Influences on diet and physical activity choices of 11-13 year olds in a school setting

Camilla McHugh, Lindsey Anderson, Jenny Lloyd, Stuart Logan and Katrina Wyatt

Department of Child Health, Exeter University Medical School, Exeter, UK

Abstract

Objective: This paper uses a qualitative approach to explore the factors that influence diet and physical activity choices of 11-13 year olds with a particular focus on the impact of the school environment.
Design: Qualitative focus groups
Setting: Three purposively sampled secondary schools in Devon, UK
Method: A total of 53 students, aged 11-13, took part in six focus groups. Thematic, framework analysis was used to analyse the data.
Result: Four overarching themes emerged: 1) health now and in the future; 2) the role of others; 3) provision, temptation and addiction; and 4) boundaries, strategies and support. Participants demonstrated a good knowledge of what constitutes a healthy lifestyle and its importance for future health, although it was not necessarily seen as a priority at this stage of life. Key influences on their choices which were their peers and family although participants also identified that the school environment influences the foods choices they make while there.
Conclusion: 11-13-year-olds identified that schools could do more to support them to make healthier food choices. However, future research needs to understand the constraints schools face in terms of food provision in order to highlight possible opportunities for intervention.

Corresponding author:
Camilla A McHugh, Department of Child Health, University of Exeter Medical School, St Luke's Campus South Cloisters room 201 Exeter EX2 4SG, UK
Email: c.a.mchugh@exeter.ac.uk

Introduction

Early adolescence marks a major developmental change in young peoples' lives, not just physiologically but also with increased autonomy, less parental influence and increased influence of peers (Roeser et al., 2000). This new independence can affect food choices, attraction to screen based activities, and motivation to be physically active (PA) (Zimmer-Gembeck et al., 2011). According to the World Health Organisation (WHO) the four main modifiable behavioural risk factors for developing non-communicable diseases (NCDs) such as heart disease, stroke, cancer, and diabetes, are physical inactivity, unhealthy diet, tobacco use and harmful use of alcohol. NCDs result in 70% of deaths globally and it is important to create cultures and environments which support healthy choices throughout the life course. In the UK, 35% of adolescents are considered overweight or obese with many not meeting the government guidelines for diet and PA (HSCIC, 2015). In addition, it has been shown that poor diet, reduced PA and sedentary behaviours co-exist leading to some adolescents developing multiple risk factors for NCDs (Leech et al., 2014).

There are many potential spheres of influence on adolescent health choices: families, peers, the school and the wider environment (Viner et al., 2012) and transition points such as the move from the primary to the secondary school system can make it harder for young people to make healthy diet and physical activity choices (Marks et al., 2015). Understanding the determinants of behaviours helps researchers design more effective interventions; however, the determinants of diet and physical activity behaviours have tended to be explored in isolation (Biddle et al., 2011; Stierlin et al., 2015; Sleddens et al., 2015; Morton et al., 2016; Minges et al., 2015; Shepherd et al., 2006; Sterdt et al., 2014; Swaminathan et al., 2009) and an ever changing UK education system, in terms of school structures, funding and policy (Department of Education, 2013) means that we still do not know how much influence the school holds in shaping the health behaviours of children and adolescents.

This paper uses a qualitative approach to explore what influences diet and PA choices of 11-13-year-olds, with a particular focus on the impact of the school environment.

Methods

Recruitment of schools and children

Three socio-economically diverse state secondary schools were purposively recruited in Devon, an area in South West England, to provide a sample of pupils from a range of different backgrounds. Two schools were classed as rural and one as urban. All the schools had an above national average percentage of students' eligible for free school meals, and below national average percentage for special education needs and ethnic diversity, indicative of this area of the UK. Participants were recruited from both Year 7 (age 11-12) and Year 8 (age 12-13), in order to understand perceptions and attitudes at the transition stage to secondary school. All students in Years 7 and 8 were eligible to take part in a focus group. Due to the limited time allocated by schools to conduct the focus groups a recruitment form (Block et al., 2013) was developed to: (1) act as recruitment tool; (2) introduce the topic of the research and the researchers; (3) act as a prompt during the focus groups and; (4) ascertain whether the students who took part were broadly representative of the whole year group in relation to the consumption of snacks and drinks, hours spent on

screen-time and PA, and motivation to make healthy choices. Written informed consent was obtained from all participants and their parents/carers to ensure parents were aware of the project and happy for their child to participate. Ethics approval was granted from the University of Exeter Medical School ethics committee.

