

# BMJ Open “A little on the heavy side”: a qualitative analysis of parents’ and grandparents’ perceptions of preschoolers’ body weights

Karin Eli,<sup>1</sup> Kyndal Howell,<sup>2</sup> Philip A Fisher,<sup>2</sup> Paulina Nowicka<sup>1,3</sup>

**To cite:** Eli K, Howell K, Fisher PA, *et al.* “A little on the heavy side”: a qualitative analysis of parents’ and grandparents’ perceptions of preschoolers’ body weights. *BMJ Open* 2014;**4**:e006609. doi:10.1136/bmjopen-2014-006609

► Prepublication history and additional material is available. To view please visit the journal (<http://dx.doi.org/10.1136/bmjopen-2014-006609>).

Received 12 September 2014  
Revised 17 November 2014  
Accepted 20 November 2014

## ABSTRACT

**Objectives:** Parents’ difficulties in perceiving children’s weight status accurately pose a barrier for family-based obesity interventions; however, the factors underlying weight misinterpretation still need to be identified. This study’s objective was to examine parents and grandparents’ perceptions of preschoolers’ body sizes. Interview questions also explored perceptions of parental responsibility for childhood obesity and appropriate contexts in which to discuss preschoolers’ weights.

**Design:** Semistructured interviews, which were videotaped, transcribed and analysed qualitatively.

**Setting:** Eugene and the Springfield metropolitan area, Oregon, USA

**Participants:** Families of children aged 3–5 years were recruited in February–May 2011 through advertisements about the study, published in the job seekers’ sections of a classified website (Craigslist) and in a local newspaper. 49 participants (22 parents and 27 grandparents, 70% women, 60% with overweight/obesity) from 16 low-income families of children aged 3–5 years (50% girls, 56% with overweight/obesity) were interviewed.

**Results:** There are important gaps between clinical definitions and lay perceptions of childhood obesity. While parents and grandparents were aware of their preschoolers’ growth chart percentiles, these measures did not translate into recognition of children’s overweight or obesity. The participants spoke of obesity as a problem that may affect the children in the future, but not at present. Participants identified childhood obesity as being transmitted from one generation to the next, and stigmatised it as resulting from ‘lazy’ parenting. Parents and grandparents avoided discussing the children’s weights with each other and with the children themselves.

**Conclusions:** The results suggest that clinicians should clearly communicate with parents and grandparents about the meaning and appearance of obesity in early childhood, as well as counteract the social stigma attached to obesity, in order to improve the effectiveness of family-based interventions to manage obesity in early childhood.

## INTRODUCTION

While there is growing evidence of the superior effectiveness of lifestyle interventions

## Strengths and limitations of this study

- This study’s sample is the largest ever reported in a qualitative investigation of family members’ perceptions of preschoolers’ body weights.
- While most previous studies focused only on mothers’ perceptions of their preschoolers’ body weights, this study included mothers, fathers, grandmothers, and grandfathers, recognising that various adult family members influence young children’s body image, eating and exercise habits.
- Although low-income participants tend to be difficult to reach, the study successfully recruited a predominantly low-income sample.
- The sample primarily consisted of families of Caucasian origin, and thus did not allow for an investigation of the influence of cultural background on perceptions of children’s body sizes.
- As several participants were single mothers, the number of fathers was not high enough to enable an assessment of potential differences between fathers’ and mothers’ perceptions.

initiated early in childhood,<sup>1–3</sup> one of the main barriers in conducting such interventions is parents’ lack of recognition of, or concern about, obesity in children. Parents’ difficulties in perceiving children’s body sizes accurately have been demonstrated since the early 2000s, across many countries, cultures and child ages.<sup>4–6</sup> A recent study of over 16 000 children aged 2–9 years from eight European countries has shown that, among parents of overweight children, 63% perceived their children’s weights as ‘proper’, independent of educational level.<sup>7</sup> Moreover, a meta-analysis of 69 studies on parental perceptions of children’s body weights showed that half of the parents underestimated their children’s weight.<sup>8</sup>

Most studies have applied a quantitative approach to describe parents’ miscategorisation of children’s weight status; however, the



CrossMark

For numbered affiliations see end of article.

## Correspondence to

Dr Paulina Nowicka;  
[paulina.nowicka@ki.se](mailto:paulina.nowicka@ki.se)

underlying factors have not been identified conclusively.<sup>6</sup> To date, only two studies<sup>9 10</sup> have used in-depth interviews to examine how parents make sense of children's body weights and their health implications. In their study of low-income mothers, Jain *et al*<sup>9</sup> have shown that most mothers did not worry about their children's body weights if the children were active and socially accepted; the mothers, moreover, distrusted paediatric growth charts, and attributed childhood obesity to genetics, rather than to factors modifiable in the home environment. Misinterpretation of growth charts was also highlighted by Rich *et al*,<sup>10</sup> who found that 80% of parents perceived their child as healthy although the child's weight was at the 95th centile. These parents, notably, were aware of obesity-related health risks. More recently, focus groups revealed that, in assessing their children's body sizes, parents tend not to rely on clinical measurements; rather, they often compare their children visually to other children, whose body sizes can be defined as extreme, thus skewing their perceptions of what a healthy body size is.<sup>11</sup>

So far, existing research on parental perceptions of children's body weights has focused almost exclusively on mothers, and has not examined the critical influence of other family members, such as fathers and grandparents.<sup>12</sup> Since family-based interventions have been proposed as the most effective approach to treating child obesity,<sup>13 14</sup> knowledge about how other adult caretakers perceive and discuss young children's body weights will contribute to understanding familial barriers to treatment. Moreover, the fostering of sensitive and non-judgmental communication about children's eating practices and body sizes is important for the prevention of body dissatisfaction and disordered eating in childhood and adolescence.<sup>15 16</sup> To examine caretakers' perceptions of young children's body weights from a broader familial perspective, we designed this study to include family sets of parents and grandparents actively involved in taking care of preschool age children. While investigating communication about food and physical activity among parents and grandparents of preschoolers was the main aim of the study, the participants' perceptions of children's body weights were essential to the study. All participants answered several questions about this topic, resulting in rich and unique material. Given this, we found that this topic merited dedicated discussion, apart from the larger study. As childhood obesity remains high among families with low socioeconomic status,<sup>17–19</sup> and as it is more difficult to recruit and retain these families in intervention programmes<sup>20 21</sup> we chose to target a low-income population.

