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1 **MAIN DOCUMENT**

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3 **Children’s perspectives and experiences of health, diet, physical activity and**
4 **weight in an urban, multi-ethnic UK population: a qualitative study**

5

6 **ABSTRACT**

7 **Background:** Children from Black and South Asian ethnic groups are at risk for childhood
8 obesity in the UK. To inform local action for childhood obesity prevention, it is crucial to
9 explore the basis of ethnic disparities and consider the perspectives of children. This
10 study aimed to understand cultural and contextual factors influencing childhood obesity
11 in an ethnically diverse population using child-centred methodology.

12 **Methods:** ‘Draw, write and tell’ interviews were held with children aged 9-10 years in
13 XXX, an urban, multi-ethnic city in the UK. Data were analysed thematically using
14 framework analysis.

15 **Results:** Twenty-six children participated (85% from Black or Minority Ethnic Groups).
16 Children’s perspectives revealed universal themes around health, diet, physical activity
17 and weight and highlighted issues specific to ethnic groups and those living in deprived
18 areas. An underlying feature was weight-based stigmatisation and group stereotyping,
19 and an emphasis on internal factors as the cause of obesity. Children described some
20 experiences of social disadvantage, but did not regard these as a barrier to being
21 physically active. Children identified cultural or religious practices or experiences of
22 migration that influenced diet and physical activity.

23 **Conclusions:** These findings allow a broad range of children’s perspectives to inform
24 future intervention design. In addition, the study was able to identify the many
25 similarities and small amount of diversity in children’s perspectives across ethnic groups.

26

27 **Key Messages**

- 28 1. Emphasising the benefits of healthy behaviours for mental well-being is likely to be a
29 motivating message for this age group, but messaging should be sensitive to avoiding
30 the moralisation of such behaviours
- 31 2. Incorporating peer-support components into ‘healthy lifestyle’ interventions may
32 help to reduce the stigmatisation of the overweight/obese body and provide moral
33 support for children

- 34 3. Qualitative research with parents should be considered if seeking to culturally-tailor
35 healthy lifestyle interventions in ethnically diverse populations
36

37 **1 INTRODUCTION**

38 Observational studies have highlighted the presence of ethnic disparities in childhood
39 obesity in the UK, with children from Black, Pakistani and Bangladeshi ethnic groups at
40 high risk, particularly in later childhood (Health and Social Care Information Centre,
41 2014; XXX, 2018). An inverse relationship between socioeconomic status (SES) and
42 childhood obesity is also well documented (Barriuso et al., 2015). Potential mechanisms
43 underpinning ethnic disparities in childhood obesity range from genetic and
44 physiological mechanisms, to socioeconomic and structural barriers and facilitators, and
45 factors associated with migration such as stress and acculturation (XXX, XXX, & XXX,
46 2017). Few studies have explored the influence of parental migration status upon child
47 adiposity in the UK, but there is some evidence that having a foreign-born mother
48 explains some of the higher adiposity observed in children from Black ethnic groups
49 (Martinson et al., 2015). In order to develop appropriate preventative services, local
50 community-specific characteristics and contexts need to be understood. Qualitative
51 approaches provide a means for exploring cultural and contextual influences upon food
52 and physical activity behaviours, and beliefs related to body weight.

53
54 A recent systematic review of the qualitative literature found studies exploring the views
55 of those from ethnic minority communities on childhood weight to be lacking the ‘child’s
56 voice’ (Chatham & Mixer, 2019). An earlier review on the perspectives of children
57 towards body weight found methodological weaknesses in the included studies e.g.
58 lacking features that privilege children’s own framing of issues around obesity; giving
59 little consideration to the role of ethnicity in sampling and analysis; and having a bias in
60 sampling towards children from high socioeconomic groups (Rees et al., 2009). To
61 address ethnic and socioeconomic inequalities in childhood obesity, it is imperative to
62 understand the experiences of children from these high-risk groups.

63
64 Researchers have aimed to fill this gap in the evidence (Eyre et al., 2015; Rawlins et al.,
65 2013). However, these studies were limited by use of focus groups and traditional
66 interviews that do not fully account for the unique challenges of research with children
67 (i.e. risk of group conformity, sensitive topics, wide-varying linguistic abilities, power-
68 imbalance). Child-centred approaches attempt to address these concerns.

69

70 The aim of the current study was to identify the cultural and contextual factors that
71 influence childhood weight status in XXX, England through an exploration of child
72 perspectives and experiences around health, diet, physical activity and weight.

73

74 **2 METHODS**

75 **2.1 Study design**

76 This study was undertaken within a multi-component mixed methods study (XXX, 2018).
77 The first, quantitative phase sought to understand ethnic inequalities in obesity in
78 primary school-aged children in XXX, a large ethnically diverse city in the West Midlands
79 of England, where deprivation is higher than the national average, and the proportion of
80 school children from minority ethnic groups is 48% (XXX City Council, 2018). The current
81 qualitative study was conducted alongside another qualitative study to understand
82 parents' perspectives and experiences of health, diet, physical activity and weight, with
83 data analysed separately due to variation in study design (e.g. sampling approach and
84 data collection methods).

85

86 **2.2 Sampling, recruitment and consent**

87 Children aged 9-10 years were recruited through primary schools in XXX, aiming for a
88 sample size of 20 children. The sampling frame was designed to achieve an ethnically
89 diverse sample, with high proportions of the largest minority ethnic groups in XXX.
90 Schools with a high total proportion of children from Black and Minority ethnic (BME)
91 groups (>XXX average) and/or a high proportion of children having free school meals
92 (>XXX average), based on school census data from the Local Authority, were targeted for
93 recruitment. Of the 85 state primary schools in the academic year 2015/16, 16 schools
94 were invited to take part. In participating schools, all children in year five (aged 9-10
95 years) were provided with child-friendly participant information packs informing them
96 that a researcher (XX) was interested in their views on health, but that they did not have
97 to take part if they did not wish to. In schools with a high response rate, additional
98 sampling was applied at the child level by prioritising children from BME groups. Once
99 children from these groups had been interviewed, children were interviewed
100 sequentially in order of response forms received.