Table 1. Questions and prompts for the workshops

Overarching questions and methods	Prompts
Method: use recruitment form responses to reflect. What does a healthy lifestyle mean to you?	Explore how they decide
How important is it to you to lead a healthy lifestyle; and why?	What influences them? Do unhealthy choices effect their health? In what ways and is that important? Where would they go to get information?
Method: use recruitment form to choose behaviour you might like to change. What or who do you think would help you change that behaviour?	People? Environment? Etc.
Method: use post-it notes On a scale of 1 to 10 how important is it or would it be for you change behaviours?	Explore why they choose that number.
What would encourage you to make changes to your lifestyle choices?	People, environment etc.? Examples?
What would make it more difficult for you to make lifestyle changes?	People, environment etc.? Examples?
What sort of support do you think might help make it easier for you to make changes?	People; social media; monitoring; information etc.?
Have you noticed any changes to your lifestyle choices since you started secondary school?	Diet choices? PA levels? Examples?
What do you think would help encourage young people to make changes in their lifestyle choices?	People, environment, clubs, social media etc.?

Stakeholder involvement

Prior to applying for ethical approval, we consulted the advice of a group of secondary school students from the University of Exeter Medical School's Young Persons' Advisory Group (YPAG). They advised us on the wording and layout of the 'recruitment form' and the 'young person's information leaflet', how best to recruit Year 7 and Year 8 pupils, and the most appropriate incentive for participation in the focus group. Key changes as a result of this consultation were the replacement of the term 'focus group' with 'workshop' (as it was considered to be a more familiar term) the timing of the focus groups (lunch time to increase participation) and the offer of a thank you voucher worth £5 for participation in the groups.

Research focus groups

Each school allowed one hour for the focus groups which were conducted during school-time in an available, quiet room. The individual, completed recruitment form was handed out to each participant at the start of each group to remind them of their responses and to act as a stimulus during the discussion. The semi-structured focus groups (Table 1) were facilitated by C.Mc., with the assistance of L.A. Both researchers possessed a 'Disclosure and

Barring Service' certificate[1], and had experience of working with schools and conducting focus groups. All focus groups were recorded and transcribed verbatim.

Analysis

Inductive thematic analysis was used to explore emerging themes and NVivo 11 was used to manage the data. Familiarisation with the data involved reflection on the research diary, transcribing the recordings, reading the transcripts and reviewing field notes. An initial coding framework was created and tested using the direct responses of participants and the topic guide, this was then applied independently by both C.Mc. and K.W. Any discrepancies were discussed and resolved. The data was further summarised using a Framework approach to look for relationships and develop themes (Ritchie, 2014). The themes were reviewed, defined and named using mind-maps at each stage. The coded data extracts and all transcripts were reread to ensure that the final overarching themes and sub-themes ran across all the data set and were checked for any missed data; these were discussed and agreed with K.W.

Findings

In all 979 students were eligible and 726 (74%) completed the recruitment form. Of these, 38.8 % (282/726) expressed an interest in attending a workshop and received an information pack. A total of 53 (37 girls and 16 boys, 27 Yr7 and 26 Yr8) students returned both consent forms and subsequently took part in one of six focus groups, across the three schools. The participants were not purposely selected and a larger proportion of girls attended, however there were no noted differences in responses to the questions for gender or year group. The students were broadly representative of their year group in their responses on the recruitment form, although students in the focus groups were slightly more inclined towards healthier behaviours. The focus groups were conducted in the autumn term 2016 and one was held for each year group in each school. Member checking (respondent validation) was conducted by producing a plain English summary report; this was circulated to the participants via the schools for review and provided an opportunity to feedback, although no feedback was received.

Themes

Four higher order themes emerged consistently across all groups, relating to what adolescents perceive as influencing their healthy lifestyle choices and attitude to changes in behaviour: (1) health now and in the future; (2) role of others; (3) provision, temptation and addiction and (4) boundaries, strategies and support.

