

Addressing childhood obesity at school entry: qualitative experiences of school health professionals

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Abstract

School entry provides an opportune moment for health professionals to intervene with children who are overweight, yet identification and management of childhood obesity presents challenges in practice. This mixed-method qualitative study explored the experiences of 26 school health professionals of addressing childhood obesity at school entry. Methods included semi-structured interviews with service managers (n=3); focus groups with school nurses (n=12) and child health practitioners (n=6); and open-ended questionnaires with school nurses (n=4) and child health practitioners (n=1) who were unable to attend the focus groups. A thematic analysis revealed agreement between service managers, school nurses and child health practitioners. Whilst it was felt school health professionals have an important role to play in managing childhood obesity, efforts to address child weight were limited by a lack of capacity, lack of clear protocols, challenges of engaging parents and insufficient training in childhood obesity and related lifestyle issues. School health policy-makers need to recognize childhood obesity as a serious public health issue, allocate appropriate resources to nurse training and development, and ensure clear pathways are established to ensure consistency of care.

Introduction

Children who are obese suffer physically and psychologically (Pulgaron, 2013) and are more likely to become obese adults (Singh et al., 2008), thus increasing their risk of lifestyle-related morbidity and mortality (Park et al., 2012). Currently over 1 in 5 children living in developed countries are overweight or obese (Ng et al., 2014). As childhood obesity prevalence increases with age, early intervention is vital.

The National Child Measurement Programme (NCMP) monitors the Body Mass Index (BMI) of children in England aged 4-5 years (reception) and 10-11 years (year 6). Results are communicated to parents via letter explaining the child's BMI and related health risks. Despite early concerns about measuring children's BMI in school (Ikeda et al., 2006), BMI screening is now commonplace internationally and a recent NCMP evaluation showed little evidence of psychosocial harm for children (Falconer et al., 2014).

Whilst written feedback can increase parental knowledge and understanding of childhood obesity, more intensive approaches may be required to instigate behaviour change (Falconer et al., 2014). One opportunity for early weight-related intervention is the school entry assessment (SEA), which is a health and development review for 4-5 year old children in the UK, covering height and weight, hearing and vision, motor skills and personal/social skills. However, school health staff face time pressures and competing responsibilities (Steele et al., 2011) and are rarely trained in obesity management (Keyworth et al., 2013), therefore discussing weight with families can be a challenging process. In a focus group study conducted in the US, Steele et al. (2011) found school nurses lacked knowledge about childhood obesity and feared how parents might react to information about their child's weight. Parental reactions might be influenced by health professional skills, parental

education and weight status, and ability to recognise their child's weight as an issue (Mikhailovich and Morrison, 2007).

The National Institute for Health and Care Excellence (NICE, 2013) recommended a role for school health teams in identifying obesity, making appropriate referrals and providing ongoing support for children who are overweight or obese. The SEA presents a timely opportunity for such intervention, however referral rates from a local child weight management intervention (Watson et al., 2015) suggested SEAs result in a disproportionately low incidence of referrals (given the number of children identified as obese by the NCMP). Therefore the aim of this study was to explore the practice of school health professionals in addressing childhood obesity at school entry, with a view to explaining potential reasons for low referral rates and understanding how the role of school health professionals can be optimised to address childhood obesity at an early age. The following research questions were addressed:

1. How do school health professionals perceive their role in addressing childhood obesity?
2. What is current practice for identifying and managing childhood obesity at school entry?
3. How confident are school health professionals in addressing child weight and related lifestyle issues with families?
4. What are the training needs of school health professionals for addressing childhood obesity?

Methods

Participants

The study was conducted in a large city in the North-West of England with high levels of socio-economic deprivation. Prevalence of childhood obesity was higher than the national average, with 28.6% of children overweight or obese at reception age (compared with 22.2% nationally, Health and Social Care Information Centre, 2013). The school health service was grouped into three geographical areas, each with a service manager (M) plus smaller teams made up of school nurses (SN, registered nurses with caseload responsibilities) and child health practitioners (CHP, registered nurses who supported school nurses in the delivery of care, but did not hold caseload responsibilities).