## METHODS

Families of children aged 3–5 years from the Pacific Northwest (Eugene and Springfield metropolitan area, Oregon) were recruited in February–May 2011 through advertisements about the study, published in a local

newspaper and the volunteers' and job seekers' sections of Craigslist (the most widely used classified advertisement website in the USA). The active involvement of grandparents in family life (defined as spending time with the grandchild at least twice a month) was the primary criterion for inclusion in the study. Consequently, only families in which at least one parent and one grandparent were willing to be interviewed were included in the study. The other inclusion criteria specified that the child's age must be between 3 and 5 years, and that the child should have no underlying medical condition or disability which would affect his/her weight. All families who contacted the study coordinator and were found to fulfil the inclusion criteria were recruited to the study. When the participants first met with the researchers, and before the interviews took place, the researchers verbally explained the informed consent forms to each participant, and answered any questions participants had. If the parents/grandparents agreed to participate, they were asked to read and sign the written project description and project consent forms. The families received a copy of the written study description and informed consent forms.

Parents and grandparents were interviewed separately at the Oregon Social Learning Center. Free child care was provided on site, and the children were not present during the interviews. Each interviewed participant received compensation of \$50 for participating in the study. Prior to the interview, parents and grandparents completed a comprehensive sociodemographic questionnaire routinely used in research projects involving families at the Oregon Social Learning Center; the questionnaire included items concerning family composition, parental education, employment status and living conditions. All the interviewed parents and grandparents as well as the preschooler in focus had their height and weight measured, without shoes and wearing only light clothing, by trained research staff prior to the interviews. The interviews, which were conducted by a single researcher (either the second or the last author), lasted 1.5–2.5 h and explored the different roles of family members in shaping a child's lifestyle. Before coding, all participant names were changed to ensure confidentiality.

This paper focuses on the parents' and grandparents' perceptions of young children's body weights, with particular emphasis on overweight and obesity, parental responsibility for childhood obesity, and contexts in which parents and grandparents discuss preschoolers' body weights. The main questions are summarised in [box 1](#).

It should be noted that while all participants were asked the same main questions, the interview process allowed for fluidity, and follow-up questions were adapted according to each participant's responses. Additionally, while the majority of data directly refer to the main questions listed, the present analysis includes pertinent comments the participants made throughout the interviews. The interviews were videotaped and transcribed in full;

**Box 1** Questions included in this study

1. Do you think that how much a child weighs matters? If yes, why? If not, why?
2. How much do you think that a child's weight is possible to control/controllable?  
If yes, what lifestyle choices do you think are the most important? How/when do you think they can be promoted, and who do you think can do that? And who in the family plays the most important role when it comes to influencing the child's weight?  
If no, what makes you think that way?
3. What do you think about your child's (or grandchild's) weight? (As compared to his/her siblings, cousins, other children, to the child's parents. Are you concerned/not concerned?)
4. What do you think that the parents of your grandchild think about your grandchild's weight (or grandparents of your child about your child's weight)? (Examine: If there are two parents (grandparents) in the house, do they have the same opinion?)
5. Do you talk about your child (grandchild's) weight with his/her grandparents (parents)? (If yes, why, how? If not, why? Examine: If there are two parents in the house, which of them do you talk the most with and why?)
6. Do you know if your child (grandchild) thinks about his/her weight? (Probe: Does he/she ever comment on it? Did that happen in your presence? If yes, what did you say? If your child doesn't think about his/her weight, is it good or bad?)

videotaping allowed for the inclusion of non-verbal expressions in the transcriptions. For this paper, transcript sections that related to the main questions were extracted and collated. The transcripts were then coded independently by the first and the last author, using a thematic discourse analysis approach. Discourse analysis is concerned with people's use of language to describe and make sense of their realities, and is an appropriate approach for qualitative studies that examine people's definitions of and spoken attitudes towards health issues.<sup>22</sup> Thematic analysis facilitates the identification of patterns in qualitative data, and therefore allowed the researchers to delineate themes across the data set.<sup>23</sup> Over several in-person meetings and email correspondence, the two coders compared and discussed their codes, to examine and resolve potential disagreements, and reach consensus on the clustering of codes into themes and on the grouping of themes under thematic categories.

**RESULTS**

In total, 49 family members (70% female) from 16 families were interviewed. The sample included 22 parents and 27 grandparents—subsample sizes suitable for data saturation.<sup>24</sup> Seven families consisted of single parent with sole responsibility for the child (5 single mothers and 2 single fathers). In 10 families, only 1 grandparent was interviewed; in 2 families, 2 grandparents were interviewed; in 3 families, 3 grandparents were interviewed; and in 1 family,

4 grandparents were interviewed. In 5 of the families, all grandparents who had contact with the grandchild were interviewed. The most common reason for not being able to include full sets were the other grandparents' residing outside the study area.

Participants' characteristics are summarised in [table 1](#). All data refer to parents and grandparents who were interviewed as part of the study. Owing to the targeted recruitment process (ads in job advertisement sections) the sample displayed low levels of education and income; as many as 50% of parents were unemployed. The majority of children, parents and grandparents were Caucasian, reflecting the ethnicity profile of this region of the Pacific Northwest.