101

102 The researcher (XX) visited the school classes involved prior to the distribution of packs
103 to explain the research in child-friendly terms and build familiarity with the potential
104 participants. Written parental consent and verbal child assent were required. Prior to
105 commencing the interview, children were provided with some options and phrases for
106 ceasing the interview if they chose, and the digital recorder was demonstrated to the
107 child, with the participant being invited to start and stop the interview by pressing the
108 appropriate buttons. The interviewer (XX) checked participant understanding using two
109 questions, adapted from Hensel et al. (2002): “*what will I be talking to you about today?*”
110 and “*what should you do if you don’t want to talk to me anymore?*”. This provided the
111 opportunity to assess the participant’s comprehension, with clarifications being given
112 where children were unclear.

113

114 Parental information packs and topic guides were reviewed by a Patient and Public
115 Involvement representative for the NIHR, and the pupil information packs and data
116 collection methods were piloted with four children from a school in Birmingham. These
117 were subsequently adapted according to feedback and the researcher’s reflections.

118

119 **2.3 Data collection**

120 Child postcode and ethnicity (based on census categories) were collected through
121 parental questionnaire. Child age and migration background were collected through an
122 interview-administered questionnaire with children, using the Ethnic Background
123 Indicators tool from the Health Behaviours in Schools-aged Children study (HBSC-EBI),
124 validated for use in 11 year old children (Nordahl et al., 2011).

125

126 Child perspectives were gathered through a ‘draw, write and tell’ technique (Angell et al,
127 2014) within a semi-structured one-to-one interview. This was selected as an engaging,
128 participatory, familiar and non-threatening method of data collection providing a
129 structured way for children to gently recall experiences and construct cognitively
130 complex ideas, enhancing communication between researcher and child and supporting
131 meaning-making. Children were first asked to draw a picture of a healthy child, and then
132 an unhealthy child. These images were then used as a launch-pad for discussing children’s
133 views on health through the opening question “*can you tell me about your picture?*”. The
134 topic guide prompted the researcher to ask additional questions on diet, physical activity

135 and weight when they weren't raised spontaneously in the discussion. Children were
136 advised that they could write on the paper, and that they did not have to draw a picture
137 or write if they did not wish to.

138
139 Interviews were conducted in a quiet and relatively private space (e.g. meeting room or
140 community room) within the school during the school day or during breakfast club
141 (before school). All interviews were conducted in English, and one child with limited
142 English was supported by a class friend who provided translation when needed (with the
143 agreement of both children). Drawn images, written text and discourse were captured as
144 data. Field notes were taken to note emerging themes and challenges arising. Interviews
145 were recorded on an audio digital recorder and fully transcribed verbatim through an
146 external transcription service and reviewed by the researcher for accuracy and to
147 develop familiarity.

148

149 **2.4 Data analysis**

150 Data were analysed in NVivo v11 using a framework approach, based on the process
151 detailed by Gale et al. (2013). Exploratory free-coding of a sample of transcripts was
152 undertaken by one researcher (XX). The authors met to review codes and agree a coding
153 framework. Once the framework was agreed, transcripts were systematically coded using
154 this *a priori* framework (XX). Drawn images and written text were coded concurrently
155 with the transcripts. There remained scope to add new codes that arose from the
156 remaining transcripts. Next, data were abstracted into a case-code matrix to support the
157 identification and development of emerging themes. These emerging themes were
158 studied and refined into final 'interpretative themes' that went beyond descriptive
159 analysis by seeking possible explanations for what was happening within the data. The
160 existing literature has been critiqued for a lack of attention to the roles of ethnicity and
161 SES in the analysis of qualitative data. As such, we specifically set out to explore these
162 factors; initially through interrogating the data for emerging themes relating to these *a*
163 *priori* concepts, and then through further organising the case-code matrix into aggregated
164 ethnic groupings and parental migration status (parents born abroad versus parents
165 born in UK) to explore any diversity in perspectives. ID numbers have been assigned to
166 verbatim quotes in the text below, enabling cross-referencing with the sociodemographic
167 characteristics of each participant detailed in table 2. Quotes that exemplify each sub-

168 theme are provided in tables, whilst further quotes that reflect nuances in children's
169 views and language are provided in the body of the text. Children's drawn images are
170 also provided to illustrate the content of themes.

171

172 **2.5 Ethical Approval**

173 Ethical approval for the study was granted by the XXX XXX XXX Biomedical Sciences
174 Research Ethics Committee in March 2016 (XXX).

175

176 **3 RESULTS**

177 **3.1 Sample description**

178 Six schools out of 16 invited agreed to participate, with children successfully recruited
179 from three of these schools. Demographic characteristics relating to the proportion of
180 children from BME groups and taking free school meals (FSM), and recruitment numbers
181 for these schools are summarised in table 1.

182

183 Insert table 1 here

184

185 Participant characteristics are provided in table 2. Ethnicity is provided based on census
186 categories. Where the parents of participants selected 'other', they were asked to specify
187 their child's ethnic group in a free text box, and this self-description is detailed where
188 provided.

