Ethnic differences in parental attitudes and beliefs about being overweight in childhood

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Abstract

Objective: This study examined the relationship between ethnic background and parental views of healthy body size, concerns surrounding overweight and attitudes to perceived causes of overweight in childhood.

Method: A self-report questionnaire was designed to explore parental attitudes towards childhood weight. Sampling deliberately over-represented the views of parents from minority ethnic groups. Eight-hundred-and-eight parents of school-aged children completed the questionnaire. Parental data from Asian British, Black African, Black Somali, Chinese, South Asian, White British and Yemeni groups were included in the analysis.

Results: Data showed that ethnic background was significantly associated with parental beliefs that overweight children will grow out of being overweight ($X^2 [12, n = 773] = 59.25, p < 0.001$) and that overweight children can still be healthy ($X^2 [12, n = 780] = 25.17, p < 0.05$). In both cases, agreement with the statements was highest among Black Somali parents. While the majority of parents believed that both dietary behaviours and physical activity played a role in the development of overweight in childhood, Yemeni parents were more likely to attribute overweight in childhood to dietary but not physical activity causes.

Conclusion: Ethnic differences in parental perceptions of weight in childhood must be considered in the design of, and recruitment to, childhood obesity interventions aimed at minority ethnic groups.

Keywords

Body weight, children, ethnic groups, overweight, parents

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Introduction

Childhood obesity in the United Kingdom (UK) is a serious public health concern. Figures report 30% of children aged 2–15 years in England to be overweight or obese.\(^1\) Data have shown obesity prevalence in some minority ethnic groups (Asian/Asian British; any other ethnic group; Black/Black British; Mixed) to be significantly higher than the national average.\(^2\) Successful approaches to childhood obesity treatment involve parental support.\(^3\) Since parental attitudes towards overweight determine whether a family engages in treatment, it is important to understand how attitudes differ between minority ethnic groups.

Research has shown parental ability to recognize childhood overweight is low among various ethnic populations.\(^4\)–\(^6\) Studies in the United States have found parental ethnic background to be significantly associated with misclassification of their children’s weight status.\(^7\)–\(^9\) West et al. (2008)\(^9\) reported that African American parents with children aged 3–18 years were more likely to underestimate the weight status classification of their child than White parents. A lack of parental recognition of childhood overweight among ethnic groups is compounded by the pervasive finding that parents of overweight children are often not concerned about their child’s overweight status\(^10\)–\(^12\) or aware of its health implications.\(^13\)–\(^15\) Data from the Millennium Cohort Study showed that 54% of Black African and 40% of South Asian parents with an obese five-year-old were unconcerned about their child’s weight.\(^11\) It has also been documented that American Indian,\(^13\)\(^,\)\(^14\) African American\(^16\) and Latino\(^15\) parents often do not associate children’s overweight status with health problems. These are important findings given that parental concern for a child’s overweight status is significantly associated with readiness to make lifestyle changes for that child.\(^15\) Moreover, parental knowledge and beliefs concerning the causes of overweight may have implications for behaviours undertaken to prevent or treat childhood overweight. Previous research has reported poor parental awareness of the relationship between overweight and unhealthy eating and physical inactivity among various ethnic populations.\(^12\),\(^17\)\(^,\)\(^18\)

Research that has explored parental attitudes surrounding childhood weight has predominately taken place outside of the UK and the association between ethnic background and parental views has been largely neglected. The aim of this study was to examine the relationship between ethnic background and parental views of healthy body size, concerns surrounding overweight and attitudes to perceived causes of overweight in childhood.

Method

Access and sample

Between July and December 2009, questionnaires (~10,000) were distributed to parents of children aged 4–16 years across ethnically diverse wards in Liverpool, UK, as identified by population data.\(^19\) Wards were classified as ethnically diverse if the proportion of residents from minority ethnic groups was higher than the Liverpool average (8.2%).

