the perception of the students' barriers, influences and facilitators to healthy eating, and, potentially, how unhealthy behaviours could be improved.

### *Procedure*

Both schools sent letters and opt-in consent forms explaining the nature of the study to parents of all students aged 11-13 years old (those in years (grade) 7 or 8). The schools allocated a classroom to be used to conduct the focus groups. Prior to the commencement of the discussions, participants were asked to read an information sheet outlining the topic area to be discussed. Following this, participants were asked to agree to a set of guidelines pertaining to the confidential nature of the group discussion and the conduct of the discussions. Prior to starting the discussions, the students were asked to sign consent forms in addition to the

parent/guardian opt-in consent forms. The focus group discussions lasted an average (mean) time of 26 minutes. The focus groups were recorded with a Dictaphone and transcribed verbatim, with all identifying information removed and real names replaced with pseudonyms.

### *Data Analysis*

The transcripts were entered into NVivo Pro 11 software (QSR International Pty Ltd, 2016). The analysis was guided by Framework Analysis stages (Ritchie and Spencer, 1994) which were: *familiarization*, this required immersion in the data; *identifying a thematic framework*, involved returning to the data to identify key issues, concepts, and themes, by which the data could then be referenced; *indexing*, is the process of applying the framework to the data; *charting*, charts were created to help to start to understand the range of attitudes and experiences for each issue or theme; and *mapping and interpretation*, reviewing all the charts and the notes as a way of interpreting the data as a whole. The first author (SC) developed the initial broad framework. At the indexing stage, an independent researcher reviewed the broad framework and applied it to a proportion of transcripts independently. The findings were then discussed to check for consistency in application of the framework and understanding of the descriptions of individual constructs. No changes to the framework were made at this stage. Once the final framework was developed, construct names and descriptions, along with corresponding quotes, were checked again by all three authors for meaning and consistency. Some of the names of the main constructs were changed to ensure they reflected the construct content.

### **Results**



The study's results are presented according to the three main constructs of the framework, which are: (1) *eating patterns and lifestyle*; (2) *social influences*; (3) *environmental influences*

### **Eating patterns and lifestyle**

This main construct describes the participants' understanding of healthy eating patterns and the potential benefits of these behaviours. This construct has two sub-constructs relating to *eating patterns* and *lifestyle benefits*.

#### ***Eating patterns***

The participants typically discussed healthy eating behaviours in terms of how much food was consumed and that having a balanced diet was considered a healthy pattern of behaviour: "*Like a balanced diet and stuff like*" (Liam, Year 7). Consequently, the participants believed that to improve eating behaviours they should reduce the amount of unhealthy food that they consume: "*I think we need to control it*" (Emily, Year 8). Whilst the participants expressed these views, they also reported that they did not always demonstrate these behaviours, with many reporting that they do not have a well-balanced diet, which included not eating regular healthy meals:

Mia, Year 7: "*'cause they have already ate something in the morning like pack of crisps.*"

Researcher: "*So they already ate something in the morning, so they are not hungry?*"

Mia, Year 7: "*Yeah it has made them really hyper.*"

Charlotte, Year 7: "*I don't eat anything all day and when I get home all I eat is a packet of noodles*"

Regular unhealthy snacking had a seemingly-negative effect on the consumption of regular meals for participants of this age; *“They will go [to the] shop in the morning and buy their dinner it is just like loads like massive packs of crisps”* (Charlotte, Year 7). Not only did participants suggest they do not eat regular meals, but sometimes they do not eat anything at all:

Niles, Year 8: *“Some people actually don’t get anything they just go to the football pitch straight away.”*

Reuben, Year 8: *“Sometimes I don’t”*

Nathan, Year 7: *“I eat nothing”*

It seems that within this age group regular meal consumption is affected by unhealthy snacking; however, this needs to be further investigated to understand why this is the case and whether encouraging regular meals would help reduce unhealthy snacking.