189

190 An ethnically diverse sample was achieved with 85% (n = 22) of children from non-White
191 British backgrounds. All children interviewed lived in Lower Super Output Areas (LSOAs)
192 of high deprivation, the majority of which (69%; n = 18) were in the top quintile for Index
193 of Multiple Deprivation (IMD) in the UK. Most children interviewed were UK-born (77%;
194 n = 20) but the majority had at least one parent born outside of the UK (77%; n = 20). A
195 higher proportion of girls were interviewed (58%; n = 15). The mean duration of
196 interviews was 31 minutes (range: 14-59 minutes).

197

198 Insert table 2 here

199

200 **3.2 Interpretative themes**

201 Five sub-themes were identified and grouped into three broader 'universal themes': 1)
202 conceptualisations of the 'healthy ideal'; 2) otherisation of obesity; and 3) spheres of
203 influence upon health behaviours. A summary of universal themes and sub-themes with
204 example quotes is provided in table 3.

205

206 **3.2.1 Universal theme 1: Conceptualisations of the 'healthy ideal'**

207 *3.2.1.1 Sub-theme 1: Health and happiness are intrinsically linked*

208 For children, health and happiness were viewed as intrinsically linked, and operated bi-
209 directionally i.e. being healthy makes you happy; and being happy makes you healthy.
210 The converse was also that unhealthy or overweight children were viewed as unhappy
211 e.g. *"they're really sad because they're fat"* (ID3). Happiness was seen to drive health
212 behaviours by providing a sense of positivity and enthusiasm which made healthy
213 behaviours easier.

214

215 *3.2.1.2 Sub-theme 2: Conceptualisations of physical activity drive the barriers identified*

216 Being outdoors was viewed as essential for achieving high levels of physical activity.
217 Conversely, sedentary activities were linked to indoor time (especially the home) and use
218 of technology, and there was a view that unhealthy children have a preference for being
219 indoors. Children appeared personally restricted in physical activity by bad weather and
220 experiences or concerns around safety in public spaces. These barriers appeared to relate
221 to the idea that children viewed physical activity as an outdoor pursuit.

222

223 **3.2.2 Universal theme 2: Otherisation of obesity**

224 *3.2.2.1 Sub-theme 3: Extreme views of obesity allowed children to distance themselves from* 225 *obesity*

226 Children had extreme views of overweight, often viewing it as extreme fatness, bigness
227 or morbid obesity. It was generally accepted that overweight children would be ridiculed
228 by others, particularly at school, and this ridicule related to both physical appearance and
229 personal attributes that people assigned to children who were overweight (see sub-
230 theme 5). This is further demonstrated in one child's drawing of an 'unhealthy child' in
231 Figure 1, describing his picture as follows:

232 *"He's a very fat person and he likes to eat pizza, burgers, chocolate, chips, coke, every*
233 *day, he loves to have a packet of crisps every day, which doesn't... which isn't bad for*

234 *him. He's getting... he's oversize and he's really fat. And at school people make fun of*
235 *him and he... and he thinks his hero is Homer Simpson" (ID7).*

236

237 Insert figure 1 here

238

239 Children's conceptions of obesity allowed children to distance obesity from their own
240 experiences and interactions - as something that is uncommon or unfamiliar (despite four
241 children describing concerns about being overweight).

242

243 *3.2.2.2 Sub-theme 4: Viewed health as a choice and attributed personal values on the basis*
244 *of health*

245 Children felt in charge of their own health, and apportioned blame to individuals for poor
246 health 'choices' i.e. that unhealthy choices are a result of a lack of will power or effort,
247 stubbornness or disinterest. Healthy children were thought of as having positive, valued
248 characteristics e.g. nice, likeable, kind, clever, determined, hardworking, positive and
249 popular. Some children took this one step further, considering the healthy child as
250 virtuous, for example the healthy child was thought to be a "better" person (ID16), doing
251 "the right thing" (ID9) and being "an aspiration to other people" (ID9). On the other hand,
252 unhealthy and overweight children were thought to have negative, less valued
253 characteristics e.g. unkind, uncaring, bad, lazy, sad, angry, stubborn and unpopular (see
254 figure 2). It was generally accepted that the unhealthy and overweight child would be
255 stigmatised by others. Few children empathised with the unhealthy child, viewing
256 children's unhealthy behaviours as akin to character flaws. However, one girl (ID3), who
257 had previously described herself as "a bit overweight" associated feelings of shame with
258 the overweight body, and empathised that these feelings would cause the overweight
259 child to be too sad to be capable of losing weight.

260 *"It's hard for a fat child to get healthy because they're scared that everyone will be*
261 *like, ha, ha, ha, look he's so fat and your belly jiggles and your legs jiggle, and you*
262 *might feel really ashamed of your body and then it's really hard." ID3*

263

264 This child's beliefs suggest that children have the capacity to challenge stigma and that
265 personal experience was key to this.

266

267 Insert figure 2 here.

268

269 **3.2.3 Universal theme 3: Spheres of influence upon health behaviours**

270 *3.2.3.1 Sub-theme 5: Parents, friends and school as key influencers*

271 Parents appeared to have a key role in helping children stay healthy e.g. preparing
272 healthy food (e.g. “my mum gives me all the time some fruit, like apples, bananas” ID2) and
273 role modelling (e.g. “when I’m trying to be healthy I go with my mum... to gym” ID19).
274 Friendships made it easier to stay healthy, as friends encourage a healthy diet, act as role
275 models, and provide opportunities for play. Schools were largely viewed as positive,
276 enabling, healthful environments, providing a means to accessing friends, opportunities
277 for play as well as a network where children inspire one another. An additional benefit of
278 the school approach described by children was that it was universal, and did not target
279 (“pick on”) specific children, reducing opportunities for stigmatisation.