A stratified sampling approach was employed to deliberately over-represent minority ethnic parents. Questionnaires were distributed via schools \((n = 22)\), primary and secondary care services \((n = 2)\), places of worship \((n = 5)\) and community centres \((n = 42)\) within the identified areas. As minority ethnic populations are at a disproportionately high risk of social exclusion,\(^20\) snowball sampling was encouraged to help reach families who may have been unable to access the research in any other way. A participant information sheet was distributed with each questionnaire. Respondents’ consent was ascertained by the completion and return of the questionnaire.
**Design and methods**

As there was no suitably validated questionnaire available for the purpose of this study, a systematic approach was taken to develop a self-report questionnaire. The initial set of questions was piloted with parents of school-aged children and bilingual community workers and amendments made according to the feedback received. This process aided the face, content and construct validity of the questionnaire, confirming questions were understood as intended, making certain the range of dimensions entailed in each concept were covered, and ensuring responses on closely related items were consistent. The final questionnaire comprised four sections: *About You, Weight in Childhood, About Your Children, and Further Research*. The questionnaire took respondents ~5–10 minutes to complete.

The first section, *About You*, gathered information on demographic characteristics (respondent’s age, postcode and ethnic and religious background).

Section two, *Weight in Childhood*, contained six questions evaluating parents’ general views on childhood weight. The first question asked parents to choose which of seven gender specific drawings, designed by Collins (1991), represented the healthiest weight for a 10-year-old girl. Using the same format, this question was then repeated to assess parental perceptions of the healthiest weight for a 10-year-old boy. Figures were pre-coded one to seven, representing most underweight (1) to most overweight (7; see Figure 1). Question three in this section explored the importance parents placed on weight in childhood (‘how important is it to you that your child/children are a healthy weight?’). The next question comprised of a series of six statements intended to ascertain levels of parental agreement with issues concerning childhood overweight. In question

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**Figure 1.** Body Figures taken from Collins (1991).
five, parents’ views on what causes overweight in childhood were explored via a multiple choice question (‘What do you think causes children to become overweight?’; response options: ‘not enough physical activity’, ‘eating too much’, ‘eating the wrong kinds of food’, ‘illness/injury’, ‘genes’, ‘too much television and computer’, ‘other’). Finally, in order to check consistency of responses across measures and fully operationalize the concept of ‘parental concern’, parents were asked who they would seek support from if they had an overweight child.

Section three, About Your Children, was designed to assess parents’ perceptions and concern regarding the weight of their own children (aged between 4 and 16 years), as well as to collect further demographic information, including age and gender of children, and relationship to children. Respondents were asked to state whether their child was underweight, a little underweight, about the right weight, a little overweight or overweight. Level of parental concern for their child’s current weight status was assessed by asking ‘are you worried about this child’s weight right now?’ (response options: ‘Not at all worried’, ‘a little worried’, ‘moderately worried’, ‘very worried’). Where parents had more than one child (aged between 4 and 16 years), they were asked to provide separate responses for each child.

Section four of the questionnaire, Further Research, offered parents the opportunity to provide their contact details if they wished to participate in further research and/or be entered into a prize draw to win a £50 supermarket voucher as an incentive to complete the questionnaire.

The participant information sheet and questionnaire was produced in nine languages (Arabic, Bengali, Czech, English, French, Mandarin, Polish, Somali and Urdu). Research materials were translated from the English originals into target languages using one-way translation. To ensure the semantic, conceptual and normative equivalence of questions when translated, in-depth discussions with bilingual researchers, community workers and professional translators took place. Where parents were unable to read or write, the questionnaire was administered verbally.

Analysis

Questionnaires were excluded from analysis if respondents were not parents, did not have a child aged between 4 and 16 years, provided no details for a child, did not report ethnic background, or belonged to an ethnic group with fewer than 20 respondents. Where multiple copies of the questionnaire were returned by a single respondent, the first questionnaire received was used in the analysis and all duplications removed.

Descriptive statistics were generated for all variables. Chi-square tests for independence were applied to test for associations between categorical variables. Data collected using interval scale variables did not meet parametric assumptions; therefore Mann-Whitney U tests were used to assess between-group differences. Data were analysed using the Statistical Package for the Social Sciences (SPSS) 17.0 for Windows. Statistical significance was defined as $p < 0.05$.

Ethics

The study was approved by the local National Health Service (NHS) Research Ethics Committee.