### ***Lifestyle benefits***

Participants identified several short-term lifestyle benefits associated with a healthy diet: *“See like if I like eat fruit and that in the morning I would probably eat I would probably be more energetic ... erm ... yeah”* (Chung, Year 7). Boys discussed that the benefits to eating more healthily would be that they would be better at sport and exercise-related activities, for example, Nathan and Archie in Year 7 stated that they would *“Play sports better”* and *“You get fitter”*, whereas Paul (Year 7) suggested that you would improve academically: *“You get better in lessons because your brain works well on healthy food than it does on like chocolate”*. In contrast, girls discussed the benefits of healthy eating in terms of not gaining weight, *“You*

won't be fat" (Sadie, Year 7), "So if you eat healthy you get skinny" (Ashia, Year 7), and not being bullied due to being overweight, "You don't get picked on" (Sophie, Year 8). Participants suggested unhealthy eating habits could be improved by increasing their awareness of the associated lifestyle benefits. For example, "I think if people knew what, what the benefits of eating healthy would ... have on them maybe they wouldn't eat so much bad food or junk food" (Noah, Year 7) and "Being able to see like what it does for your body...food... what the advantages of eating healthy" (Liam, Year 7).

However, both sexes were seemingly aware of the lifestyle benefits related to maintaining a healthy diet, e.g. "Wouldn't feel ill all the time" (Hazel, Year 8), as well as an understanding of how unhealthy eating behaviours could lead to ill-health. For example; "You get ... erm ... what's it called now like high blood pressure" (Reuben, Year 8), "You have got a chance of not becoming ill so if you like eat and eat, eat like really unhealthy food then you have got a chance of becoming more ill" (Alison, Year 7). The potential threat of future ill health did not seem to be enough of a motivator to discourage unhealthy eating behaviours amongst this age group. For example, the students also discussed eating unhealthy foodstuffs in their diets which became part of their everyday routine: "Boys at the school - not mentioning any names – go [to the fast-food outlet name] before school and go afterwards that's like their daily routine" (Toby, Year 8). Students showed an awareness of the short-term lifestyle benefits of having a healthy diet and the potential long-term consequences of an unhealthy diet; however, possessing this knowledge did not seem to affect current eating behaviours in this age group.

### **Social influences**

This construct describes what participants perceived to be the social factors that influence their eating behaviours. This has three sub-constructs, which discuss *family influences*, *peer influences* and *teasing*.

### ***Family influences***

The initiation and maintenance of unhealthy eating behaviours was viewed as being influenced by family, specifically the food obtainable at home: *“If the parents kept buying loads of food like loads of chocolate and all that”* (Alexa, Year 8); also by the food parents provided for students to take to school: *“If your mum and dad only put unhealthy stuff in your lunch box”* (Rashida, Year 7). Participants also suggested it was influenced by family lifestyle and culture: *“I think it depends how you been brought up because if the rest of your family is fat like or really chubby or obese like you might want to follow them and they don’t really buy healthy stuff”* (Tasmin, Year 8) and also if *“You’re the only one eating healthy while everyone is eating fatty foods”* (Logan, Year 7). The participants tended to discuss the negative impact of their family on their dietary behaviours and that their own eating behaviours could be improved if their families’ behaviours were healthier: *“I would probably get encouraged by seeing my friends and family eat healthy”* (Layla, Year 7); *“Probably if you get your mum and dad to help you they would know”* (Ellie, Year 7).

### ***Peer influences***

Participants discussed at length about peers’ behaviours and how they affected their own dietary behaviours. Participants suggested that because their peers had unhealthy eating behaviours, and that they wanted to be like their peers, many wanted to avoid feeling excluded because of their dietary behaviours: *“Others, their friends want to eat unhealthy and they feel*

*left out if they eat healthy... they... ” (Tasmin, Year 8); “Some people eating fatty foods around them and they would feel left out so then they would eat fatty foods as well” (Logan, Year 7). Furthermore, the participants felt that if their friends were enjoying unhealthy food so should they: “Why don’t I go and get one ‘cause obviously clearly my mates are enjoying it why shouldn’t I?” (Liam, Year 7). Conversely, the participants suggested that if everyone else ate healthily then they would be encouraged to do the same: “If people around you started to eat healthier that would encourage you to eat healthy” (Aza, Year 7). It seems that 11-13 year old individuals are influenced by what they think are socially acceptable behaviours, and if peers adjusted their behaviour it would encourage an individual’s behaviour to change: “If you see your friends eating something healthy and like they are enjoying it, so you would think... oh they’re enjoying it, so I will try it“ (Ashia, Year 7). Therefore, it may be that secondary school students’ perceptions of healthy eating needs reframing to make such behaviours be perceived as more socially acceptable and to promote healthier food choices.*