280

281 Insert table 3

282

283 **3.3 Influence of ethnicity and socioeconomic status upon beliefs**

284 When exploring themes relating to the *a priori* concepts of SES and ethnicity, three
285 additional sub-themes were identified. The sub-themes and example quotes are provided
286 in table 4, with counts provided to indicate the number of children referring to each
287 concept.

288

289 *3.3.1 Sub-theme 6: Socioeconomic circumstances and neighbourhood deprivation*

290 References to the influence of socioeconomic circumstances generally came from
291 occasional mentions of the home environment (e.g. living in a block of flats) and material
292 disadvantage (e.g. not owning a car), which were both seen as *enabling* physical activity.
293 Some implicit references to neighbourhood deprivation were made (e.g. descriptions of
294 crime and safety concerns; quality of the local environment; and the number of takeaways
295 on the high street), which were viewed as negatively influencing health behaviours.
296 Overall, despite exploring SES as an *a priori* concept, it did not emerge as a substantial
297 issue in the experiences described by children.

298

299 *3.3.2 Sub-theme 7: Traditional food practices and experiences of migration*

300 A small number of children identified with cultural food practices from other countries,
301 using phrases such as “my country’s food” (ID14: UK-born child with Black African
302 ethnicity) and “In my country...” (ID25: child born abroad of Iranian ethnicity). Of the
303 three children that discussed traditional or faith-based food practices, one child appeared
304 to give higher status to traditional foods (ID14); whilst another child gave low status to
305 his traditional cuisine (ID25). The third child referencing traditional foods mentioned his
306 eating of Indian sweets as an unhealthy behaviour (ID7). A small number of children were
307 first generation migrants (n=6), however, only one child discussed experiences in their
308 native country, drawing contrasts between the UK and his country of origin. For this child,
309 migration to the UK provided greater access to a healthy lifestyle, enabling a positive
310 change in health behaviours.

311

312 *3.3.3 Sub-theme 8: The influence of religious practices upon diet and physical activity* 313 *behaviours*

314 Although three children described specific cultural or religious celebrations or
315 commitments related to food and use of time, these children did not express that these
316 factors influenced their health behaviours. Two children talked about specific foods eaten
317 during Eid celebrations, and these foods were a combination of items typically viewed as
318 healthy e.g. fruit; and unhealthy e.g. fizzy drinks. However, it was apparent from
319 children’s data that Eid was a period of relative permissiveness in relation to food e.g.
320 “I’m waiting for Eid and mum’s going to give me anything I want” (ID3), and that hunger
321 related to fasting resulted in increased desires for unhealthy food e.g. “When I’m fasting
322 at Ramadan, I really want to eat something bad” (ID16). Commitment to attending mosque
323 in the evenings appeared to influence the choice of activities in the after-school period
324 for one child i.e. the time following return from mosque was spent in sedentary activities
325 “having a rest” (ID19).

326

327 Insert table 4 here

328

329 **4 DISCUSSION**

330 Through the privileging of children’s perspectives, this research has identified new
331 insights regarding both universal and ethnic group-specific influences. The current study
332 adds to an understanding of the role of happiness in children’s conceptualisations of the

333 'healthy ideal', proposing that children understand the 'happiness' component of their
334 definitions of health to operate bi-directionally as both a motivation for driving healthy
335 behaviours and as a resource for enabling healthy behaviours.

336

337 The current study found weight-based stigmatisation and group stereotyping, and an
338 emphasis on internal factors as the fundamental cause of obesity (i.e. fundamental
339 attribution error), to be common place in children, and this appeared to form the basis
340 for how children framed health conceptually. Similar findings have been identified by
341 other qualitative researchers (Rees et al., 2009; Trigwell, 2011), however the current
342 study suggests that these negative value judgements are a result of the ways in which
343 children moralised health as 'right' or 'good' and poor health as 'wrong'.

344

345 Other researchers have found fundamental attribution error over the causes of obesity to
346 be common in adults (Sikorski et al., 2011), and the current study goes further to show
347 these views also predominate in children's beliefs. This may be a result of children simply
348 reflecting/reinforcing the beliefs of adults (and society) around them. On the other hand,
349 it may be that well-intended messages promoting the benefits and attainability of healthy
350 lifestyle behaviours for optimal health, weight and happiness, may inadvertently
351 reinforce a contrasting view that those who do not fit this ideal have in some way 'failed'.
352 This failure is seen to justify stigma and ridicule relating to weight status.

353

354 The findings also suggest that the negative value judgements assigned to overweight
355 status were permitted by a distancing of childhood obesity from children's own lives, and
356 the 'otherisation' of obesity. This was driven by children's unrealistic perceptions of the
357 'obese body' and the deflection of the reality of how overweight and obesity appear in the
358 general population (or even in the children themselves). This creates a difficult scenario
359 for those working with children. The distancing of the 'obese' body is, in some ways,
360 potentially protective against the development of pre-occupation with one's weight/body
361 dissatisfaction, and the negative effects this brings (Neumark-Sztainer et al., 2006). On
362 the other hand, this distancing may enable greater stigmatisation of others, the result of
363 which is often social marginalisation or diminished social capital (Strauss & Pollack,
364 2003), which may further restrict the child's ability to undertake healthy behaviours (e.g.
365 playing with friends). The finding that stigma is both a product of, but also driver, of the

366 issue has also been found in relation to depression (Boardman et al., 2011), in which the
367 authors propose consideration of how stigma interacts with coping strategies and
368 resilience during treatment.