All Ms, SNs and CHPs employed in the study location between October 2012 and July 2013 were eligible to take part. Invites were e-mailed directly to Ms and to team leaders (SNs) who distributed invites amongst SNs/CHPs (estimated to be 45-55 staff). The inclusion of staff in different roles was deemed important as stakeholders differ with regards to perceptions of childhood obesity (Staniford et al., 2011). Twenty-six staff (25 females, 1 male) consented to participate, including three Ms (one from each geographical area), 16 SNs and 7 CHPs. Number of years in current roles ranged from one month to 13 years.

Obesity screening processes in the study location

Support staff measured the height and weight of children in reception year (for the dual-purpose of school health records and the NCMP). Parents of all children were then invited to attend a 20-minute SEA with their child (conducted by a SN/CHP). During the SEA practitioners plotted the child's height and weight on a growth chart (based on the UK 1990 growth reference curves, Cole et al., 1995) and discussed any concerns with parents. If children were identified as overweight (defined as weight at least two centiles above height)

practitioners had the option of referring either to a paediatrician, dietitian or the local child weight management service.

Whilst SEAs were taking place, NCMP letters were sent out by analysts from the local community health trust. Letters were sent *only* to parents of children with an unhealthy BMI and included information about the child's BMI category ("underweight", "overweight", or "very overweight" (obese), defined by the 2nd, 91st and 98th centiles of the UK 1990 growth reference curves (Cole et al., 1995)) and related health risks. As the NCMP letters and SEAs were administered by different teams, SEAs could occur either before or after parents received their NCMP letter.

Measures

Mixed qualitative methods (semi-structured interviews, focus groups and questionnaires) were used to gather perspectives of staff in different roles. Semi-structured interviews were used to capture the experiences of Ms (n=3), who operated in different geographical areas of the city. Conversely SNs/CHPs operated in geographical teams and shared a common frame of reference (SEA delivery), therefore focus groups were used to promote peer interaction and explore the shared and diverse experiences of addressing child weight (Kidd and Parshall, 2000). Two focus groups were conducted with SNs (n=12) and two focus groups with CHPs (n=6), organised by geographical area to take place during office hours. SNs (n=4) and CHPs (n=1) who were unavailable to attend focus groups completed an open-ended e-mail questionnaire.

Questions for all methods were focussed around the research questions, with additional probes as appropriate (see supplementary resources 1, 2 & 3 for full schedules). Although each interview/focus group had key themes, the conversation was driven by participant experiences, allowing the emergence of inductive themes beyond those already identified in

the nursing literature (Steele et al., 2011). To enhance the trustworthiness of data, participants were assured of their anonymity and encouraged to air their honest views, even if their opinions were different from others. All focus groups were facilitated by PW with assistance from either GT or SO. Interviews were conducted by SO or PW.

Analysis

Interviews and focus groups were audio-recorded, transcribed verbatim and imported (along with the questionnaires) into the QSR NVivo 10 qualitative software programme for analysis. A thematic analysis (Braun and Clarke, 2006) was conducted by GT, with frequent debriefing sessions with PW to debate emerging themes and review coding decisions. After reading and re-reading transcripts for familiarisation, text was coded into broad themes aligned with each research question. Coded text was scrutinised for patterns and similarities, and grouped together to form inductive themes which were then reviewed and further refined. When coding the focus group data, interaction between participants was preserved to ensure viewpoints were considered in the context of the surrounding conversation (Kidd and Parshall, 2000).

Ethical approval

Ethical approval was granted by Liverpool John Moores University Research Ethics Committee [ref: 12/SPS/041] and informed written consent obtained from all participants.

Results

Data are organised by research questions, with findings related to questions 1 and 2 presented together. As the themes that emerged from Ms, SNs, and CHPs were comparable, data for

all staff roles are presented together. Verbatim quotes provide illustrative examples, with each participant identified by their role and participant number.

Perceived role and current practice

Participants viewed health promotion as an important part of the school health professional's role, with some SNs/CHPs reporting a desire for greater involvement in child weight management. However efforts to address child weight were limited by a **lack of capacity**, **lack of clear protocols** and **challenges of engaging parents**.