### ***Teasing***

Interestingly, only girls, not the boys, discussed the influence of teasing on their dietary behaviours. Girls discussed how they found it difficult to have a healthy diet because they felt uncomfortable if they choose to eat healthily, and that they may be socially excluded if they ate more healthily than their male peers:

Laura, Year 8: *“Boys are the main ones that take the mick out of people, like, basically...weight... by their weight and how they look and everything...”*

Emily, Year 8: *“I don’t think they think about what they are saying it really hurts.”*

Girls also talked about finding it difficult to eat healthy foods because they felt judged by the boys: *“If there was a boy around then they wouldn’t [eat healthy food] because, they, the boys just go “Uurgh why you eating that? That is disgusting!”* (Hayley, Year 8). Boys were perceived to set the precedent on what the acceptable eating norms are at their school, and if the girls do not conform to these, then they are made to feel uncomfortable.

Harper, Year 7: *“They leave all the rubbish and they like they chuck it at the Year 7’s”*

Sadie, Year 7: *“They always throw energy drinks”*

Harper, Year 7: *“Bottles, wrappers, tip crisps over us”*

In addition to teasing, the girls discussed how they were forced to eat unhealthy foods by the boys; *“Sometimes eat chocolate because you are forced to, people just force them in to your pockets and everything”* (Tasmin, Year 8). The girls suggested that they would choose to eat more healthily if they did not feel that the boys disapproved: *“If everyone like did it, boys and girls, if everyone did it especially the boys”* (Isla, Year 8). The girls discussed being tormented by the boys in their school if they do not conform to the eating practices set by the boys. There was no indication in the group discussions that the boys themselves experienced teasing if they ate healthy foods at school.

### **Environmental factors**

This construct describes what the participants perceived to be the environmental factors that influenced their dietary choices. This main construct has three sub-constructs, which discuss *unhealthy food cues, perceived food availability and price.*

### ***Unhealthy food cues***

Seeing other people eat unhealthy food was discussed as being a strong influence on personal consumption of unhealthy food: *“If you see a load of people eating chips you just know you want some”* (Nathan, Year 7). Just the mere sight of unhealthy food had a strong influence on eating choices, *“Just see chocolate”* (Emma, Year 7); *“Seeing slushies”* (Mia, Year 7), and so could the sight of empty junk food wrappers: *“keeping seeing wrappers all over the place”* (Layla, Year 7). The smell of certain unhealthy foods was also a cue that would influence the participants’ eating behaviours: *“Smelling it”* (Layla, Year 7). The media, predominantly television adverts, were discussed as having a significant effect on food choices: *“Advertisements [television] can cause you to stop eating healthy ‘cause if you’re sat eating a banana then you see a really nice McDonalds you are going to eat in McDonalds aren’t you?”* (Noah, Year 7). Not only did television adverts influence the participants’ eating behaviour, some felt that they were being directly targeted by these adverts: *“Like the adverts are aiming [at] us young children”* (Niles, Year 8). The students discussed how they thought adverts for unhealthy foods were trying to demonstrate what is acceptable for children to eat, and what is affordable and appealing to children.

### ***Perceived food availability***

The participants believed that they had lots of unhealthy food available to them in their immediate environment including at school, their local shops and at home, compared to healthy alternatives: *“They don’t really have healthy stuff anymore you have like baguette pizzas - the healthiest thing here [at school] is probably a sandwich”* (Luca, year 8) and participants also suggested *“If school sold healthy foods and sold less fatty foods”* (Logan, Year 7). The healthy food provided at school was less accessible compared to the unhealthy options: *“They have these pots of fruit salads and... but they have them right at the very back in the fridge yeah”*

(Ashia, Year 7). This is not just at school but also at the supermarket and shops as well: *“Sometimes I think that when you go to a supermarket, they put the fruit at the bottom so you don’t see it very well and the junk food at the top ‘cause you look there”* (Alison, Year 7). Participants were making unhealthier choices because unhealthy foodstuffs were perceived to be more available, more visually accessible, and because healthy alternatives are harder to obtain. There was the perception amongst participants that they had limited choice in their diets as there are no, or few, healthy options available at school or at home: *“Yeah there is only like a little place where they are and the rest is all the fatty food”* (Harper, Year 7) and *“Then you have got all like the junk food like pizza, garlic bread and all that on the right in front of you”* (Ashia, Year 7).