Results

Questionnaires were returned from 1,052 parents, 808 of which were eligible for analysis. Within the 808 questionnaires, data were provided for 1,427 children aged 4–16 years. Eighty-two per cent of respondents were mothers and 18% were fathers. Ten per cent of parents were aged 20–29 years, 37% aged 30–39 years, 36% aged 40–49 years, and 6% aged 50 years or older. Age data were
missing for 11% of parents. Ethnic background was identified as: White British \((n = 603, 75\%)\), Black Somali \((n = 43, 5\%)\), Chinese \((n = 41, 5\%)\), Black African \((n = 40, 5\%)\), South Asian \((n = 28, 3\%)\), Asian British \((n = 27, 3\%)\) and Yemeni \((n = 26, 3\%)\). Where possible, respondents’ self-identification of ethnic background was used in the analyses. However, parents from Asian Bangladeshi, Asian Indian and Asian Pakistani backgrounds were clustered as one ‘South Asian’ group due to low response rates within each subgroup. Within the South Asian group, nine parents identified their ethnic background as Asian Pakistani, nine as Asian Indian and ten as Asian Bangladeshi.

Parents from each minority ethnic group were over-represented in comparison to the overall Liverpool population.\(^{19}\) Based on the 2007 Index of Multiple Deprivation (IMD) score, 84% of respondents resided in areas below the Liverpool Average IMD level,\(^{22}\) with 64% living within the 10% most deprived Super Output Areas in England.

Respondents had between one and five children \((mean = 1.8, SD = 0.9)\) who were aged between 4 and 16 years \((mean age = 9.9, SD = 3.5)\).

**Perceived overweight status of children**

Twenty-six per cent of parents perceived at least one of their children to be overweight. Figure 2 provides a breakdown of results by ethnic background. Ethnic differences were observed, albeit not significant, among the proportion of parents identifying at least one of their children as overweight \((p = 0.29)\). South Asian and Yemeni parents were more than twice as likely to perceive at least one of their children as overweight than Black African parents. The proportion of parents who viewed at least one of their children as overweight was similar across all other ethnic groups.

![Figure 2](image-url)
There was a statistically significant association between perceived level of overweight and parental concern ($X^2[3, n = 237] = 110.1, p < 0.001$); the more overweight children were perceived to be, the more parents were concerned. Of the children considered overweight, 30% of parents were moderately worried, and a further 54% were very worried. When compared to children who were considered a little overweight, 27% had a parent who was not concerned, and 54% had a parent who was a little worried. Numbers were too small to test for statistical significance by ethnic background.

### Healthy body size

Overall, the median perceived healthy body size for a 10-year-old child within each ethnic group was figure four (out of seven; see Tables 1 and 2). However, it was observed that a greater proportion of Black Somali parents (36%) chose a larger figure (figure five, six and seven) for a 10-year-old girl as healthy, in comparison to Asian British (13%) and Chinese (10%) groups. A similar pattern was evident regarding parental perceptions of the healthiest weight for a 10-year-old boy; Black Somali parents (39%) were more likely than Chinese parents (15%) to view a larger figure for a 10-year-old boy as healthy.

### Table 1. Parental perceptions of healthy body size for a 10-year-old girl.

| Ethnic background | Figures 1–3 | Figure 4 | Figures 5–7 |
|-------------------|-------------|----------|-------------|
|                   | $n$ | %  | $n$ | %  | $n$ | %  |
| Asian British     | 4   | 17 | 17 | 71 | 3   | 13 |
| Black African     | 4   | 11 | 23 | 64 | 9   | 25 |
| Black Somali      | 2   | 6  | 21 | 58 | 13  | 36 |
| Chinese           | 5   | 13 | 30 | 77 | 4   | 10 |
| South Asian       | 1   | 4  | 20 | 77 | 5   | 19 |
| White British     | 33  | 6  | 447| 76 | 111 | 19 |
| Yemeni            | 1   | 4  | 17 | 71 | 6   | 25 |
| Overall           | 50  | 6  | 575| 74 | 151 | 19 |