All the interviewed parents and grandparents as well as the preschooler in focus had their height and weight measured, without shoes and wearing only light clothing, by trained research staff prior to the interviews. These measurements were taken in order to contextualise the participants' stated perceptions of and attitudes toward childhood overweight/obesity and associated lifestyle factors. In most cases, the researcher who took the participants' weight and height measurements also interviewed them. However, this did not influence the study, as the participants' and the children's BMI statuses were not calculated prior to the interviews, so as not to bias the interview process. Thus, the interviewers and the participants were not informed about the child's or any of the adult family members' weight status. The interviewers were informed about the participants' and the children's weight statuses following the interviews; the participants were not informed about their own or their children's weight statuses. More than half of parents and two-thirds of grandparents had overweight or obesity, according to WHO criteria.<sup>25</sup> Of the children, 56% were either overweight or obese (overweight: 85th centile < body mass index (BMI) <95th centile; obesity: BMI ≥95th centile);<sup>26–28</sup> those five who were categorised as obese were in the 95th, 96th, 98th (two children) and 99th centiles for their BMI.

The analysis yielded 12 major themes, clustered under four thematic categories: Perceptions of young children's body sizes, perceptions of the timeline of obesity, perceptions of parental responsibility and blame for childhood obesity, and perceptions of appropriate contexts for speaking about preschoolers' body weights. While the number of fathers was not high enough to enable an assessment of differences between fathers' and mothers' perceptions and attitudes, there did not appear to be gender differences in participants' accounts. Furthermore, no generational differences were observed between the parents' and the grandparents' perceptions of their preschoolers' body sizes. Examples of participant quotes from each of the thematic categories and their constituent themes are presented in table format ([boxes 2–5](#)). The complete sets of pertinent participant quotes are provided as supplemental material (see online supplementary tables S1–S4).

**Table 1** Descriptive statistics of the sample

	Child (n=16)	Parent (n=22)	Grandparent (n=27)
Age (mean in years, range)	4.6 (3.1–5.7)	32.2 (22.7–49.5)	56.9 (43.0–77.9)
Gender			
Female	8 (50%)	14 (64%)	21 (78%)
Male	8 (50%)	8 (36%)	6 (22%)
Racial background			
Euro-American/Caucasian	11 (68%)	21 (95%)	23 (84%)
Native American	0	1 (5%)	0
Asian	0	0	1 (4%)
African-American	0	0	1 (4%)
Mixed	5 (32%)	0	2 (8%)
BMI (mean, range)	17.7 (14.3–21.5)	26.8 (16.1–39.1)	29.1 (16.1–49.4)
Weight status			
Underweight	0	2 (9%)	1 (3%)
Normal weight	7 (44%)	8 (36%)	8 (30%)
Overweight	4 (25%)	6 (27%)	10 (37%)
Obese	5 (31%)	6 (27%)	8 (30%)
Highest school grade completed	NA		
High school		8 (82%)	20 (74%)
College/university		4 (18%)	7 (26%)
Working situation	NA		
Full time		7 (32%)	8 (30%)
Part time		4 (18%)	4 (15%)
Not employed*		11 (50%)	15 (55%)
Annual household income	NA		
Less than 14 999 USD		8 (36%)	7 (26%)
15 000–24 999 USD		6 (27%)	6 (22%)
25 000–39 999 USD		4 (18%)	6 (22%)
More than 40 000 USD		4 (18%)	8 (30%)

\*The main reasons for unemployment among parents were child care, pursuing higher education, and not finding work; among grandparents, unemployment was due to not finding work, reaching retirement age or retiring due to health issues. NA, not applicable.

### Perceptions of young children's body sizes

None of the participants used the words 'obese' or 'overweight' to describe the preschoolers who were later identified as such (box 2). The participants used a range of words to describe the body sizes of these preschoolers, including 'pudgy', 'chunky', 'solid', 'stout', 'chubby', 'stocky', 'big boned', and 'robust'. Several participants described the preschoolers as 'tall' and/or 'big for their age'. Notably, even the father of the heaviest child in the sample (99th centile) described his child as 'a little on the heavy side'. Across the sample, including the parents and grandparents of normal weight children, the participants spoke of 'baby fat' as cute and healthy, and even as something to encourage. A few participants also spoke of children's higher percentiles on the growth charts (>90th centile) in positive terms. The parents and grandparents of the overweight or obese preschoolers said their body weight was not worrisome because children go through 'growth spurts' and 'stretch out', such that their current excess weight will eventually convert into height.

### Perceptions of the timeline of obesity

The participants spoke of obesity as a problem that may affect the preschoolers in the future, but not at present

(box 3). Several participants indicated that a high body weight becomes problematic when the child reaches school age, particularly due to the risk of teasing, social exclusion, and bullying. Participants also said that a high body weight becomes problematic when it negatively affects the child's health, activities, behaviors, or mood. However, only one participant, whose child was in the 99th centile for weight, said that she could notice the detrimental effects of the child's body weight at present. Thus, even when speaking of obesity in terms of impact on activity and health, the participants placed it outside the remit of the preschoolers' current experience. Participants also spoke of obesity as problematic due to its manifestations in adulthood, expressing that child's body weights and their eating and exercise habits are important because they translate into 'long lasting effects' and 'hav[ing] more trouble as an adult'.

### Perceptions of parental responsibility and blame for childhood obesity

The participants identified parents as bearing primary responsibility for their children's eating and exercise habits and for their body weights (box 4). Even those participants who spoke of body size as being affected by genetics asserted that parents can still influence



## Box 2 Examples of participants' quotes on perceptions of young children's body sizes

### Theme 1: Young children are 'pudgy' or 'big for their age', but not obese

1.1 Gp03P2 (Father)\*\*\*: Yeah, I think personally, my son is a little on the heavy side. (...) But he, in my opinion, I think he's a little on the big side, but he's also strong as an ox, so how much is muscle and fat I don't know. You know, it's hard to tell when they're that age.