Participants discussed that they have less restriction regarding their eating behaviours outside of the school environment and more autonomy to choose what they want to eat or drink:

Hayley, Year 8: *“Well in school we do have these policies, where you are not allowed to drink energy drinks, but outside of school you are just like ‘oh I am not in school any more, you can’t tell me what to do’, so I can do what I want and go the shop to buy energy drinks”*.

The convenience and ease of obtaining unhealthy foods aided these choices: *“Yeah there is literally just a shop at the end of the road”* (Piper, Year 8) and *“‘Cause that is the only thing that they can just like eat and go”* (Mia, Year 7). The lack of restrictions, and the apparent availability and convenience of unhealthy foods outside of school, lead to the increased consumption of unhealthy foods. Unhealthy foods were seen as being more accessible and considerably cheaper than healthier options, but if healthy foods were more within the



participants' immediate attention they may be more inclined to choose them: *"Like when you walk in the door instead of it being a chocolate the first thing you see, be fruit the first thing you see"* (Rashida, Year 7).

Furthermore, having a wider variety of healthy alternatives at school was discussed as a way of encouraging healthier eating behaviours: *"Yeah if it was healthy stuff, then yeah, more people would probably eat healthier"* (Toby, Year 8) and also trying to make healthier choices when there is the option: *"When you see shortbreads on the counter then you see an apple next to it, pick up the apple"* (Tim, Year 7). However, participants also discussed the perception that unhealthy foods are more desirable as they taste better than a healthier alternate: *The taste, or things like cake, for me like, cake's really nice - if there was an apple or a cake, I would obviously choose the cake"* (Liam, Year 7). Seemingly, the perceived and anticipated taste of these unhealthy foods over healthier choices influenced choice and potential consumption. *"You are obviously are going to go for the one that tastes better, I would say bacon obviously"* (Liam, Year 7). Providing a healthy alternative alone may not improve eating behaviours, as the perceived taste and desirability of certain foods seems to be associated with their preferred consumption not necessarily the availability.

### **Price**

Unhealthy food was discussed as being cheaper compared to healthy foods, *"Healthy food is more expensive than sweets"* (Sadie, Year 7), and only what the participants could afford to buy, *"Maybe like ... erm ... you have only got enough money to buy that sort of thing and you are really hungry so you have got to eat it"* (Reuben, Year 8), particularly as unhealthier foods were more likely to be on sale as a 'special offer': *"Yeah 'cause when you go like to the shops you see big bags of crisps for a £1 you think aww yeah"* (Niles, Year 8). Unhealthy food choices were typically rationalised in relation to healthy alternatives being too expensive, with sweets

and junk food seen as being cheaper because the prices were aimed at children: “Cause they know they [children] will buy it” (Layla, Year 7). However, it was unclear if the participants would actually search for a healthy alternative if these discounted unhealthy snacks were the first thing that they see when they enter a shop: “I used to walk with some mates and they were on offer for a quid - they used to get them every day” (Alison, Year 7).

## **Discussion**

The aim of this study was to explore the psychosocial influences associated with healthy and unhealthy food choices amongst 11- to 13-year-old secondary school students living in deprived areas, including the perceived barriers and facilitators associated with healthier food choices. A series of focus group discussions conducted with secondary school students elicited three main framework constructs: (1) *eating patterns and lifestyle*, (2) *social influences*, and (3) *environmental influences*. The framework demonstrates what students understand to be healthy eating behaviours, the benefits of healthy eating behaviours versus unhealthy behaviours, what the influences on eating behaviours are, and potential implications for future research.

### *Summary of main findings*

Students appeared to largely understand what healthy eating patterns are, and in line with prior literature (Neumark-Sztainer et al., 2002), the participants disclosed that they did not always engage in these behaviours themselves. Participants discussed they often do not have regular eating patterns because they would replace regular meals (breakfast, lunch and tea) with unhealthy snacks (high energy snacks) or skip meals completely. Research has suggested that

adolescents who frequently snack are more likely to skip main meals (Savidge et al., 2007) which can be detrimental to health, as having regular meal patterns is related to healthier food choices (Kelishadi et al., 2017) and better nutritional intake (Larson et al., 2007). However, there is limited research that investigates the long-term effects of unhealthy snacking on overall diets of adolescents. The findings also demonstrated that participants know about the short- and long-term implications of healthy eating patterns but this does not seem to be enough to deter them from unhealthy eating behaviours. Prior research has suggested that adolescents have a lack of concern over eating a healthy diet (Tyrrell et al., 2015) which may be associated with perceptions that they are too young to worry about longer-term consequences of ill health due to a poor diet till much later on in life (Neumark-Sztainer et al., 1999). Lastly, participants suggested that their social and environmental surroundings directly affected their eating behaviours.