369

370 A surprising finding was how children perceived aspects of their socioeconomic
371 circumstances typically viewed as barriers to physical activity (i.e. living in a flat, not
372 having access to a motor vehicle) as enablers. This is a novel finding in children, with
373 other research reporting only barriers related to children's socioeconomic
374 circumstances. The novelty of this finding may be because the current study sought the
375 perspectives of children directly, and recruited exclusively from deprived
376 neighbourhoods, whilst other studies seeking to understand the role of SES upon weight-
377 related behaviours have tended to come from researcher observations or comparative
378 approaches rather than verbalised by children themselves (Backett-Milburn et al, 2003;
379 Eyre et al., 2015; Irwin et al., 2007; Lofink, 2012; Pearce et al., 2009). This surprising
380 finding also contradicts research with parents, who view living in flats and not owning a
381 motor vehicle as barriers to physical activity (Trigwell et al., 2015) – suggesting that
382 children's lived experiences of these familial circumstances may be quite different to
383 those of parents.

384

385 In the current study, children identified very few barriers or facilitators to achieving a
386 healthy weight relating to their ethnicity, religion, country of origin / parental country of
387 origin or experiences of migration. This is surprising since it contrasts with research with
388 parents, who highlight many ethnicity-specific influences upon diet and physical activity
389 behaviours and perspectives towards weight than children (Cross-Bardell et al., 2015;
390 Eyre et al., 2015; Pallan et al, 2012; Rawlins et al., 2013; Syrad et al., 2014; Trigwell et al.,
391 2015). It may be the case that in early childhood, culturally-linked experiences related to
392 ethnicity do not generally manifest - perhaps children don't recognise these as cultural
393 behaviours or do not register them as important enough to mention in discussion.

394

395 **4.1 Strengths and limitations**

396 The use of a draw, write and tell technique allowed the child participants greater freedom
397 and control to highlight issues with salience for them, achieving a potentially more valid
398 understanding of their meanings described in their own ways and words (Noonan et al.,

399 2016). The study makes a significant contribution to the gap in the existing literature
400 highlighted by Rees et al. (2009) by privileging children's views via child-led methods.

401

402 Studies of children's perspectives have been criticised in the past for their inattention to
403 sampling and analysis, especially relating to ethnicity and SES (Rees et al., 2009; Thomas
404 et al., 2003). This study aimed to focus on ethnicity and socioeconomic circumstances *a*
405 *priori*, thus incorporating these factors from the outset. However, although an ethnically
406 diverse sample was achieved (85% from non-White British backgrounds), a number of
407 key ethnic groups in the local population remained unrepresented in the sample,
408 including those from Black Caribbean, Chinese, mixed and Pakistani backgrounds.
409 Participation of children from these groups may have changed the nature of the findings.

410

411 No data on weight status were collected so it was not possible to assess if the sample
412 included both healthy weight and overweight or obese children. This also prohibited the
413 ability to consider how a child's weight status may have influenced their perspectives.
414 However, the decision to not measure weight status was deliberate, as it was felt that this
415 would be an additional barrier to recruitment; and in particular may have discouraged
416 overweight or obese children from taking part.

417

418 Another limitation is the low response rates achieved from both schools and child
419 participants. Reasons for non-participation from school leaders centred on a lack of time.
420 There may also have been a participation bias in the findings favouring schools (and
421 children attending schools) that take an active interest in health and well-being.

422

423 As a qualitative study, it's important to consider the constructed nature of the findings
424 within the context of the personal characteristics of the researchers. In this case, the first
425 author (XX) conducted all interviews and coding. In particular, as XX is of White British
426 ethnicity, children may have been less forthcoming about specific behaviours or
427 traditions relating to their ethnicity if they were of a different ethnicity (Adamson &
428 Donovan, 2002) and this could also have resulted in a failure of the researcher to pick up
429 on some important elements related to ethnicity because of a position as an 'outsider'
430 (Ochieng, 2010).

431

432 **4.2 Implications**

433 This research provides an insight into the salient issues for achieving a healthy weight for
434 primary school-aged children living in deprived areas in XXX, and so provides the basis
435 for developing community-centred preventative services that take children's
436 perspectives into account e.g. providing strategies for being more physically active *within*
437 the home. Emphasising the benefits of a healthy weight and healthy behaviours for
438 mental well-being is likely to be a motivating message for this age group; whilst
439 programmes that improve mental well-being may help children build the personal
440 capacity for achieving behavioural changes. Messages that include a 'peer support'
441 component may help to counter the social marginalisation of those with unhealthy
442 behaviours. This should be supported by messages that discourage weight-based bullying
443 and educational components that counter the prevailing idea of the overweight child as a
444 morbidly obese, ridiculed figure. All such messages should sensitively consider the way
445 in which a healthy weight is portrayed and personified to avoid the unintended
446 consequence of reinforcing unhelpful weight-based stereotyping and stigmatisation.

447
448 There appeared to be little diversity in children's perspectives and experiences across
449 ethnic groups, so support for the cultural-tailoring of intervention messages and
450 components (Liu et al., 2012) is lacking in the current findings. However, the potential
451 influence of culture upon children's obesity-related behaviours should not be dismissed
452 on this basis, since parental perspectives are also important to consider. The literature
453 suggests ethnicity is an important factor in parental perceptions of a healthy weight and
454 parental beliefs and experiences relating to a healthy diet and physical activity, hence
455 local intervention development should also be informed by qualitative research with
456 parents.

457
458 Recommendations for future research include incorporating faith and weight status into
459 qualitative sampling frames, in order to explore how these important factors interact
460 with ethnicity to influence childhood adiposity. Additional public involvement,
461 considering the ethnic diversity of public representatives, and incorporating school
462 leaders, may support recruitment and interpretation of data.