1.3 Gp11G1 (Mother's mother)\*\*\*: [My granddaughter's] not small... she's not fat but she's solid. (...) I never find her overweight.

1.6 Gp01P1 (Father)\*\*\*: but [my daughter], unfortunately... she just is blessed where she is a little chunky at parts.

1.14 Gp11G1 (Mother's mother)\*\*\*: She is a big girl. She is solid and she's like 54 pounds. (...) But we're not concerned... she's definitely not fat or overweight... the doctor has never been concerned about her weight.

### Theme 2: 'Baby fat' is cute and healthy

2.2 Gp05P2 (Father)\*: I think children should be nice and thick. (...) A healthy baby, nice thick chubby cheeks, chubby little legs, you know.

2.10 Gp11P1 (Mother)\*\*\*: Well we kind of joke about it because my daughter's kind of got the little girl gut.

2.11 Gp01G1 (Mother's mother)\*\*\*: she does have cute little love handles.

2.12 Gp10P1 (Mother)\*\*: I just think chubbier kids are cuter. So I try to keep him a little chubby.

### Theme 3: Children go through 'growth spurts' and 'stretching out'

3.2 Gp01P1 (Mother)\*\*\*: But I do also believe that children have hills and valleys. They are all going to grow at different rates and they going to go through the pudgy phase and then they just, you know they start doing this (makes expanding outward hand movements) and then they just grow like a tree, then they lean up.

3.3 Gp02G1 (Father's mother)\*\*\*: My son goes up and down, my 7 year-old, goes up and down in his weight...but he usually gets plump and then has a growth spurt and so then it evens out. So I don't worry too much about it.

3.7 Gp03P2 (Father)\*\*\*: by the time [my friends] graduated from high school, all of a sudden they went a foot taller, and I think all the width went to height.

\*=parent/grandparent of child with normal weight.

\*\*=parent/grandparent of child with overweight.

\*\*\*=parent/grandparent of child with obesity.

Gp#—family group number; P—parent; G—grandparent.

their children's body weights. Likewise, participants who mentioned that children may be overweight or obese due to a health condition (eg, glandular dysfunction) said that parents are responsible for making sure the child's medical problem is identified and resolved. The participants argued that parents are responsible for children's body weights because they can control what their children eat, provide a healthy food environment at home, encourage their children to play outside and be active, and model healthy behaviours themselves.

## Box 3 Examples of participants' quotes on perceptions of the timeline of obesity

### Theme 4: A high body weight becomes problematic later in childhood

4.3 Gp01G1 (Father's mother)\*\*\*: I think she is probably okay right now but if she continues on the growth pattern that she's going she's going to be an obese little girl and I think that's sad because kids make fun of kids when they are growing up and they're heavy.

4.4 Gp01P1 (Father)\*\*\*: at that young of an age I don't think it really matters. (...) I would say (weight matters) when they hit junior high or middle school. It probably, that's when they're, that's as a girl, as a guy I don't think we really ever care.

4.6 Gp13P1 (Mother)\*\*\*: I have one friend whose 11 year old is starting to get really chunky... my friends and I have that hard conversation with her: "(...) Look at [your son], he's going to get made fun of at school and he's starting to get really fat, and you need to watch what he's eating."

4.8 Gp13G1 (Mother's mother)\*\*\*: [His mother] has a paediatrician that is particularly in-tune with larger children, and he's been able to make her aware of possible pitfalls in the future. The importance of getting in to school, getting socialised, cause he's always going to be the big kid.

### Theme 5: Children's body weight becomes problematic when it affects their activities or health

5.1 Gp03P1 (Mother)\*\*\*: I still feel like it limits him, it makes him tired quicker, things like that. And I wish that that was not the case, I wish things were a little more effortless and things like that.

5.2 Gp11P1 (Mother)\*\*\*: Her doctor has always said that she's very healthy; she's really bright and wants to learn everything and she's still very physically active. (...) And so that has encouraged me that her weight is okay and her doctor has always said that she's just fine.

5.6 Gp01P1 (Father)\*\*\*: I think if they are happy within themselves and they're being active, I don't think it's really a concern.

### Theme 6: Obesity becomes problematic in adulthood

6.3 Gp02P1 (Father)\*: You're setting the foundation for what your body's going to be like as an adult.

6.6 Gp13G2 (Mother's father)\*\*\*: I think if they are becoming obese and overweight, and are inactive, that's not a good place to be as a child. *Why?* Because then they are probably going to have more trouble as an adult, if it's already manifesting itself at a young age.

6.8 Gp16G1 (Father's mother)\*\*\*: I think it's not just your weight as a child but it goes with you your whole life, if you struggle with weight as a child then you probably will your whole life.

6.9 Gp06P1 (Mother)\*\*: we are more concerned with lifelong patterns and habits, because... they are going to take all those habits into adulthood.

\*=parent/grandparent of child with normal weight.

\*\*=parent/grandparent of child with overweight.

\*\*\*=parent/grandparent of child with obesity.

Gp#—family group number; P—parent; G—grandparent.

The participants' concepts of parental responsibility linked with their attitudes towards parental blame for childhood obesity. Several participants said they 'judged' parents whose children were obese; some even said that the parents of obese children were guilty of child

#### Box 4 Examples of participants' quotes on perceptions of parental responsibility and blame for childhood obesity

##### **Theme 7: Parents have control over children's eating, physical activity and body weights**

7.1 Gp01P1 (Mother)<sup>\*\*\*</sup>: We're the ones that are solely responsible for their food that goes into their mouth, how much food goes onto their plate, and what their activities are. (...) If they have some thymus gland issue, or whatever, then obviously that's going to be out of your control but you're going to be looking to a doctor to get it back under control.