### Table 2. Parental perceptions of healthy body size for a 10-year-old boy.

| Ethnic background | Figures 1–3 | Figure 4 | Figures 5–7 |
|-------------------|-------------|----------|-------------|
|                   | $n$ | %  | $n$ | %  | $n$ | %  |
| Asian British     | 2   | 8  | 15 | 60 | 8   | 32 |
| Black African     | 2   | 5  | 28 | 76 | 7   | 19 |
| Black Somali      | 4   | 11 | 18 | 50 | 14  | 39 |
| Chinese           | 6   | 15 | 27 | 69 | 6   | 15 |
| South Asian       | 3   | 11 | 19 | 68 | 6   | 21 |
| White British     | 29  | 5  | 458| 77 | 108 | 18 |
| Yemeni            | 1   | 4  | 17 | 64 | 8   | 31 |
| Overall           | 47  | 6  | 582| 74 | 157 | 20 |
classified at least one of their children as overweight were twice as likely to select a larger figure (figure five, six or seven) to represent the healthiest weight for a 10-year-old child (girl, 32%; boy, 33%) when compared with parents who did not consider any of their children as overweight (girl, 15%; boy, 15%).

### Attitudes to overweight in childhood

Table 3 shows levels of agreement and disagreement to statements regarding overweight in childhood. A significant association was observed for the statement ‘I would prefer my children to have too much body fat than not enough’ and parental ethnic background \((p \leq 0.001)\). The Black Somali group had the highest level of agreement (31%), although all ethnic groups were more inclined to disagree than agree. A second significant association was found between parental ethnic background and the statement ‘most overweight children will grow out of it’ \((p \leq 0.001)\). Black African and Black Somali parents were the only cohorts more likely to agree than disagree. A further significant relationship was observed for the statement ‘overweight children can still be healthy children’ \((p < 0.05)\). Black Somali (64%) parents had the highest level of agreement, whereas the lowest level of agreement was found amongst the South Asian (19%) and Yemeni (20%) groups. Similarities in the responses given by Chinese and White British parents were observed; a comparable proportion of Chinese and White British parents disagreed they would prefer their children to have too much body fat than not enough (40% and 47% respectively), did not believe overweight children would grow out of it (60% and 64% respectively) and thought overweight children can still be healthy (38% and 35% respectively).

Parental perceptions of the health status of overweight children was significantly associated with their agreement with the statement ‘if a child is overweight, it is important to sort it out as soon as possible’ \(X^2[4, n = 777] = 37.6, p < 0.001, \text{Cramer’s } V = 0.2\). Of the parents who believed
Table 4. Perceived causes of overweight.

| Causes of Overweight                          | Asian British | Black African | Black Somali | Chinese | South Asian | White British | Yemeni | Pearson chi square |
|----------------------------------------------|---------------|---------------|--------------|---------|-------------|---------------|--------|-------------------|
| Not enough physical activity                 | 85            | 75            | 63           | 85      | 71          | 89            | 50     | 51.14d            |
| Eating too much                              | 70            | 55            | 78           | 78      | 54          | 65            | 62     | 9.93              |
| Eating the wrong food                        | 74            | 73            | 54           | 66      | 89          | 89            | 50     | 75.82d            |
| Illness/injury                               | 22            | 13            | 15           | 12      | 25          | 26            | 0      | 18.22b            |
| Genes                                        | 41            | 25            | 37           | 27      | 43          | 31            | 0      | 16.37a            |
| Too much screen watching                     | 41            | 33            | 37           | 37      | 50          | 54            | 19     | 24.24c            |

*p < 0.05; b p < 0.01; c p < 0.001.

Chi-square test not valid. More than 20% of cells have an expected count less than five.

that overweight children were not healthy, 94% thought that if a child is overweight it is important to resolve it as soon as possible, compared to 77% of parents who considered overweight children as healthy. A further 91% of parents who disagreed that most overweight children will grow out of it deemed it important to sort out an overweight child’s weight status as soon as possible (X²[4, n = 769] = 31.5, p < 0.001, Cramer’s V = 0.1).