These themes are described in detail below with supporting verbatim quotes from original transcripts, labelled by year. Quotes were chosen to help describe a theme, place it in context or to demonstrate differing opinions within the workshops.

Health now and in the future

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[1] The Disclosure and Barring Service is a UK government checking procedure for organisations to see if people are suitable to work with children or adults in certain circumstances.

In the discussions relating to where young people got their information from, all the groups came up with a wide range of different resources. People identified as sources of information included parents, doctors, dieticians, PE teachers and sports coaches. Participants also mentioned resources provided in primary school which mainly included the EatWell guide and the Change4Life resources. All groups cited information gained through different phone apps, websites and YouTube videos as good resources of information. For example, one participant mentioned: '…like YouTube or something because there's always like loads of videos on like healthy food or something.' (Yr8). However, across the groups there was no discussion to demonstrate any awareness or discernment regarding the quality or accuracy of the information provided.

All the groups demonstrated a good knowledge and understanding of what is needed to lead a healthy lifestyle, with many describing the need for a balance in diet and PA. One participant described it as:

> *I think it's about being balanced and like having lots of your daily fruit and veg and smoothies, going out for walks and like doing lots of sport, and like being active and not on the screens all the time.* (Yr7)

The participants showed an awareness of the negative and positive consequences of living or not living a healthy lifestyle, both to their mental and physical health. The negative physical consequences were clearly articulated, with participants able to identify several conditions that could result in ill health later in life such as obesity, diabetes, heart problems, as well as some possible additional consequences on careers and mental health. Study participants also discussed the negative effects on appearance, skin, teeth and energy levels, with one suggesting that you may not be 'normal size' (Yr7) as well as losing your fitness which will affect you as you get older:

> *Actually, it's like you're older if you don't do exercise when you're younger then your body's not going to stay as fit so when you're older you won't be able to do as much…* (Yr7)

One participant also believed that leading an unhealthy lifestyle could negatively affect your career in the future.

> *…because if you are an employer then you would look at like their past, like if you had medical issues because you say um eat too much fat or something then you would look at that because you want to have the like um I don't know it would just help you to be healthy.* (Yr8)

Study participants were also able to identify the negative effect an unhealthy lifestyle can have on mental health leading to unhappiness and depression in the future. One participant described it as:

> *When you get older if you don't exercise you won't be happy with your body and start to feel a bit depressed maybe.* (Yr7)

During the focus groups, young people also discussed the positive physical and mental health consequences from leading a healthy lifestyle. Good fitness, endorphins and better sleep were all discussed. For example, one participant said:

So, and if you just do lots of exercise then you are tireder at night and get lots of sleep and you will be just like a happier person in general I think. (Yr7)

Another mentioned improvement at school: 'I think that also when you kind of do exercise it makes you do better at school sometimes.' (Yr7). Reference was also made to living a longer life:

I think it's very important because it makes you have a happier life and then also it will make you live longer.' (Yr8). Another identified that: '…because by being healthy you can be like mentally happy and being happy is just quite a nice feeling. (Yr7)

To help understand adolescents' attitudes to making changes the groups were asked to choose, from their responses on the recruitment form, a behaviour they might want to change and to rate how important they felt it was it was to make that change. To facilitate the discussion the participants were asked to write down a number on a scale of 1-10, with one being less important and ten being very important. In all, 75% of the responses were in the mid-range (5-8) of the scale, demonstrating that most of the participants felt that it is important to make changes but not that important. One participant described it as:

Yeah I want to be more healthy but I'm not going to like try and do it straight away I'm going to get grouchy… (Yr8)

Participants felt they were mostly healthy with some possible changes to make but not now:

I chose 5 because I think at the moment I'm having quite a healthy lifestyle but there are some things that I want to change…so it's quite important, but not very important at the same time. (Yr7)

However, one student said that although it was very important, it was also hard to achieve:

10/10…I always say, like I'm going to commit to doing more sport and I'm not going to eat cake and stuff like that, and then it doesn't turn out. (Yr7)

The role of others

When the groups were asked who influenced them on their health choices, parents were identified as having a significant influence:

…like your parents, they try and give you their like healthiest options or they try and get you to do as many or as much sports as you can or try and get you to eat quite healthy. (Yr8)