7.5 Gp04G3 (Mother's mother)<sup>\*</sup>: Genetics are a factor, but not strong enough to be above food and activity levels. I think it's completely manageable no matter what if you are making it a priority and taking your kid to the doctor and following good nutrition then I think it will be an acceptable weight, unless there is a medical problem but they should be able to figure out if it's a medical problem.

7.14 Gp12P2 (Father)<sup>\*\*\*</sup>: There are some genetic factors. In terms of parents directing nutrition and activity, they have probably 95% control.

##### **Theme 8: The parents of obese children are blamed by themselves and by others**

8.1 Gp042 (Mother)<sup>\*</sup>: Honestly, when I see kids that are incredibly overweight I think it's child abuse, it really upsets me.

8.3 GP10G4 (Stepmother of the father)<sup>\*\*</sup>: They [obese children] are trying to get some safety net through food because they are neglected by their parents or grandparents.

8.7 Gp13P1 (Mother)<sup>\*\*\*</sup>: you see these kids that can barely move, and it's like how do you not be judgmental about that, because you look at the parent, and they look like a miniature of their parent.

8.9 Gp11G1 (Mother's mother)<sup>\*\*\*</sup>: if I were to see my child gaining weight and being lethargic and had no interest... [I'd] say, okay, I've messed up and I've got to fix this now... because I wouldn't want them to spend the rest of their life having to be on *The Biggest Loser* or something at 400 pounds because I was too lazy.

<sup>\*</sup>=parent/grandparent of child with normal weight.

<sup>\*\*</sup>=parent/grandparent of child with overweight.

<sup>\*\*\*</sup>=parent/grandparent of child with obesity.

Gp#—family group number; P—parent; G—grandparent.

neglect or abuse. Participants identified childhood obesity as being transmitted from one generation to the next, and as the result of 'lazy' parenting. Having an obese child was an outward sign of 'failing' as a parent, and one mother whose child was obese spoke of feeling blamed by clinicians for the child's weight gain, which, as she said, neither she nor the child's clinicians could explain.

#### Perceptions of appropriate contexts for speaking about preschoolers' body weights

The participants described discussions of preschoolers' body weights as sensitive, often unnecessary, and potentially dangerous (box 5). The decision to engage in discussion about children's body weights was context dependent. Participants said they discussed their children's or grandchildren's body weights with them only if

#### Box 5 Examples of participants' quotes on perceptions of appropriate contexts for speaking about preschoolers' body weights

##### **Theme 9: Parents and grandparents discuss preschoolers' body weights with them only when the children raise the topic**

9.1 Gp01G1 (Mother's mother)<sup>\*\*\*</sup>: And with [the child], she steps on the scale and she knows she weighs more than her brother but we've never, I've always told her, "Look at me, I'm fat, you're not fat".

9.2 Gp03P1 (Mother)<sup>\*\*\*</sup>: I have never talked to him about being heavy, but like, a few weeks ago he talked about being fat, and I don't know where he got that from, like another kid, or if he saw it on TV, I have no idea. But he is kind of aware of it, but only on kind of a surface level.

9.3 Gp13G1 (Mother's mother)<sup>\*\*\*</sup>: He knows that he's taller than most. Probably more than anything, he's probably tired of hearing that he's bigger, [he says,] "It's not my fault I'm bigger, I'm still only five years old".

##### **Theme 10: It's acceptable to discuss how big or strong preschoolers are**

10.2 Gp12G3 (Father's mother)<sup>\*\*\*</sup>: We talk about how fit he is. He's a very fit child.

10.3 Gp13P1 (Mother)<sup>\*\*\*</sup>: His body shape is very athletic, so we go, "Yeah, look at his muscles".

10.9 Gp16P1 (Father)<sup>\*\*</sup>: Oh we always talk about how big they are and they are always showing their muscles and stuff like that. We encourage them to eat their veggies so then they can get big muscles and then they want to show off their muscles.

##### **Theme 11: Discussing preschoolers' body weights can affect their self-esteem negatively**

11.2 Gp03P2 (Father)<sup>\*\*\*</sup>: By far I don't think that parents should focus on it [weight] because then it will become a focal point for the child.

11.3 Gp01G1 (Father's mother)<sup>\*\*\*</sup>: I wouldn't sit with an iron fist and say, "You can't have that because it will make you fat." Because that affects their mental (well-being).

11.6 Gp14G1 (Mother's mother)<sup>\*\*</sup>: I think it's dangerous to make a child conscious of their weight in some ways. Especially when it's just a healthy thing. I think it's best to not say anything.

11.7 Gp02G1 (Father's mother)<sup>\*</sup>: I probably wouldn't want to talk about her weight too much because I do think that girls get set up in this world to worry a lot about that and that it could lead to some problems.

##### **Theme 12: Parents and grandparents do not discuss preschoolers' body weights with each other, unless there is a perceived problem**

12.1 Gp10G1 (Father's mother)<sup>\*\*</sup>: I think she [the child's mother] over worries [about] that a bit, personally, but I don't know because I haven't asked her.

12.7 Gp01G1 (Father's mother)<sup>\*\*\*</sup>: I haven't yet [discussed the child's weight]. They [the parents]—I am not sure they consider it an issue yet.

12.8 Gp03P1 (Mother)<sup>\*\*\*</sup>: I always tell them like, "Please don't encourage this, or that because I don't want him eating it if that's ok". That sort of thing. So we have talked about it.

12.9 Gp03G1 (Mother's mother)<sup>\*\*\*</sup>: with [my daughter], I've talked about it [the child's weight]. (Interviewer: Not with [her husband]?) Um, [my daughter] and I have a closer, more intimate [connection], like [we can] talk about that kind of thing.