The present study's findings suggest that adolescents' social surroundings have an impact on their dietary behaviours, including the influence of the family home environment and, most notably, peer influences at school. Interestingly, participants typically describe family, and peers even more so, as having a *negative* influence on their eating behaviour by encouraging more unhealthy behaviours, which potentially could make it difficult to change behaviour. Adolescent peers have been identified as having a strong influence on adolescents' eating behaviours (Kumar et al., 2016), as individuals at this age become less dependent on their families, develop strong peer networks and have a strong need for peer approval (Coleman, 2011; Winpenny et al., 2017). Participants in this study suggested that they wanted to be similar to their peers, so they would match what they believed their friends were eating, and they suggested if their friends had healthier eating behaviours they would too. Individuals at this age may not want to be seen to be different in terms of their eating behaviours and use

the perceived peers' behaviours as a way of modelling their own behaviour to conform to perceived eating norms (Coleman, 2011).

A novel feature of the present study's findings are the sex differences in the perceived social influences on eating behaviour. Girls perceived that boys were judging them and teasing girls who did not conform to what boys' thought was a socially acceptable eating behaviour. One explanation may be perceived 'opposite-sex norms' which assume that an individual's behaviour is affected by how they think the opposite sex think they should behave (Hummer et al., 2012; LaBrie et al., 2009). Girls within this study were seemingly influenced by the opposite-sex norms set by the boys to eat more unhealthy foods when boys were present. This suggests that the sexes differ in perception which may influence eating behaviours within this age group and may need addressing within future research.

The framework analysis in this study also outlines environmental factors that students perceived as being barriers to consuming more nutrient-rich healthy foods. For example, observing other people eat unhealthy food and seeing certain food advertisements provided cues to eating unhealthily, which may lead to an increase in consumption of unhealthy food (Borzekowski and Robinson, 2001; Gupta et al., 2017). Furthermore, our findings suggested that there was the perception that there was little or no healthy food obtainable to students in school and at the local shops, which in turn affects food choices. Other studies have confirmed, that (low) availability of healthy food is a perceived barrier to food choice (Kumar et al., 2016). In sum, students seem to hold the perception they consume unhealthy food because healthy food is less available and what is available is expensive and not as desirable as an unhealthy option.

### *Strengths and limitations*

In terms of strengths of the present study, the use of Framework Analysis has helped to retain the individual voices of the students, understand students' views of eating behaviours and identify potential sex differences in terms of healthy eating behaviours and perceived influences on eating behaviours. Similar issues with eating behaviours and perceived peer pressure were common to both schools sampled in this study. This is important, as children from the most deprived areas are twice as likely to become obese in adulthood (McLennan et al., 2011), so understanding their views and motivations for engaging in certain eating behaviours is important for interventions targeted at this specific population to help improve dietary behaviours. The qualitative approach taken in this study did not aim to make comparisons (for example, between age groups or poor and rich neighbourhoods), nor did it aim to identify specific groups that are prone to eating more unhealthy foods. Therefore, future quantitative research designs could explore differences between eating patterns, lifestyle, social influence and environmental influence would be useful. Although the discussions provided insight into the perceived social influences on eating behaviours, these relationships need testing quantitatively to provide further support for the role of perceived norms on healthy eating behaviours in this age group.

#### *Implications for future research*

Due to the various factors within the participants environment, it is impossible to propose any singular intervention to reduce obesity levels within this population. However, the qualitative findings from this study suggests how future interventions could be developed. Firstly, participants repeatedly expressed their lack of regular meals in relation to their frequent consumption of unhealthy snacks; therefore, future interventions in this 11- to 13-year-old age group should consider targeting the improvement of regular meal consumption to reduce

unhealthy snacking. Secondly, the analysis suggested that participants generally understood what healthy eating behaviours were, but did not always practice them, and their food choices were dictated by their social and environmental surroundings. Therefore, future interventions should target perceive influences on dietary behaviours rather than just aiming to improving healthy eating knowledge alone. Finally, the framework highlighted that participants' unhealthy eating behaviours were heavily influenced by their socially-connected peers, and, for girls, boys had a negative impact on their food choices through teasing. In relation to this, more research is needed to investigate the effect of perceived sex-related norms on dietary behaviours. Future interventions should consider sex-specific interventional messages, potentially investigating the effect of both same sex-norms and opposite sex-norms to help promote peer acceptance of healthy eating within this age group.