Lack of capacity. Participants felt their ability to support children who were overweight was limited by reduced staffing levels and the requirement to cover for other colleagues (*"We have sickness and absence, we have annual leave, we have other commitments"*, M2). This was compounded by competing priorities that demanded time and attention, most notably child safeguarding and immunisations (*"there's no way we can deliver this [weight management] at the moment –immunisations, your safeguarding, your general public health"*, SN12).

The duration of the SEA was seen as a barrier to addressing weight, as there were a multitude of health issues to cover in 20 minutes (*"no you haven't got a lot of time... you see outside the queue there's another parent arrived, get shut of this one quick"*, CHP4). Many parents failed to turn up for their appointments, which was viewed as wasted time that could have been allocated to other tasks.

Lack of clear protocols. Participants were not aware of any written protocols within the school health service related to childhood obesity (*"there's no clarity on what we should be doing...I don't know about anyone else but I don't know any clear guidelines"*, SN12).

Although participants used child growth charts to identify whether a child was overweight, they drew on their "professional judgement" when deciding what action to take (*"it might say*

they are two centiles apart but what it says there doesn't necessarily correlate to what we see", SN7). Furthermore, the different protocols for diagnosing unhealthy weight used by the school health service (height and weight) and the NCMP (BMI) meant parents sometimes received contradictory information:

Now if the child's [height and weight measurements] are within the correct centiles the nurses may say yeah your child's fine, unfortunately what might happen is they then might get a letter from the [NCMP] saying your child is outside of this (M3)

When it came to onward referral, participants expressed frustration at the lack of support available for children identified as overweight. Participants were unsure of the available referral routes (*"It's alright identifying the problem but...where do we refer to, what do we do with them", CHP2*), unclear about the services others provided (*"I think all they're [dietitians] going to do is give diet advice and I can do that you know I'm a qualified nurse", SN10*), and dissatisfied with the level of feedback they received when they did refer (*"We don't learn anything from the experience...and don't get nothing back to let us know whether that child you referred has got a medical condition or whether [he/she] has referred on to somebody else", SN3*). This led to inconsistent practice that was often based on individual judgement:

If it was just above [two centiles difference] I wouldn't [refer], I'd just use my own judgement...but I don't know if that is the correct thing to do...it's almost a contradiction really if some of us do some of us don't (SN12)

Challenges of engaging parents. Participants described how parents often failed to engage (*"the ones that really need it don't access it", CHP1*) or did not view their child's weight as an issue (*"parents do not always accept that their child has a weight issue and decline onward referral or further monitoring", SN15*). This non-engagement was put down to a range of factors, such as parents being overweight themselves, other issues within the family overriding the child's weight problem, or the child's young age (*"the obesity isn't such a*

problem then, they're not getting teased...a lot of them are quite cute...a bit of puppy fat...it's when they get to eight or nine when it all changes", SN12). It was felt that parents provided socially desirable answers (*"they have 5-a-day and they do exercise and you think but they can't be can they surely", CHP4*) therefore it helped to involve children to elicit honest responses (*"if the child is sitting there and you say to the child...what did you have for your tea last night, and they will confess all sorts", SN3*).

Confidence in addressing weight issues

Participants expressed mixed levels of confidence in addressing weight issues with families. Confidence was often drawn from personal background and experience (*"I feel quite confident in speaking to them [parents]...that may be because of my background", SN12*), but for some participants this was accompanied by uncertainty (*"confident...cos I've had kids myself so you generally know what's healthy...but still winging it a little bit", CHP5*). Other participants lacked confidence in dealing with child weight issues, which was attributed to insufficient training (*"We're not trained formally, you're not confident in what you're delivering you know", CHP6*).

Training

There was a strong feeling amongst participants that training related to childhood obesity was insufficient. Although some relevant training had been offered in the past, not all staff had the opportunity to access it and no further training updates had been provided (*"I'm just hoping I'm doing the right thing, training's not up to date", SN12*). Consequently, many CHPs described learning from other practitioners (*"I did like the fact that I personally had good mentors...who were teaching me the job... I didn't have formal training, but you're learning as you go along", CHP5*). With the exception of one SN who responded via

questionnaire, all participants felt they would benefit from further training in child weight, healthy eating and physical activity (see table 1 for a summary of identified training needs).