<sup>\*</sup>=parent/grandparent of child with normal weight.

<sup>\*\*</sup>=parent/grandparent of child with overweight.

<sup>\*\*\*</sup>=parent/grandparent of child with obesity.

Gp#—family group number; P—parent; G—grandparent.

the children themselves raised the topic. Those participants whose preschoolers did not mention body weight said they had never discussed the issue with them. Several participants said that children of preschool age do not have body image concepts related to weight. Some participants cited their preschoolers' 'apparent 'comfort' with—or lack of self-consciousness about—their bodies as signalling a lack of concern with body image. A number of participants also said they avoided discussions of their preschoolers' body weights because these discussions could be harmful to the children's self-esteem and emotional well-being.

Notably all parents, with the exception of two, avoided discussing their children's body weights not only with the children themselves, but also with the children's grandparents; likewise, excepting one grandmother, all grandparents avoided discussing their grandchildren's body weights with the parents. Participants described these discussions as unnecessary when body weight was 'not an issue'. It was only when a child's body weight was perceived as problematic (in the case of the largest child in the sample) that parents and grandparents said they openly discussed it with each other. However, while most participants said they did not discuss body weights, they identified comments on children's 'healthy' appearance, growth or muscle definition as appropriate and positive. Thus, although participants were reluctant to discuss the preschoolers' body weights, they did discuss the preschoolers' body sizes, with attention to how 'big' or 'strong' they were.

## DISCUSSION

This study's findings suggest that the parents and grandparents of preschool age children face difficulties in identifying and discussing their preschoolers' overweight and obesity. Previous research has found that low-income mothers are not concerned about preschoolers' overweight because they attribute body weight to genetic heredity.<sup>9</sup> However, in this study, the participants strongly endorsed the idea that parents bear primary responsibility for their children's eating and exercise habits and body weights. Nevertheless, the participants did not speak of their own children or grandchildren as overweight or obese. Notably, the participants' responses were consistent across the sample, and no generational differences were observed between the parents' and the grandparents' perceptions of their preschoolers' body sizes.

Although the participants recognised obesity in general as a problem, they normalised their own children's and grandchildren's excess body weight as 'toddler pudgy' or 'cute baby fat'. Like Jain *et al.*,<sup>9</sup> the authors of the present study suggest that most participants used these words not as euphemisms, as underscored by the participants' consistent descriptions of children's higher body weights in positive terms—as 'cute' or 'healthy'. While participants said that

preschoolers' body weights would be problematic if the child became 'visibly overweight', it was less clear how a 'visibly overweight' preschooler might look. The participants' discussions focused, instead, on signs that might negate 'visible overweight' in a preschooler, including tallness, muscularity and physical strength. As noted by Jones *et al.*,<sup>11</sup> when participants described obesity, it was through extreme cases of morbid obesity in later childhood or adulthood, with some citing examples of older children who were 'miniatures of their parents' and contestants on *The Biggest Loser* who weighed 400 lbs. Future research should explore how a 'visibly overweight' preschooler might look to parents and grandparents.

Just as the participants visualised obesity through images of older children or adults, they also spoke of obesity as a problem that might affect children later in life, but not in preschool age. Participants spoke of suffering from teasing as a school age child, or from poor health as an adult, as the consequences that marked obesity as a problem. While participants did say that they would recognise a body weight problem if their preschoolers showed negative changes in behaviour, activity, and mood, they did not name immediate health risks. The participants' depictions of obesity revealed a disconnect between knowledge and perception, previously shown by Rich *et al.*<sup>10</sup> Although they were aware of their preschoolers' growth chart percentiles, most participants did not link these percentiles with the categories of 'overweight' and 'obesity'. Likewise, although participants were aware of the health risks associated with obesity in adulthood, they did not link their preschoolers' body weights with potential problems in the present tense.

While the participants did not associate obesity with early childhood, they did take responsibility for their preschoolers' body weights, and endorsed healthy eating and exercise practices. Along similar lines, however, the participants—including some whose children were classified as obese—blamed parents for childhood obesity. The participants' expressions of judgment toward the parents of obese children were aligned with broader social stigma attached to obesity.<sup>29,30</sup> Given the participants' stigmatising attitudes, it is not surprising that they did not discuss their preschoolers' body weights with other family members. Although parents and grandparents did discuss children's body sizes through comments on how 'big', 'strong', 'healthy', or 'muscular' they were, most participants whose preschoolers were classified as overweight or obese did not discuss their body weights with family members, except when there was a perceived health problem. It is possible that, for the participants, discussion of body weight threatened to expose themselves and their children to the risk of blame, reduced self-esteem and stigma attached to obesity. At the same time, it is important to note that, in deciding not to discuss body weight with their preschoolers (unless the children themselves raised the topic), the participants protected the children's body image and self-esteem.

Moreover, like the parents described by Andreassen *et al*,<sup>31</sup> those parents who recognised their children needed to lose weight attempted to enact weight loss strategies without explicitly mentioning weight. As previous studies have shown, parental comments about body weight are associated with body dissatisfaction and reduced self-esteem in children,<sup>15 32 33</sup> such that the participants' stance on avoiding 'weight talk' with children was positive. In cases where children are enrolled in clinical treatment programmes for obesity management, however, it is important that clinicians, parents and grandparents identify sensitive and supportive ways of framing the topic of body weight. A recent study has proposed a set of guidelines to help parents discuss body image and eating with preschool-aged children in a supportive way that is protective of children's self-esteem.<sup>16</sup>

The results of this study suggest that there are important gaps between clinical definitions and lay perceptions of childhood obesity. While parents and grandparents are aware of their preschoolers' growth chart percentiles, these measures do not translate into recognition of young children's overweight or obesity. Without visual examples of how a preschool age child with overweight or obesity might look, such as sketched silhouettes or photographs at different weight categories,<sup>34–36</sup> parents and grandparents continue to speak of children's excess weight as 'cute' or 'healthy', and perceive obesity as problematic only in later childhood or adulthood. Moreover, as parents and grandparents find it difficult to discuss young children's body weights with the children and with one another, this might affect the success of clinical interventions for childhood obesity, in which children's caretakers are forced into a new and uncomfortable discussion.