Another student spoke about how parents encourage making a healthier choice by facilitating exercise together:

Um if I'm watching something or if I'm on my phone and my mum says 'I'm going for a run do you want to come' I'm quite happy to turn off the TV and do that, I don't have a problem of stopping watching the TV or playing on my phone but it's just when I have the option to carry on doing it I kinda of just end up doing it… (Yr7)

However, some reported that family can also act as a barrier to leading a healthy lifestyle or changing behaviour:

Also like if you've grown up in a family which eats like really unhealthy foods you just like get used to like eating like unhealthy foods…and if you do that it seems harder to get back into a healthy lifestyle…cause you have to change all your family or like eat separate foods and that could be tricky yeah (Yr8)

Students also discussed how since starting secondary school their friendship circles had increased. Some mentioned that friends were a positive influence, particularly in relation to joining sport clubs at school:

I basically joined all the sports clubs here that were on offer, because like my friends, they have...and then they/we go off to our clubs and then like we meet other people and we like still socialise, so... (Yr7)

Conversely another participant mentioned that peers could also have a reverse influence: '…yeah and also like if their friends, if your friends are not really into like sport or stuff like then it sort of like pulls you away sort of...' (Yr8). All groups also discussed how friends can negatively influence adolescent food choices.

Pressure…friends so if your friends are buying junk food you sort of want it yourself. (Yr8)

Pressure to spend more time on your phone to keep up with a wider circle of friends was also discussed:

You meet more friends, and they all have phones and you get their number and you constantly text each other, which means you're like always on your phone. (Yr7)

Likewise, students described the pressure to watch more television and YouTube programmes:

…also like everyone at school, like your friends are like talking about TV shows and you want to like catch up with them so like you end up binge watching stuff, you don't really need to watch but you don't want to like miss out. (Yr8)

Role models were identified as people to look up to and who have influence in a positive way to make changes or healthy choices. People identified as role models included celebrities:

Like almost famous people that you look up to, that are a bit healthier than you... (Yr8)

Also, mentioned in one group were older peers at school, 'Yeah, because they're like quite skinny and they look healthy and it like gives you a mental push to start like becoming healthier' (Yr7). Sports coaches and teachers were also identified as being positively encouraging. However, some teachers were also mentioned as having a negative influence:

Yeah like teachers give you sweets and like they bribe you with like taking the bins out and then they give you sweets! (Yr8)

Provision, temptation and addiction

Participants talked about how the provision within certain settings created temptation to make less healthy choices, as well as the addictive nature of certain foods and screen devices. The provision of food at school was discussed across all the groups possibly because the groups met in this school setting. Students reported that there were not enough healthy options being offered and that there was too much choice of unhealthy foods in comparison with primary schools. Healthy options were described as being harder to access, expensive and often unappealing. There was extensive discussion about how unhealthy choices were much cheaper and therefore more tempting.

...um sometimes the um the food doesn't look too nice like the healthy foods like they don't look too nice in our school so you just go for the easy option which is the pizza which is right next to it. (Yr8)

...carrying on with the school thing like the fizzy drinks are reasonably quite cheap and are quite easy to access so it's cheaper than getting a bottle of water and so I think you are more likely to go for a fizzy drink than a bottle of water because it's cheaper. (Yr8)

However, students did say that since coming to secondary school there were many more options in terms of PA provision, with increased access to clubs and the gym:

At school, I think it's almost every lunchtime, there's always like a club, sport, activity sort of thing... (Yr7)

Students also discussed shops, supermarkets and corner shops, and the promotion of cheap, unhealthy foods in these settings. Some mentioned that in small corner shops healthy options are often not available and if available are not very appealing.

...like in most like corner shops they don't sell fruit or if they do it's like hidden away because they don't like expect like people to buy it. (Yr7)

Linked to the availability and provision of healthy foods was the advertising and marketing of unhealthy foods, games and digital gadgets that companies, shops and fast food restaurants display. The adolescents felt these tempted and influenced their choices.