### **Conclusion**

The current study explored the perceived psychosocial influences associated with healthy and unhealthy food choices via a series of focus group discussions with 11- to 13-year-old secondary school students from deprived areas. The results indicated that students generally understood what healthy and unhealthy eating behaviours patterns are, and what the long-term health effects of their eating behaviours could be, but the students openly acknowledged that they often have irregular meals which were associated with unhealthy snacking behaviours. Students' dietary behaviours were determined by the perceived influences of their social and environmental surroundings, particularly the perceived behaviours of their peers and, for girls, the consequences of not adhering to social norms set by boys at their school. The results indicated that if healthy eating behaviours were perceived to be more socially acceptable and more commonplace amongst their peers, then the students would be encouraged to eat more

healthily. Therefore, interventional strategies which aim to improve food choices and eating behaviours for this 11- to 13-year-old age group need to promote the perceived social acceptability of healthy eating (Calvert et al., 2019).

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### References

- Albuquerque, D., Nóbrega, C., Manco, L. and Padez, C. (2017), “The contribution of genetics and environment to obesity”, *British Medical Bulletin*, Vol. 123 No. 1, pp. 159–173.
- Bassett, R., Chapman, G.E. and Beagan, B.L. (2008), “Autonomy and control: the co-construction of adolescent food choice.”, *Appetite*, Vol. 50 No. 2–3, pp. 325–332.
- Bauer, K.W., Larson, N.I., Nelson, M.C., Story, M. and Neumark-Sztainer, D. (2009), “Socio-environmental, personal and behavioural predictors of fast-food intake among adolescents”, *Public Health Nutrition*, Vol. 12 No. 10, pp. 1767–1774.
- Beer-Borst, S., Hercberg, S., Morabia, A., Bernstein, M.S., Galan, P., Galasso, R., Giampaoli, S., et al. (2000), “Dietary patterns in six European populations: results from EURALIM, a collaborative European data harmonization and information campaign”, *European Journal of Clinical Nutrition*, Vol. 54 No. 3, p. 253.
- Borzekowski, D.L.G. and Robinson, T.N. (2001), “The 30-second effect: an experiment revealing the impact of television commercials on food preferences of preschoolers”, *Journal of the American Dietetic Association*, Vol. 101 No. 1, pp. 42–46.
- British Nutrition Foundation. (2015), “National Pupil and Teacher Survey 2015: UK Survey Results”, available at: <https://www.nutrition.org.uk/attachments/article/846/UK%20Pupil%20and%20Teacher%20Survey%20Results%202015.pdf> (accessed 20 February 2019)
- Calvert, S., Dempsey, R.C. and Povey, R. (2019), “Delivering in-school interventions to improve dietary behaviours amongst 11- to 16-year-olds: A systematic review.”, *Obesity Reviews*, Vol. 20 No. 4, pp. 543–553.
- Coleman, J. (2011), *The Nature of Adolescence*, Taylor & Francis, New York, NY.
- Conolly, A. and Davies, B. (2018), “Health Survey for England 2017—Adult and Child Overweight and Obesity, available at:

<http://healthsurvey.hscic.gov.uk/media/78619/HSE17-Adult-Child-BMI-rep.pdf> (accessed 4th January 2020).