Causes of overweight in childhood

Eighty-one per cent of parents thought a combination of dietary factors and physical activity levels/sedentary behaviour was the main cause of overweight in childhood. A significant relationship was observed between ethnic background and sedentary behaviour, illness/injury and genetics (p < 0.05). Yemeni parents were the least likely to attribute sedentary behaviour (19%), illness/injury (0%) and genetic make-up (0%) to overweight in childhood (see Table 4).

Eighty-six per cent of White British, 83% of Chinese and 81% of Asian British parents were of the view that both dietary and physical activity factors played a role in the development of overweight in childhood, compared to only 38% of Yemeni parents (X²[6, n = 803] = 63, p < 0.001), who were more likely to attribute overweight in childhood to dietary but not physical activity causes (50%).

Discussion

The aim of this study was to examine the relationship between ethnic background and parental perceptions of weight in childhood among an ethnically diverse sample of parents living in Liverpool. Findings indicate ethnic differences in healthy ideals of body size, concern for overweight and parental beliefs about causes of overweight in childhood.

Previous research has indicated ethnic background to be significantly associated to the misclassification of children’s overweight status.7, 23, 24 This may be explained by findings from the current study whereby perceptions of a healthy weight for a 10-year-old child differed according to ethnic background. Black Somali parents viewed a larger body size as healthy in comparison to Asian British and Chinese parents for a girl, and only Chinese parents for a boy. It can therefore be
suggested that Black Somali parents may be more likely to underestimate their child’s overweight status. This assertion is supported by the work of Killion et al. (2006), where data showed not only did Hispanic and African American mothers with pre-school children generally perceive their child to be thinner than their actual size, but over half of parents who had an overweight child were satisfied with their child’s size or wanted their child to be heavier.

The findings from this study showed Black Somali parents not only had a tendency to perceive a larger body size to be healthy but were also less likely to consider overweight in childhood as a problem; 64% of Black Somali parents agreed that overweight children can still be healthy, compared to only 19% and 20% of South Asian and Yemeni parents respectively. Previously, research has indicated that American Indian and African American parents and caregivers do not associate overweight in their children with health problems. Data from the current study implies this is also true for Black Somali parents.

It is well established that overweight children are at heightened risk of becoming overweight adults. The current study showed ethnic differences in perceptions surrounding the relationship between childhood obesity and future health, with Black Somali parents the most likely to perceive overweight as a phase children will grow out of. This tendency has been observed elsewhere in African American, American Indian, Hispanic and Turkish populations. Conversely, in a UK study, Carnell et al. (2005) did not find ethnic background to be significantly associated with parental concern for future obesity in their overweight children aged 3–5 years. Carnell et al.’s study used dichotomous ethnic categories (White/non-White) so may have hidden more finite differences between ethnic groups.

Ninety-one per cent of parents who disagreed that most overweight children will grow out of it also thought that if a child is overweight it is important to sort it out as soon as possible. In line with this result, 94% of parents who agreed that overweight children were not healthy believed that, if a child is overweight, it is important to rectify as soon as possible. This finding is consistent with research conducted by Rhee et al. (2005), who found parental concern about the overweight status of a child to be significantly associated with readiness to make lifestyle changes for that child. Black Somali parents exhibited the lowest level of concern for childhood overweight in comparison to all other groups, suggesting that parental readiness to make lifestyle changes for an overweight child may also be lower in this group.

Taken together, these results suggest parents of Black Somali origin perceive a larger body size to be healthy, are more likely to view overweight children as healthy children, and are more likely to believe they will grow out of it. Therefore it can be inferred that Black Somali parents may be less likely to recognize overweight in their own child, less concerned about the health problems associated with overweight and less likely to address the problem because they perceive their child will grow out of it. Interventions targeted at Black Somali groups may therefore benefit from adopting a healthy lifestyle rather than weight approach to reach minority ethnic families.