Discussion

This study explored the practice of school health professionals in addressing childhood obesity at school entry, using qualitative methods to gain an insight from different staff roles within a school health service. Despite recognizing health promotion as a key role for school health professionals, participants felt unable to provide the level of care they would like to have offered, due to low staffing levels and competing priorities. This was coupled with a lack of childhood obesity training and no clear protocols or pathway for onward referral. Current practice was inconsistent and participants spoke of relying on “professional judgement”, their level of confidence dependent on their personal background and experience.

The organizational challenges described in this study reflect those described by Steele et al. (2011) in the US, and typify the recent nursing climate in the UK (Ball, 2009). The day-to-day realities of competing responsibilities, lack of time and inadequate staffing highlight the need for changes in policy and infrastructure if school health professionals are to realize their role in childhood obesity management. The importance of organizational support is highlighted by Jain and Langwith (2013), who explored the process of implementing a collaborative school-based obesity intervention across six school districts in the US, aimed at supporting school nurses to undertake BMI screening, make onward referrals, and engage with school-level obesity prevention initiatives. The authors found the appointment of a dedicated individual to coordinate the initiative in each district was crucial and implementation was most successful where the local infrastructure supported child health

promotion (e.g. existing BMI screening programmes, available child weight management interventions, supportive school principles).

This was the first known study to explore the way child weight is addressed through SEAs, and to provide an insight into how SEAs align with the NCMP. Despite well-established recommendations to use BMI to diagnose childhood obesity (NICE, 2014) the school health service in this study had not adopted the use of BMI into its practice, and instead continued to diagnose obesity by the difference in height and weight centiles on child growth charts. The different protocols used by the school health service and the NCMP created confusion, and led on occasion to inconsistent messages being communicated to parents. This poor alignment between the SEA and NCMP was heightened by the variable timing that NCMP letters were distributed, meaning for some parents the SEA was the first point of contact about their child's weight, for others the NCMP letter was their first communication.

Our findings highlighted a number of barriers to onward referral from SEAs. Firstly, the participants in our study had received little training in childhood obesity. Therefore, as observed in other paediatric nurse settings (Henderson and Fletcher, 2014), practice lacked a clear evidence-base. Instead, there was a reliance on "professional judgement", with confidence drawn from past experience (e.g. as a school nurse) or personal background (e.g. being a mother). Whilst the influence of past experience on perceived capabilities is well-established (Bandura, 1997), this relationship is counterproductive if that experience is not grounded in evidence or education. For example, health professionals are poor at visually recognising childhood obesity (Smith et al., 2008) therefore experience (i.e. inaccurate visual diagnosis) is an inappropriate guide for future practice. Further barriers to onward referral included a lack of clear protocols, lack of feedback from secondary services and challenges engaging parents, particularly if they did not see their child's weight as an issue. Such challenges may be overcome to some extent by training nurses in weight-related

communication skills, with recent studies showing either web tutorials (Steele et al., 2013) or face-to-face training programmes (Bonde et al., 2014) can be effective.

Limitations

It must be acknowledged our sample was self-selected from one geographical region in the UK and may not be representative of other regions where SEA and NCMP protocols may differ. Whilst we managed to reach a high proportion of the school health professionals working in two areas of the city, we were unable to arrange focus groups with SNs/CHPs from the third area. It is possible this lack of engagement was due to work pressures at the time of the study, and it was suggested some staff may have refused participation because they saw little point in giving up time for something they felt powerless to act upon.

Conclusions and recommendations

This study explored the practice of school health professionals in addressing childhood obesity at school entry. School entry is a unique time-point in the UK school healthcare system, since it involves universal contact with children and parents. The SEA is an opportune moment to address child weight issues, yet we found SEAs to be poorly aligned with NCMP processes and current practice limited by overloaded staff, lack of clear protocols and insufficient training.