I think that like, adverts like for on TV for new games and like new gadgets and devices like they have, and you like go, oh my gosh, that looks amazing I really, really want that and you get it you get so addicted to it and you don't want to put it down. (Yr7)

However, participants also said that certain supermarkets encouraged healthy eating. Positive steps included the promotion of healthy recipe advertisements on television, giving out free fruit to children shopping with their parents and having healthy foods at the checkout:

What I like in supermarkets is like um well we sometimes go to Aldi um like where you can where you put your stuff on the conveyer belt they've got like dried fruit and nuts and that along like where the conveyer belt is which is quite nice because it helps you like want to try stuff like that. (Yr7)

The 'addictive' nature of certain foods was also discussed:

…kinda just want to eat sugar and fats and sugars and stuff like that, all the time……they can be really easy to get addicted to, like to have them a lot and then you want it and then you really need it. (Yr8)

The addictive nature of screen devices and social media was also mentioned across all the groups. Reasons for using these devices included homework, the need to stay connected and know what is going on with a larger peer group. Computer games were also discussed as being designed to keep people playing for far longer than planned:

Computer games, some games just get you so addicted to it. It's really hard to actually stop playing. Like I sometimes find I want to play it for one hour and then like spend three hours on it and can't get off. (Yr7)

The groups also mentioned that television programmes watched on catch-up resulted in 'binge' watching more than expected:

…like what xxx said about YouTube if your like watching like a season of your favourite thing you want to watch one but then it ends up you watching basically half of them than you expected to watch… (Yr7)

Another common topic was the increased amount of homework necessitating more time spent on screens, sometimes tempting students to do other things online and having less time to be active.

…and um I think it's increasing the amount of time that you actually spend on like a computer cause you have about four pieces of homework a day sometimes and they're all to do on the laptop. (Yr8)

Boundaries, strategies and support

During the discussions, participants described strategies used by themselves and boundaries established by parents and schools to help support making healthy choices and avoid less healthy options. Throughout the discussions, adolescents referred to the use or potential of various strategies to monitor their own behaviours. Some of these strategies were practical, such as writing notes and timetables, setting reminders or using mobile phone health apps, keeping food diaries, and removing devices from bedrooms: 'I don't charge my phone in my bedroom either, I charge it on the landing or downstairs so that I don't have this urge to play on it.' (Yr7). Students also mentioned more personal mental strategies such as: 'Willpower.' (Yr8). One participant suggested being in tune with your body was a way to self-monitor:

> *But you can kind of tell when you've been doing something for such a long time, so say you've been sat in front of the TV for ages, your body kind of starts, you kind of start wriggling around a bit as if your body wants to go out and do something and it's kind of noticing when that happens…* (Yr7)

Throughout all the groups, participants suggested that asking parents for help was a useful way to monitor their behaviours. Several suggested that as parents did the weekly shop making suggestions on what to buy or not buy regarding certain foods was helpful:

> *You could say to your parents, because I imagine they do the weekly shopping, you could say, can you just start buying more of this or less of that. Then you don't actually have it there to eat so…' (Yr7). In addition, asking parents to help monitor screen activity was suggested: 'I might get my dad to like block it, or put a password on it so I don't know it.* (Yr7)

Participants reported parents help monitoring behaviours by establishing rules and regulations to support children and young people to make healthier choices. For instance:

> *…like my mum cut out all of my fizzy drinks and chocolate bars and we aren't allowed anything like treats, unless we'd drunk all of that (water)and eaten an orange and stuff like that.* (Yr7)

During the discussions, the groups talked about how primary schools had monitored student's food intake and levels of activity, whereas at secondary school there was more freedom of choice and much less monitoring. Participants felt that there were too many unhealthy choices in the food being offered at secondary school, and sometimes canteen staff encouraged these less healthy choices:

> *Yeah and you can have, really whatever you want for lunch. And like at my old school you had one option of what you wanted and then you could have like peas or carrots.*

You had to have one, and if you didn't eat it all of it, then you had to sit in and had to finish it all. (Yr7)

Discussion

This paper used a qualitative approach to explore what influences diet and PA choices of 11-13-year-olds with a particular focus on the impact of the school environment. In order to explore these influences focus groups were held with students of this age. The questions posed during the groups were broad in their nature, however as the groups occurred in school time much of the discussions tended to focus on this environment.