463
464 **5 CONCLUSIONS**

465 This study has contributed to the evidence base by exploring children's perspectives on
466 health, diet, physical activity and weight in an ethnically diverse, deprived population,
467 using methods that privilege children's views. The findings are valuable in allowing
468 children's views to inform the design of future childhood health promotion initiatives,
469 suggesting that obesity prevention and weight management interventions would benefit
470 from focusing on the existing assets that children describe, such as friendships; and
471 emphasising health benefits framed by child-based motivations e.g. happiness and
472 mental well-being. In addition, the study was able to identify the many similarities and
473 the small amount of diversity in children's perspectives and experiences across ethnic
474 groups, filling a gap in the literature and contrasting with some of the existing literature.

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478 REFERENCES

- 479 Angell, C., Alexander, J., & Hunt, J. A. (2014). 'Draw, write and tell': A literature review and
480 methodological development on the 'draw and write' research method. *Journal of*
481 *Early Childhood Research*, 13(1), 17-28. doi:10.1177/1476718X14538592
- 482 Backett-Milburn, K., Cunningham-Burley, S., & Davis, J. (2003). Contrasting lives,
483 contrasting views? understandings of health inequalities from children in differing
484 social circumstances. *Social Science & Medicine*, 57(4), 613-623.
485 doi:http://dx.doi.org/10.1016/S0277-9536(02)00413-6
- 486 Barriuso, L., Miqueleiz, E., Albaladejo, R., Villanueva, R., Santos, J. M., & Regidor, E. (2015).
487 Socioeconomic position and childhood-adolescent weight status in rich countries:
488 a systematic review, 1990-2013. *BMC Pediatrics*, 15, 129-129.
489 doi:10.1186/s12887-015-0443-3
- 490 Boardman, F., Griffiths, F., Kokanovic, R., Potiriadis, M., Dowrick, C., & Gunn, J. (2011).
491 Resilience as a response to the stigma of depression: a mixed methods analysis.
492 *Journal of Affective Disorders*, 135(1-3), 267-276. doi:10.1016/j.jad.2011.08.007
- 493 Chatham, R. E., & Mixer, S. J. (2019). Cultural Influences on Childhood Obesity in Ethnic
494 Minorities: A Qualitative Systematic Review. *Journal of Transcultural Nursing*,
495 31(1), 87-99. doi:10.1177/1043659619869428
- 496 XXX City Council. (2018). Facts about children in XXX - April 2018. Accessed 10th January
497 2020. Retrieved from
498 [https://www.xxx.gov.uk/downloads/download/3585/xxx_childrens_demograp](https://www.xxx.gov.uk/downloads/download/3585/xxx_childrens_demographics_profile)
499 [hics_profile](https://www.xxx.gov.uk/downloads/download/3585/xxx_childrens_demographics_profile)
- 500 Cross-Bardell, L., George, T., Bhoday, M., Tuomainen, H., Qureshi, N., & Kai, J. (2015).
501 Perspectives on enhancing physical activity and diet for health promotion among
502 at-risk urban UK South Asian communities: a qualitative study. *BMJ Open*, 5(2).
503 doi:10.1136/bmjopen-2014-007317
- 504 Eyre, E. L., Duncan, M. J., Birch, S. L., & Cox, V. (2015). Environmental and school influences
505 on physical activity in South Asian children from low socio-economic

506 backgrounds: A qualitative study. *Journal of Child Health Care*, 19(3), 345-358.
507 doi:10.1177/1367493513508845

508 Health and Social Care Information Centre. (2014). *National Child Measurement*
509 *Programme: England, 2013/14 school year*. Accessed 10th January 2020. Retrieved
510 from [https://digital.nhs.uk/data-and-](https://digital.nhs.uk/data-and-information/publications/statistical/national-child-measurement-programme/2013-14-school-year)
511 [information/publications/statistical/national-child-measurement-](https://digital.nhs.uk/data-and-information/publications/statistical/national-child-measurement-programme/2013-14-school-year)
512 [programme/2013-14-school-year](https://digital.nhs.uk/data-and-information/publications/statistical/national-child-measurement-programme/2013-14-school-year)

513 Hensel, E., Rose, J., Kroese, B. S., & Banks-Smith, J. (2002). Subjective judgements of quality
514 of life: a comparison study between people with intellectual disability and those
515 without disability. *Journal of Intellectual Disability Research*, 46(Pt 2), 95-107.

516 Irwin, L. G., Johnson, J. L., Henderson, A., Dahinten, V. S., & Hertzman, C. (2007). Examining
517 how contexts shape young children's perspectives of health. *Child: Care Health and*
518 *Development*, 33(4), 353-359. doi:10.1111/j.1365-2214.2006.00668.x

519 Liu, J., Davidson, E., Bhopal, R., White, M., Johnson, M., Netto, G., Deverill, M. Sheikh, A.
520 (2012). Adapting health promotion interventions to meet the needs of ethnic
521 minority groups: mixed-methods evidence synthesis. *Health Technology*
522 *Assessment*, 16(44), 1-469. doi:10.3310/hta16440

523 Lofink, H. E. (2012). 'The worst of the Bangladeshi and the worst of the British': exploring
524 eating patterns and practices among British Bangladeshi adolescents in east
525 London. *Ethnicity & Health*, 17(4), 385-401. doi:10.1080/13557858.2011.645154

526 Martinson, M. L., McLanahan, S., & Brooks-Gunn, J. (2015). Variation in child body mass
527 index patterns by race/ethnicity and maternal nativity status in the United States
528 and England. *Maternal and Child Health Journal*, 19(2), 373-380.
529 doi:10.1007/s10995-014-1519-7

530 XXX. (2018). *An exploration of childhood obesity across ethnic groups in XXX*. (Doctor of
531 Philosophy in Medical Sciences). University of Warwick,

532 XXX, XXX, & XXX. (2017). Obesity in International Migrant Populations. *Current Obesity*
533 *Reports*, 6(3), 314-323. doi:10.1007/s13679-017-0274-7