For children who are overweight or obese, the recommended care approach is to support the child and their family in becoming more physically active and eating more healthily (NICE, 2013). Bonde et al. (2014) suggest two potential roles for school health professionals in this process. Firstly, through providing BMI screening, counselling and onward referral (e.g. Bonde et al., 2014); secondly, through supporting the provision of whole school obesity interventions (e.g. Jain and Langwith, 2013). For these roles to be realized, appropriate

resources must be allocated to support the evidence-based management of childhood obesity through:

- Training and education for school health professionals in identifying and managing childhood obesity;
- Development of clear protocols for managing childhood obesity through the school healthcare system;
- Development of local child weight management pathways to ensure appropriate referrals and consistency of care;
- Rigorous evaluation of training, protocols and pathways to improve our understanding of how school healthcare services can play a greater role in addressing childhood obesity;
- Improved alignment between the NCMP and school health service provision in the UK.

References

Ball J (2009) *Results from a survey of RCN members working in schools in 2009*. Hove, UK: Employment Research Ltd.

Bandura A (1997) *Self-Efficacy: The Exercise of Control*. New York: W.H.Freeman and Company.

Bonde AH, Bentsen P and Hindhede AL (2014) School nurses' experiences with motivational interviewing for preventing childhood obesity. *The Journal of School Nursing* 30(6):448-455.

Braun V and Clarke V (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* 3(2):77-101.

Cole TJ, Freeman JV and Preece MA (1995) Body mass index reference curves for the UK, 1990. *Archives of Disease in Childhood* 73:25-29.

Falconer CL, Park MH, Croker H et al. (2014) The benefits and harms of providing parents with weight feedback as part of the national child measurement programme: a prospective cohort study. *BMC Public Health* 14: 549.

Health and Social Care Information Centre (2013). *National Child Measurement Programme: England, 2012/13 school year*. Report and tables available at: <http://www.hscic.gov.uk/catalogue/PUB13115> (accessed 2 November 2013).

Henderson EM and Fletcher M (2014) Nursing culture: an enemy of evidence-based practice? A focus group exploration. *Journal of Child Health Care*. Epub ahead of print 8 May 2014. DOI: 10.1177/1367493514530956.

Ikeda J, Crawford PB and Woodward-Lopez G (2006) BMI screening in schools: helpful or harmful. *Health Education Research* 21(6):761-769.

Jain A and Langwith C (2013) Collaborative school-based obesity interventions: lessons learned from 6 southern districts. *Journal of School Health* 83:213-222.

Keyworth C, Peters S, Chisholm A et al. (2013) Nursing students' perceptions of obesity and behaviour change: implications for undergraduate nurse education. *Nurse Education Today* 33(5):481-485.

Kidd PS and Parshall MB (2000) Getting the focus and the group: enhancing analytical rigor in focus group research. *Qualitative Health Research* 10(3): 293-308.

Mikhailovich K and Morrison P (2007) Discussing childhood overweight and obesity with parents: a health communication dilemma. *Journal of Child Health Care* 11(4):311-322.

National Institute for Health and Care Excellence (2013) *Managing overweight and obesity among children and young people. Public Health Guidance 47*. Available at:

<http://www.nice.org.uk/guidance/PH47> (accessed 2 November 2014)

National Institute for Health and Care Excellence (2014) *Obesity: identification, assessment and management of overweight in children, young people and adults. NICE clinical guideline 189*. Available at: <http://www.nice.org.uk/guidance/cg189> (accessed 23 April 2015)

Ng M, Fleming T, Robinson M et al. (2014) Global, regional and national prevalence of overweight and obesity in children and adults during 1980-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 384:766-781.

NHS Institute for Innovation and Improvement (2008) *Quality and service improvement tools: protocol based care*. Available at:

http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/protocol_based_care.html (accessed 2 November 2013).

Park MH, Falconer C, Viner RM et al. (2012) The impact of childhood obesity on morbidity and mortality in adulthood: a systematic review. *Obesity Reviews* 13:985-1000.