The strength of this study is the robust methodology used, including purposive sampling of urban and rural schools of different sizes and with mixed socio-economic pupil intake. The recruitment form worked well to recruit students, as well as acting as a prompt during the groups. In addition, several steps were taken to enhance the trustworthiness of the findings; (1) two authors cross checked codes and themes; (2) two researchers conducted the focus groups and wrote field notes; and (3) a summary report was circulated to all participants to feedback on.

The themes that emerged were broadly universal to the main behaviours discussed. In the theme 'Health now and in the future' adolescents demonstrated a good knowledge of what constitutes a healthy lifestyle as well as the consequences of unhealthy choices on their physical and mental health (Shepherd et al., 2006; Sylvetsky et al., 2013). However, they did not appear to relate this to their own long-term health outcomes. Similarly, whilst students showed a positive attitude regarding the possibility of making lifestyle changes, doing so was not seen as a priority that warranted immediate action. This echoes the attitude of living in the moment and risk taking behaviour often associated with this stage of development (Roeser et al., 2000). Also, students were able to identify a wide range of resources where they could gain information on health, although there was no evidence that they appraised the quality of the information they received.

Unsurprisingly students, in the theme 'Role of others' identified their peers as having a bigger role of influence, and the importance of understanding the social norms of this new circle of peers and how to fit into this. It was also clear that role models, such as older students, celebrities, parents and staff were seen to influence choices.

In the theme 'Provision, temptation and addiction' participants showed a comprehensive understanding of what tempts them to make unhealthy choices particularly in relation to food and screen activity and the addictive nature of these choices. They discussed in detail their frustration with the provision of food in schools as well as its cost and how this impacted on the choices they make. Students also highlighted the tension with schools setting homework which is predominately screen-based which they blamed for tempting them to spend more time on electronic devices. The provision of expensive, unappealing healthy food and more easily accessible unhealthy food in the school setting is a recurrent theme in other studies looking at diet-related determinants (Wills et al., 2016; Shepherd et al., 2006; Kumar et al., 2016). Unlike other qualitative studies exploring determinants to PA participation which found school provision was a barrier (Martins et al., 2015), the current study reported they had increased opportunities for PA compared with primary school. However, during the focus groups it was not possible to ascertain whether students actually attended additional PA activities or whether they were more active as a result.

Participants in this study showed awareness of the ways they are supported to make healthier choices both at home and within the school setting. Parents were identified as providing boundaries and support for screen-time, diet and PA choices; however it was noted that secondary schools played a lesser role in monitoring their behaviours than primary schools and students noted the lack of availability of healthy food choices which was felt to be unsupportive. This group of young people described mechanisms they could use to monitor their own behaviour and ways schools could support them by providing less temptation and healthier choices.

Conclusion

This study highlights some of the structural and behavioural determinants 11-13-year-olds face when making healthy choices, at school, at home and in the wider environment as well as their attitudes to changing behaviour at this developmental stage. Influencing the home and wider environment so as to address lifestyle behaviours and promote health is a challenge. Schools are attractive locations for programmes to promote healthy choices and the finding from this study suggest there are some things young people think schools could consider to make the school environment more healthy. Understandably previous research has focused on the school environment, much of which has been conducted in primary schools(Langford et al., 2015).   The students in this study showed a good knowledge that could be built upon as well as an awareness of what they can do to monitor their own behaviours. However, at this age when peers greatly influence behaviour and healthy choices are not seen as a priority, making small changes to the school environment to support healthy choices may have a greater impact on choices than individual level strategies such as self-monitoring.

Further research could explore if is it feasible for secondary schools to provide more attractive, heathy, affordable food and PA choices and to help monitor and support pupils' food and drink choices. The use of tools, such as the WHO Health Promoting Schools framework, which takes a whole school approach and encourages working in partnership with families and the community, has shown some promise in effecting PA and diet behaviours, and could be explored further for use in the secondary school environment (Langford et al., 2015). However, secondary schools in England are currently under considerable pressure, both educationally and financially. To deliver an enhanced health education, environment and ethos which addresses diet and PA choices will take time and resources which are currently under considerable strain (Griffin et al., 2015). One possible way forward might be for schools, pupils and families to work together to identify how they can be as health promoting as possible and co-create a supportive school environment.

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