The clinical implications of this study include several components. In discussions with parents and grandparents of preschool age children, clinicians should clarify how children's fat distribution and body sizes typically change with age. Clinicians should also speak with children's caretakers about the meaning of growth chart percentiles, and provide visual examples of how children might look in each of the percentile categories. Moreover, clinicians should emphasise the immediate problems associated with obesity in early childhood, such as hypertension (present in more than 50% of children with obesity), dyslipidaemia, motor skill development and orthopaedic complications.<sup>37–39</sup>

The results also suggest that the countering of stigma should be an important part of the clinical management of childhood obesity. Given the social stigma and blame attached to parents of children with obesity, parents might contest a child's obesity diagnosis and be reluctant to take part in interventions to manage their child's condition.<sup>40</sup> It is therefore crucial that clinicians directly address stigma when they speak to parents, emphasising that childhood obesity is not the parents' fault, and that managing this condition together is a positive step.

Similarly, clinicians should avoid addressing parents of children with obesity in ways that might make them feel guilty or judged. Finally, it is important that clinicians frame discussions of children's body weights sensitively, and encourage parents and grandparents to address children's eating and physical activity practices through positive words and actions, without emphasising body weight to the children themselves.

This study had some limitations. While the sample was the largest ever reported in a qualitative investigation of parents' and grandparents' perceptions and attitudes concerning preschoolers' body weights, the families were mainly of Caucasian origin, representing the ethnic distribution of the population in Eugene and Springfield, Oregon. Thus, the influence of cultural background on perceptions of children's body sizes, which several studies have identified as important<sup>4 6 7</sup> could not be investigated. As the study targeted families of low socioeconomic status, further research is needed to determine whether the results can be generalised to other populations. Additionally, as several participants were single mothers, the number of fathers was not high enough to enable an assessment of differences between fathers' and mothers' perceptions and attitudes. Finally, while a number of families had a full or nearly-full set of grandparents participating, some had only one or two grandparents participating, due to circumstances such as the other grandparents' living outside the area.

## CONCLUSION

This study was the first to focus on parents' and grandparents' perceptions of preschoolers' body weights, and is the largest qualitative study to date to include a mixed familial sample of adult caretakers of preschool age children, with subsamples of parents and grandparents that meet data saturation standards.<sup>24</sup> The study's results demonstrate that while parents and grandparents recognise childhood obesity as problematic, endorse healthy eating and exercise habits, and take responsibility for children's body weights, they find it difficult to recognise and discuss young children's overweight and obesity. The results suggest that clinicians should clearly communicate with parents and grandparents about the meaning and appearance of obesity in early childhood, as well as counteract the social stigma attached to obesity, in order to improve the effectiveness of family-based interventions to manage obesity in early childhood.

### Author affiliations

<sup>1</sup>Unit for Biocultural Variation and Obesity, Institute of Social and Cultural Anthropology, University of Oxford, Oxford, UK

<sup>2</sup>Department of Psychology, University of Oregon, Eugene, USA

<sup>3</sup>Unit of Pediatrics, Department of Clinical Science, Intervention and Technology, Karolinska Institutet, Stockholm, Sweden

**Acknowledgements** The authors thank all the participating families, as well as Elisha Prichard, Jessica Farmer, Kelly Underwood, Bryn Shepherd and Waihan Leung, the University of Oregon students who transcribed the interviews.



**Contributors** KE coded the interviews and analysed them together with PN, wrote the manuscript, and approved the final manuscript as submitted. KH coordinated the data collection, critically reviewed the manuscript and approved the final manuscript as submitted. PAF contributed to the design of the study, critically reviewed the manuscript and approved the final manuscript as submitted. PN conceptualised and designed the study, coordinated and supervised data collection and analysis, coded the interviews and analysed them together with KE, critically reviewed the manuscript and approved the final manuscript as submitted.

**Funding** This work was supported by grants to PN from the Sweden-America Foundation, the Oregon Social Learning Center and the Marie Curie VINNMER International Qualification (2011-03443).

**Competing interests** None.

**Ethics approval** The study was approved by the Internal Review Board of the Oregon Social Learning Center.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data sharing statement** Online supplementary table S1–S4 containing complete sets of pertinent participant quotes. No additional data available.