Pulgarón ER (2013) Childhood obesity: a review of increased risk for physical and psychological comorbidities. *Clinical Therapeutics* 35(1):A18-A32.

Singh AS, Mulder C, Twisk JWR et al. (2008) Tracking of childhood overweight into adulthood: a systematic review of the literature. *Obesity Reviews* 9:474-488.

Smith SM, Gately P and Rudolf M (2008) Can we recognise obesity clinically? *Archives of Disease in Childhood* 93:1065-1066.

Staniford LJ, Breckon JD, Copeland RJ et al. (2011) Key stakeholders' perspectives towards childhood obesity treatment: a qualitative study. *Journal of Child Health Care* 15(3):230-244.

Steele RP, Wu YP, Yensen CD et al. (2011) School nurses' perceived barriers to discussing weight with children and their families: a qualitative approach. *Journal of School Health* 81(3):128-137.

Steele RG, Wu YP, Cushing CC et al. (2013) Evaluation of child health matters: a web-based tutorial to enhance school nurses' communications with families about weight-related health. *The Journal of School Nursing* 29(2):151-160.

Watson PM, Dugdill L, Pickering K et al. (2015) Service evaluation of the GOALS family-based childhood obesity treatment intervention during the first 3 years of implementation. *BMJ Open* 5: e006519; doi: 10.1136/bmjopen-2014-006519.

Table 1. Training needs related to childhood obesity identified by school health professionals

Main theme	Subtheme	Example quote
Measurement and diagnosis of obesity	Measuring height and weight	<i>“Making sure that people are actually competent to undertake the measurements” (M2)</i>
	Understanding BMI	<i>“I don't know enough about BMI to talk about it” (SN2)</i>
	Talking to parents about weight	<i>“There must be ways of broaching things with parents” (CHP2)</i>
Onward referral	Referral routes	<i>“Where do we refer to, what do we do with them” (CHP2)</i>
	Leaflets and resources	<i>“And... a standardised list of leaflets that we should be giving” (SN8)</i>
Background knowledge	Policy and guidance	<i>“I was going to say more sort of so we are all, we know what are the exact guidelines” (SN8)</i>
	Consequences of overweight	<i>“What can actually happen to that child when they are overweight” (M3)</i>
Supporting healthy lifestyles	Facilitating behaviour change	<i>“I think if we looked into.. supporting them making those changes” (SN12)</i>
	Healthy eating	<i>“Training's not up to date... not even on diet” (SN12)</i>
	Physical activity	<i>“How much they are meant to exercise each day for each age group” (SN1)</i>

Supplementary file 1: Interview schedule – service managers

Research question	Main question	Additional questions/probes
<p>ROLE</p> <p>How do school health professionals perceive their role in addressing childhood obesity?</p>	<p>What do you feel is the school health professional's role in addressing child weight issues?</p>	<ul style="list-style-type: none"> • How do you feel the school health professionals themselves see their role? • Is the school entry health check an appropriate setting to discuss child weight issues? <p><i>(depending on the National Child Measurement Protocol in each area)</i> Height and weight are collected on a different occasion and by a different member of the team prior to the school entry health check.</p> <ul style="list-style-type: none"> • How well do you feel this process works? • What are the positives/challenges? • How do you feel this process could be improved? • Is this a protocol recommended nationally?
<p>CURRENT PRACTICE</p> <p>What is current practice for identifying and managing childhood obesity at school entry?</p>	<p>Talk me through what should happen if a child is overweight when they are seen for their school entry health check.</p>	<ul style="list-style-type: none"> • How do school health professionals identify an overweight child? • How should they communicate this information to the parent and child? • Where do they refer the child to and how? • Do they follow the child up and how? • What protocol is in place for recording action taken when dealing with an overweight child? • How effective do you believe current practice to be? • How consistent do you believe current practice to be? (and if inconsistent, what are the reasons for this?) • Can you give any examples of "good practice" in your area? • What improvements would you like to see in how child weight is addressed at school entry?
	<p>How are service standards determined, communicated and monitored?</p>	<ul style="list-style-type: none"> • Do service standards with respect to child weight at school entry exist? • Who determines how a school health professional should address child weight during the school entry health check? (local or national?) • How is this communicated to school health professionals? • How is this monitored (fidelity)? (i.e. as a service manager, how do you know if what you think is happening is happening?)
<p>TRAINING NEEDS</p> <p>What are the training needs of school health professionals for addressing childhood obesity?</p>	<p>What training could we provide to increase school health professionals' confidence in addressing child weight issues?</p>	<ul style="list-style-type: none"> • Is any training currently available to school health professionals in dealing with child weight and related lifestyle issues (locally or nationally)? • Is any training provided on motivational interviewing and behaviour change? • In your experience what skills do you feel are needed to discuss weight with parents and children? • What topics would you like training to cover?