The observed ethnic differences in parental perceptions surrounding weight in childhood may be attributable to variations in cultural attitudes to body size. In Western cultures, a slim body size in childhood is considered the healthy ideal. However, research has reported parental preferences for a larger body size in childhood among Pakistani, Bangladeshi, Black African and Black Caribbean groups in the UK. Among these ethnic groups, being overweight is considered a desirable and appealing state thought to represent good health and wealth. It is also recognized that acculturation may have concealed further ethnic differences in parental attitudes to child weight. With regards to adult body size, there is evidence to suggest South Asian, Black African and
Black Caribbean women living in the UK are being influenced by Western ideals of slimness and report cultural attitudes that value overweight to be ‘out of date’.

Data showed overweight in childhood was attributed to a combination of lifestyle factors by the majority of parents. This supports previous research from Goodell et al. (2008) who found among a sample of low socioeconomic status Hispanic, West Indian and African American parents of children aged 2–5 years that a combination of lifestyle factors, and/or genetics and ‘destiny’ was deemed to cause overweight in childhood. Within the current study Yemeni parents were more likely to attribute overweight in childhood to dietary but not physical inactive behaviour, suggesting they lacked awareness of the association between physical inactivity and overweight. Interestingly, Yemeni parents also reported the highest proportion of overweight children. Parents’ perceptions of ‘causal’ factors may impact on the lifestyle changes they deem necessary for an overweight child, or what lifestyle choices should be made to prevent overweight in the future. Therefore, in particular ethnic groups, the importance of lifestyle factors in preventing and treating overweight must be addressed.

**Limitations**

The potential bias associated with the self-selected participation in this study is acknowledged, and results can be taken as representative only of parents who returned the questionnaire. Although 10,000 questionnaires were distributed to gatekeepers it was not possible to report a response rate since surplus questionnaires were not always returned to the research team as requested.

This study was successful in over-representing the views of minority ethnic parents and, where possible, respondents’ self-identification of ethnic background was used in the analyses to ensure potential inter-group differences were not concealed. However, samples of minority ethnic parents were small and findings must be interpreted with caution. Where results are reported for the whole sample, it is important to note findings will largely reflect the views of the White British majority, who made up 75% of the sample. Variations in the levels of acculturation within and between minority ethnic groups may also have confounded ethnic differences in the associations found.

Since no suitably validated questionnaire was available for the purpose of this study, a questionnaire was developed. Whilst measures were in place to aid the validity of questions, including pre-testing the questionnaire, validation studies are recommended. It is acknowledged that back-translation is the preferred method for translating research materials, which requires at least two independent translators in order to identify any discrepancies between the source and the target language. Whilst limited resources meant back translation was not possible in the current study, strategies were in place to aid quality assurance in the translation process. These included discussions with bilingual researchers, community workers and professional translators, and piloting translated versions of research materials.

Due to the sensitive nature of the research, it is acknowledged that questions may have elicited socially desirable responses. In relation, employing a scoring system with a middle category allowed for non-committal answers. Whilst this is the preferred practice when using self-administered questionnaires, ensuring a directional opinion is not forced, it is recognized that this may have led to the majority of parents selecting body figure four to represent a healthy weight for a 10-year-old child, potentially concealing further differences between and within ethnic groups. Ordering images randomly, rather than by size, may have prevented respondents’ regressing to the mean, and elicited further ethnic differences.
Conclusions

This study aimed to examine the relationship between ethnic background and parental attitudes about weight in childhood, knowledge about the causes of overweight in childhood and perceptions about their own child’s weight. Findings showed clear differences as well as commonalities in perceptions and attitudes towards childhood overweight between various ethnic groups. In regards to ethnic differences, it was found that Black Somali parents tended to perceive a larger body size to be healthy and were most likely to view overweight children as healthy and believe they will grow out of it. This research therefore illustrates the importance of addressing ethnic differences in parental perceptions of overweight in childhood when designing an obesity management intervention.\textsuperscript{38} It is suggested findings have implications for the manner in which families are targeted for inclusion in childhood obesity management interventions. In some groups improved parental recognition of overweight in childhood may be needed, health benefits associated to healthy weight must be reinforced, and the importance of lifestyle factors in preventing and treating overweight addressed. Where overweight and/or its health implications are not recognized, interventions may benefit from adopting a healthy lifestyle rather than weight approach to reach minority ethnic families. Further research is needed to explore the role of culture in parental attitudes to overweight in childhood.

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