- Contento, I.R. (2010), *Nutrition Education: Linking Research, Theory, and Practice*, Jones & Bartlett, Canada.
- Craigie, A.M., Lake, A.A., Kelly, S.A., Adamson, A.J. and Mathers, J.C. (2011), “Tracking of obesity-related behaviours from childhood to adulthood: a systematic review”, *Maturitas*, Vol. 70 No. 3, pp. 266–284.
- El-Sayed, A.M., Scarborough, P. and Galea, S. (2012), “Socioeconomic Inequalities in Childhood Obesity in the United Kingdom: A Systematic Review of the Literature”, *Obesity Facts*, Vol. 5 No. 5, pp. 671–692.
- Feeney, E.L., O’Brien, S.A., Scannell, A.G.M., Markey, A. and Gibney, E.R. (2014), “Genetic and environmental influences on liking and reported intakes of vegetables in Irish children”, *Food Quality and Preference*, Vol. 32, pp. 253–263.
- Gupta, S., Kalra, S., Kaushik, J.S. and Gupta, P. (2017), “Content of food advertising for young adolescents on television”, *Indian Journal of Community Medicine*, Vol. 42 No. 1, p. 43.
- Hagell, A., Coleman, J. and Brooks, F. (2013), “Key data on adolescence 2013”, available at: [http://www.ayph.org.uk/publications/457\\_AYPH\\_KeyData2013\\_WebVersion.pdf](http://www.ayph.org.uk/publications/457_AYPH_KeyData2013_WebVersion.pdf) (accessed 20th July 2019).
- Hummer, J.F., LaBrie, J.W., Lac, A., Sessoms, A. and Cail, J. (2012), “Estimates and influences of reflective opposite-sex norms on alcohol use among a high-risk sample of college students: Exploring Greek-affiliation and gender effects”, *Addictive Behaviors*, Vol. 37 No. 5, pp. 596–604.
- Ipsos, M. (2014), “Health and Wellbeing of 15 year olds in England: Smoking prevalence—findings from the What About YOUth”, Survey. available at: <https://digital.nhs.uk/data-and-information/publications/statistical/health-and-wellbeing-of-15-year-olds-in-england/smoking-prevalence---2014> (accessed 4th October 2019)
- Johnson, W., Li, L., Kuh, D. and Hardy, R. (2015), “How has the age-related process of overweight or obesity development changed over time? Co-ordinated analyses of individual participant data from five United Kingdom birth cohorts”, *PLoS Medicine*, Vol. 12 No. 5, p. e1001828.
- Kelishadi, R., Mozafarian, N., Qorbani, M., Motlagh, M.E., Safiri, S., Ardalan, G., Keikha, M., et al. (2017), “Is snack consumption associated with meal skipping in children and adolescents? The CASPIAN-IV study”, *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*, Vol. 22 No. 2, pp. 321–328.
- Krueger, R.A., (2002). *Designing and conducting focus group interviews*. Available at: <https://www.eiu.edu/ihec/Krueger-FocusGroupInterviews.pdf> (accessed 20<sup>th</sup> December 2019).
- Kumar, J., Adhikari, K., Li, Y., Lindshield, E., Muturi, N. and Kidd, T. (2016), “Identifying barriers, perceptions and motivations related to healthy eating and physical activity among 6th to 8th grade, rural, limited-resource adolescents”, *Health Education*, Vol. 116



No. 2, pp. 123–137.

- LaBrie, J.W., Cail, J., Hummer, J.F., Lac, A. and Neighbors, C. (2009), “What Men Want: The Role of Reflective Opposite-Sex Normative Preferences in Alcohol Use Among College Women”, *Psychology of Addictive Behaviors : Journal of the Society of Psychologists in Addictive Behaviors*, Vol. 23 No. 1, pp. 157–162.
- Larson, N.I., Neumark-Sztainer, D., Hannan, P.J. and Story, M. (2007), “Family meals during adolescence are associated with higher diet quality and healthful meal patterns during young adulthood”, *Journal of the American Dietetic Association*, Vol. 107 No. 9, pp. 1502–1510.
- Lytle, L.A., Seifert, S., Greenstein, J. and McGovern, P. (2000), “How do children’s eating patterns and food choices change over time? Results from a cohort study”, *American Journal of Health Promotion*, Vol. 14 No. 4, pp. 222–228.
- McLennan, D., Barnes, H., Noble, M., Davies, J., Garratt, E. and Dibben, C. (2011), “The English indices of deprivation 2010”, available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/6320/1870718.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/6320/1870718.pdf) (accessed 14 October 2018)
- Neumark-Sztainer, D., Croll, J., Story, M., Hannan, P.J., French, S.A. and Perry, C. (2002), “Ethnic/racial differences in weight-related concerns and behaviors among adolescent girls and boys: findings from Project EAT”, *Journal of Psychosomatic Research*, Vol. 53 No. 5, pp. 963–974.
- Neumark-Sztainer, D., Story, M., Resnick, M. and Blum, R.W. (1998), “Lessons learned about adolescent nutrition from the Minnesota Adolescent Health Survey”, *Journal of the American Dietetic Association*, Vol. 98 No. 12, pp. 1449–1456.
- Neumark-Sztainer, D., Story, M., Perry, C. and Casey, M.A. (1999), “Factors influencing food choices of adolescents: findings from focus-group discussions with adolescents”, *Journal of the American Dietetic Association*, Vol. 99 No. 8, pp. 929–937.
- NHS. (2018), “Statistics on obesity , physical activity and diet”, <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/statistics-on-obesity-physical-activity-and-diet-england-2018> (accessed 20th November 2019).
- NHS. (2019), “Statistics on Obesity, Physical Activity and Diet, England, 2019”, available at: <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/statistics-on-obesity-physical-activity-and-diet-england-2019> (accessed 2nd January 2020).
- Noonan, R. (2018), “Poverty, Weight Status, and Dietary Intake among UK Adolescents”, *International Journal of Environmental Research and Public Health*, Vol. 15 No. 6, p. 1224.
- Ogden, C.L., Carroll, M.D., Kit, B.K., Flegal, K.M. (2012), “Prevalence of obesity and trends in body mass index among us children and adolescents, 1999-2010”, *JAMA*, Vol. 307 No. 5, pp. 483–490.
- Public Health England. (2016), “Child obesity”, available at:

<https://www.gov.uk/government/publications/childhood-obesity-a-plan-for-action/childhood-obesity-a-plan-for-action> (accessed 14 September 2019).

QSR International Pty Ltd. (2016), "QSR International Pty Ltd".

Ritchie, J and Spencer, L (1994), "Qualitative data analysis for applied policy research" in Bryman, A and Burgess, R. G. [eds.] *Analysing qualitative data*, Routledge, London, pp. 173–194.

Savidge, G., MacFarlane, A., Ball, K., Worsley, A. and Crawford, D. (2007), "Snacking behaviours of adolescents and their association with skipping meals", *The International Journal of Behavioral Nutrition and Physical Activity*, Vol. 4, p. 36.

Siega-Riz, A.M., Carson, T. and Popkin, B. (1998), "Three squares or mostly snacks—What do teens really eat?: A sociodemographic study of meal patterns", *Journal of Adolescent Health*, Vol. 22 No. 1, pp. 29–36.

Smith, T., Noble, M., Noble, S., Wright, G., McLennan, D. and Plunkett, E. (2015), "The English indices of deprivation 2015", *London: Department for Communities and Local Government*.

Stevenson, C., Doherty, G., Barnett, J., Muldoon, O.T. and Trew, K. (2007), "Adolescents' views of food and eating: Identifying barriers to healthy eating", *Journal of Adolescence*, Vol. 30 No. 3, pp. 417–434.

Tyrrell, R.L., Townshend, T.G., Adamson, A.J. and Lake, A.A. (2015), "'I'm not trusted in the kitchen': food environments and food behaviours of young people attending school and college", *Journal of Public Health*, Vol. 38 No. 2, pp. 289–299.

Wind, M., Bjelland, M., Perez-Rodrigo, C., Te Velde, S.J., Hildonen, C., Bere, E., Klepp, K.-I., et al. (2007), "Appreciation and implementation of a school-based intervention are associated with changes in fruit and vegetable intake in 10-to 13-year old schoolchildren—the Pro Children study", *Health Education Research*, Vol. 23 No. 6, pp. 997–1007.

Winpenney, E.M., Penney, T.L., Corder, K., White, M. and van Sluijs, E.M.F. (2017), "Change in diet in the period from adolescence to early adulthood: a systematic scoping review of longitudinal studies", *The International Journal of Behavioral Nutrition and Physical Activity*, Vol. 14, p. 60.

Wisniewski, A.B. and Chernausk, S.D. (2009), "Gender in childhood obesity: family environment, hormones, and genes", *Gender Medicine*, Vol. 6, pp. 76–85.

Zahra, J., Ford, T. and Jodrell, D. (2014), "Cross-sectional survey of daily junk food consumption, irregular eating, mental and physical health and parenting style of British secondary school children.", *Child Care, Health & Development*, Vol. 40 No. 4, pp. 481–491.