Supplementary file 2: Focus group schedule – school nurses and child health practitioners

Research question	Main question	Additional questions/probes
ROLE How do school health professionals perceive their role in addressing childhood obesity?	What do you feel is your role in addressing child weight issues?	<ul style="list-style-type: none"> Is the school entry health check an appropriate setting to discuss child weight issues? <p>(depending on the National Child Measurement Protocol in each area) Height and weight are collected on a different occasion and by a different member of the team prior to the school entry health check.</p> <ul style="list-style-type: none"> How well do you feel this process works? What are the positives/challenges? How do you feel this process could be improved?
CURRENT PRACTICE What is current practice for identifying and managing childhood obesity at school entry?	Talk me through what you do if a child is overweight when you see them for their school entry health check?	<ul style="list-style-type: none"> How do you identify whether a child is overweight? How confident are you that your diagnosis is accurate? How do you communicate this information to the parent and child? What determines whether you take any action (e.g. onward referral, note the child as "targeted")? Who do you refer the child to and how? Do you follow the child up and how?
SELF-EFFICACY How confident are school health professionals in addressing child weight and related lifestyle issues with families?	How confident are you when addressing child weight issues with parents and children?	<ul style="list-style-type: none"> What prevents you discussing weight issues? (barriers) How do you feel about raising the issue of weight? How do you feel about discussing healthy eating? What kind of advice do you provide? How do you feel about discussing physical activity? What kind of advice do you provide? Can you describe any good or bad experiences you've had when discussing weight with parents and children?
TRAINING NEEDS What are the training needs of school health professionals for addressing childhood obesity?	What training could we provide to increase your confidence in addressing child weight issues?	<ul style="list-style-type: none"> What training have you already received regarding child weight, healthy eating/PA, motivational interviewing or behaviour change? What skills do you feel are needed to discuss weight with parents and children? What topics would you like training to cover?

Supplementary file 3: E-mail questionnaire – school nurses and child health practitioners (who were unable to attend focus groups)

What is this study about?

This study aims to explore current practice of school health teams in addressing child weight at school entry and to identify training needs. We are interested in your experiences of discussing weight and related lifestyle behaviours with parents and children, how confident you feel and what training you would like to receive. We will then use these ideas to make recommendations to [local public health commissioners and NHS trust] to improve the way child weight is addressed during school entry health checks.

If you are happy to provide your views please answer the questions below and return this e-mail to X by XX. This should take no longer than 5-10 minutes. You may leave any question blank you do not wish to answer.

1. What is your current role / band and how long have you been in it?
2. What was your reason for opting not to attend the focus group?
3. What role do you feel school health professionals should play in addressing child weight issues?
4. The current protocol at reception is to weigh and measure children, then feed this information back to parents through new entry health checks. How well do you feel this process is working?
5. What advice / onward referral do you offer to parents of children who are overweight at school entry?
6. What challenges do you face in providing advice / onward referral?
7. How confident are you in speaking to parents about weight issues?
8. What improvements would you like to see to the way child weight is managed in [city]?
9. Would you be interested in receiving training about (please put a cross in a column to indicate your answer):

	Yes	No	Maybe
Understanding child BMI charts			
Communicating with parents about child weight			
Healthy eating			
Physical activity			
Behaviour change			
Other (please write in)...			

10. Are there any further comments you would like to make?

Many thanks for providing this information. Your views are important in improving services for children and families in [city].