534 Neumark-Sztainer, D., Paxton, S. J., Hannan, P. J., Haines, J., & Story, M. (2006). Does body
535 satisfaction matter? Five-year longitudinal associations between body satisfaction
536 and health behaviors in adolescent females and males. *Journal of Adolescent*
537 *Health*, 39(2), 244-251. doi:10.1016/j.jadohealth.2005.12.001

538 Noonan, R. J., Boddy, L. M., Fairclough, S. J., & Knowles, Z. R. (2016). Write, draw, show,
539 and tell: a child-centred dual methodology to explore perceptions of out-of-school
540 physical activity. *BMC Public Health*, 16, 326. doi:10.1186/s12889-016-3005-1

541 Nordahl, H., Krølner, R., Páll, G., Currie, C., & Andersen, A. (2011). Measurement of Ethnic
542 Background in Cross-national School Surveys: Agreement Between Students' and
543 Parents' Responses. *Journal of Adolescent Health*, 49(3), 272-277.
544 doi:http://dx.doi.org/10.1016/j.jadohealth.2010.12.013

545 Pallan, M., Parry, J., & Adab, P. (2012). Contextual influences on the development of
546 obesity in children: a case study of UK South Asian communities. *Preventive*
547 *Medicine*, 54(3-4), 205-211. doi:10.1016/j.ypmed.2012.01.018

548 Pearce, A., Kirk, C., Cummins, S., Collins, M., Elliman, D., Connolly, A. M., & Law, C. (2009).
549 Gaining children's perspectives: a multiple method approach to explore
550 environmental influences on healthy eating and physical activity. *Health & Place*,
551 15(2), 614-621. doi:10.1016/j.healthplace.2008.10.007

552 Rawlins, E., Baker, G., Maynard, M., & Harding, S. (2013). Perceptions of healthy eating
553 and physical activity in an ethnically diverse sample of young children and their

554 parents: the DEAL prevention of obesity study. *Journal of Human Nutrition &*
555 *Dietetics*, 26. doi:10.1111/j.1365-277X.2012.01280.x

556 Rees, R., Oliver, K., Woodman, J., & Thomas, J. (2009). *Children's views about obesity, body*
557 *size, shape and weight. A systematic review*. Accessed 10th January 2020. Retrieved
558 from <https://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2463>

559 Sikorski, C., Luppia, M., Kaiser, M., Glaesmer, H., Schomerus, G., König, H.-H., & Riedel-
560 Heller, S. G. (2011). The stigma of obesity in the general public and its implications
561 for public health - a systematic review. *BMC Public Health*, 11(1), 661.
562 doi:10.1186/1471-2458-11-661

563 Strauss, R. S., & Pollack, H. A. (2003). Social Marginalization of Overweight Children.
564 *Archives of Pediatrics & Adolescent Medicine*, 157(8), 746-752.
565 doi:10.1001/archpedi.157.8.746

566 Syrad, H., Falconer, C., Cooke, L., Saxena, S., Kessel, A. S., Viner, R., Kinra, S., Wardle, J. &
567 Croker, H. (2014). "Health and happiness is more important than weight": a
568 qualitative investigation of the views of parents receiving written feedback on
569 their child's weight as part of the National Child Measurement Programme. *Journal*
570 *of Human Nutrition and Dietetics*, 28(1), 47-55 doi: 10.1111/jhn.12217

571 Thomas, J., Sutcliffe, K., Harden, A., Oakley, A., Oliver, S., Rees, R., . . . Kavanagh, J. (2003).
572 *Children and healthy eating: a systematic review of barriers and facilitators*.
573 Accessed 10th January 2020. Retrieved from
574 <https://eppi.ioe.ac.uk/cms/Default.aspx?tabid=246>

575 Trigwell, J. (2011). *Addressing childhood obesity in ethnic minority populations*. (Doctor of
576 Philosophy). Liverpool John Moores University, Liverpool.

577 Trigwell, J., Murphy, R. C., Cable, N. T., Stratton, G., & Watson, P. M. (2015). Parental views
578 of children's physical activity: a qualitative study with parents from multi-ethnic
579 backgrounds living in England. *BMC Public Health*, 15(1), 1005.
580 doi:10.1186/s12889-015-2351-8

581 Trigwell, J., Watson, P., Murphy, R., Stratton, G., & Cable, N. (2014). Ethnic differences in
582 parental attitudes and beliefs about being overweight in childhood. *Health*
583 *Education Journal*, 73(2), 179-191 <https://doi.org/10.1177/0017896912471035>
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593 **TABLES**

594 Table 1. Characteristics of participating schools

School ID	BME pupils (%)	FSM (%)	Packs distributed (n)	Interviews completed (n)
1	66	43	60	9
2	90	31	60	5
3	86	31	90	12
Total				26

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Table 2. Participant characteristics