**Open Access** This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

## REFERENCES

- Waters E, de Silva-Sanigorski A, Hall BJ, *et al.* Interventions for preventing obesity in children. *Cochrane Database Syst Rev* 2011;12:CD001871.
- Reinehr T, Kleber M, Lass N, *et al.* Body mass index patterns over 5 y in obese children motivated to participate in a 1-y lifestyle intervention: age as a predictor of long-term success. *Am J Clin Nutr* 2010;91:1165–71.
- Danielsson P, Svensson V, Kowalski J, *et al.* Importance of age for 3-year continuous behavioral obesity treatment success and dropout rate. *Obes Facts* 2012;5:34–44.
- Doolen J, Alpert PT, Miller SK. Parental disconnect between perceived and actual weight status of children: a metasynthesis of the current research. *J Am Acad Nurse Pract* 2009;21:160–6.
- Parry LL, Netuveli G, Parry J, *et al.* A systematic review of parental perception of overweight status in children. *J Ambul Care Manage* 2008;31:253–68.
- Towns N, D'Auria J. Parental perceptions of their child's overweight: an integrative review of the literature. *J Pediatr Nurs* 2009;24:115–30.
- Regber S, Novak M, Eiben G, *et al.* Parental perceptions of and concerns about child's body weight in eight European countries—the IDEFICS study. *Pediatr Obes* 2013;8:118–29.
- Lundahl A, Kidwell KM, Nelson TD. Parental underestimates of child weight: a meta-analysis. *Pediatrics* 2014;133:e689–703.
- Jain A, Sherman SN, Chamberlin LA, *et al.* Why don't low-income mothers worry about their preschoolers being overweight? *Pediatrics* 2001;107:1138–46.
- Rich SS, DiMarco NM, Huettig C, *et al.* Perceptions of health status and play activities in parents of overweight Hispanic toddlers and preschoolers. *Fam Community Health* 2005;28:130–41.
- Jones AR, Parkinson KN, Drewett RF, *et al.* Parental perceptions of weight status in children: the Gateshead Millennium Study. *Int J Obes (Lond)* 2011;35:953–62.
- Pocock M, Trivedi D, Wills W, *et al.* Parental perceptions regarding healthy behaviours for preventing overweight and obesity in young children: a systematic review of qualitative studies. *Obes Rev* 2009;11:338–53.
- Oude Luttikhuis H, Baur L, Jansen H, *et al.* Interventions for treating obesity in children. *Cochrane Database Syst Rev* 2009;(1):CD001872.
- Hoelscher DM, Kirk S, Ritchie L, *et al.* Position of the Academy of Nutrition and Dietetics: interventions for the prevention and treatment of pediatric overweight and obesity. *J Acad Nutr Diet* 2013;113:1375–94.
- Smolak L, Levine MP, Schermer F. Parental input and weight concerns among elementary school children. *Int J Eat Disord* 1999;25:263–71.
- Hart LM, Damiano SR, Chittleborough P, *et al.* Parenting to prevent body dissatisfaction and unhealthy eating patterns in preschool children: a Delphi consensus study. *Body Image* 2014;11:418–25.
- Langnase K, Mast M, Danielzik S, *et al.* Socioeconomic gradients in body weight of German children reverse direction between the ages of 2 and 6 years. *J Nutr* 2003;133:789–6.
- Pan L, May AL, Wethington H, *et al.* Incidence of obesity among young U.S. children living in low-income families, 2008–2011. *Pediatrics* 2013;132:1006–13.
- Bouthoorn SH, Wijtzes AI, Jaddoe VW, *et al.* Development of socioeconomic inequalities in obesity among Dutch pre-school and school-aged children. *Obesity (Silver Spring)* 2014; 22:2230–7.
- Summerbell CD, Ashton V, Campbell KJ, *et al.* Interventions for treating obesity in children. *Cochrane Database Syst Rev* 2003;(3):CD001872.
- Brannon EE, Kuhl ES, Boles RE, *et al.* Strategies for recruitment and retention of families from low-income, ethnic minority backgrounds in a longitudinal study of caregiver feeding and child weight. *Child Health Care* 2013;42:198–213.
- Starks H, Trinidad SB. Choose your method: a comparison of phenomenology, discourse analysis, and grounded theory. *Qual Health Res* 2007;17:1372–80.
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
- Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field Methods* 2006;18:59–82.
- Report of a WHO consultation. *Obesity: preventing and managing the global epidemic. World Health Organ Tech Rep Ser*, 2000:1–253.
- Kuczmariski RJ, Ogden CL, Grummer-Strawn LM, *et al.* CDC growth charts: United States. *Adv Data* 2000(314):1–27.
- Kuczmariski RJ, Ogden CL, Guo SS, *et al.* 2000 CDC growth charts for the United States: methods and development. *Vital Health Stat* 11 2002(246):1–190.
- Krebs NF, Himes JH, Jacobson D, *et al.* Assessment of child and adolescent overweight and obesity. *Pediatrics* 2007;120(Suppl 4): S193–228.
- Puhl RM, Latner JD. Stigma, obesity, and the health of the nation's children. *Psychol Bull* 2007;133:557–80.
- Puhl RM, Heuer CA. The stigma of obesity: a review and update. *Obesity (Silver Spring)* 2009;17:941–64.
- Andreasen P, Gron L, Roessler KK. Hiding the plot: parents' moral dilemmas and strategies when helping their overweight children lose weight. *Qual Health Res* 2013;23:1333–43.
- Davison KK, Birch LL. Weight status, parent reaction, and self-concept in five-year-old girls. *Pediatrics* 2001;107:46–53.
- Neumark-Sztainer D, Bauer KW, Friend S, *et al.* Family weight talk and dieting: how much do they matter for body dissatisfaction and disordered eating behaviors in adolescent girls? *J Adolesc Health* 2010;47:270–6.
- Eckstein KC, Mikhail LM, Ariza AJ, *et al.* Parents' perceptions of their child's weight and health. *Pediatrics* 2006;117:681–90.
- Warschburger P, Kroll K. Maternal perception of weight status and health risks associated with obesity in children. *Pediatrics* 2009;124:e60–8.
- Parkinson KN, Drewett RF, Jones AR, *et al.* Mothers' judgements about their child's weight: distinguishing facts from values. *Child Care Health Dev* 2013;39:722–7.
- Nielsen TR, Gamborg M, Fonvig CE, *et al.* Changes in lipidemia during chronic care treatment of childhood obesity. *Child Obes* 2012;8:533–41.
- O'Malley G, Hussey J, Roche E. A pilot study to profile the lower limb musculoskeletal health in children with obesity. *Pediatr Phys Ther* 2012;24:292–8.
- Maggio AB, Aggoun Y, Marchand LM, *et al.* Associations among obesity, blood pressure, and left ventricular mass. *J Pediatr* 2008;152:489–3.
- Puhl RM, Heuer CA. Obesity stigma: important considerations for public health. *Am J Public Health* 2010;100:1019–28.