ID	Ethnicity	Boy/girl	Age	Deprivation decile (10 = highest deprivation decile)	Child migration status	Parental migration status
ID1	Black African	Girl	10	10	UK born	Both UK-born
ID2	White European	Girl	9	10	UK born	Both parents non-UK born
ID3	Black African	Girl	10	10	Non-UK born	Both parents non-UK born
ID4	White European	Boy	10	10	Non-UK born	Both parents non-UK born
ID5	White British	Boy	10	Not provided	UK born	Both UK-born
ID6	Other: 'British Pakistani'	Girl	10	10	UK born	One parent UK born
ID7	Asian Indian	Boy	10	9	UK born	Both parents non-UK born
ID8	Arab	Boy	10	10	UK born	Both parents non-UK born
ID9	White British	Girl	10	10	UK born	Both UK-born
ID10	Black African	Girl	10	10	UK born	Both parents non-UK born
ID11	White European	Boy	10	10	Non-UK born	One parent UK born
ID12	Other: 'Afghan'	Girl	10	8	Non-UK born	Not provided
ID13	Asian Indian	Girl	9	10	UK born	One parent UK born
ID14	Black African	Boy	10	8	UK born	Both parents non-UK born
ID15	Asian Bangladeshi	Girl	10	10	UK born	Both parents non-UK born
ID16	Other: 'Black African and Arab'	Boy	10	10	UK born	Both parents non-UK born
ID17	Arab	Boy	10	8	UK born	One parent UK born
ID18	White British	Girl	10	9	UK born	Both UK-born
ID19	Other: 'Afghan'	Girl	10	9	Non-UK born	Both parents non-UK born
ID20	Asian Bangladeshi	Girl	10	10	UK born	Both parents non-UK born
ID21	Other: 'Kurdish'	Girl	10	10	UK born	Both parents non-UK born
ID22	White British	Girl	10	10	UK born	Both UK-born
ID23	Asian Indian	Boy	10	8	UK born	One parent UK born
ID24	Other: 'White British and Asian Indian'	Girl	10	10	UK born	One parent UK born
ID25	Other: 'Iranian'	Boy	10	10	Non-UK born	Both parents non-UK born
ID26	Asian Bangladeshi	Boy	10	10	UK born	Both parents non-UK born

Table 3. Universal themes and exemplar quotes

Themes	Example quotes
<i>Universal theme 1: Conceptualisations of the 'healthy ideal'</i>	
Sub-theme 1: Health and happiness are intrinsically linked	<p>"vegetables and fruit have got loads of like good ingredients that when you eat it like, it makes you feel good about yourself" ID9</p> <p>"...when you don't exercise the happy chemicals don't get released so you won't be a really happy person" ID6</p> <p>"if you're sad it's really hard to get fit... Because you're not in the mood to do anything because you're so angry and frustrated at everyone else, you're like no I'm never going to do it." ID3</p>
Sub-theme 2: Conceptualisations of physical activity drive the barriers identified	<p>"He [the unhealthy child]... doesn't like going outside, he likes staying inside." ID15</p> <p>"When it's raining, I will just sit down and watch TV. When it's shiny [sunny] I will go outside, ride my bike, calling friends outside to play." ID4</p>
<i>Universal theme 2: Otherisation of obesity</i>	
Sub-theme 3: Extreme views of obesity allowed children to distance themselves from obesity	<p>"He [the unhealthy child] don't like nothing because he's too big, he can't sit nowhere, he has to sit on the floor. He's bored, coz got no friends... he can't get anywhere because he's too fat, so he has to go in his taxi car and things" ID1</p>
Sub-theme 5: Viewed health as a choice and attributed personal values on the basis of health	<p>"He [the unhealthy child] wishes he was fit but obviously he can't be bothered to. That's it." ID5</p> <p>"...you have to sometimes think that you like something but you've got to make the right choice and pick something that's a bit healthier." ID11</p> <p>"... when you're not very healthy you're like not very kind and when you're really healthy you're very kind.." ID18</p>
<i>Universal theme 3: Spheres of influence upon health behaviours</i>	
Sub-theme 5: Parents, friends and school as key influencers	<p>"When my mum tells me what... I ask her, what do we eat, and then she tells me... She tells me what benefits it has inside, and how much calories, and how good it is." ID16</p> <p>"She [my friend] was the one who helped me because I told to her to like put a bit more weight on but she told me to lose a lot of weight and I've done it." ID9</p> <p>"Well, they [the school] don't just like say, 'oh this person needs to this to be healthy', they give the same information to everybody, so not just them, because then that's just like a bit mean like you're like picking on somebody." ID24</p>

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Table 4. Beliefs and influences relating to socioeconomic status and ethnicity and example quotes

Sub-theme	Example quotes
Sub-theme 6: Influences of socioeconomic circumstances and neighbourhood deprivation	<p>"Having a bike and living in a flat [helps me to be healthy], because it means you have a big area which means... and it's always empty so you can always ride play." ID21</p> <p>"There isn't any leisure centres for him [the unhealthy child]. There isn't any parks, nothing. He's all... it's very messy as well and there's nothing there." ID7</p>
Sub-theme 7: Traditional food practices and experiences of migration	<p>"I always eat my mum's food. And my country's food, I always eat - it has lots of carbohydrates and protein in it. We have rice, meat, that sort of thing." ID14</p> <p>ID25: "Every Irani is eating rice"</p> <p>Interviewer: "And is that good or bad?"</p> <p>ID25: "Bad"</p> <p>Interviewer: "Why do you think it's bad?"</p> <p>ID25: "Oil. That's Irani's habit"</p>
Sub-theme 8: The influence of religious practices upon diet and physical activity behaviours	<p>"I'm waiting for Eid and mum's going to give me anything I want" ID3</p> <p>"When I'm fasting at Ramadan, I really want to eat something bad" ID16</p> <p>"...sometimes we go to the mosque and then when we come back we have three hours until it's bedtime. But I always spend this time drawing, enjoying TV... playing games and stuff... sitting down and having a rest." ID19</p>

FIGURES

Figure 1. Drawing of a healthy child and unhealthy child by participant ID7

Caption: This boy drew a healthy child (left) as positive, with a medal around his neck and muscly arms, whilst the drawing of the unhealthy child (right) was very large and referenced the cartoon character Homer Simpson.

Figure 2. Drawing of an unhealthy child by participant ID26

This boy drew an unhealthy child as unpopular (having "no friends"). The text reads *"eats too much junk food and chocolate Plays on busy roads and gets hurt No friends"*