Embedding weight-related messages within a general parenting programme: development and feasibility evaluation of Parents and Tots Together

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Embedding weight-related messages within a general parenting programme: development and feasibility evaluation of Parents and Tots Together

Jess Haines*a, Angela M. Mayorga*b, Julia McDonald*c, Ashley O’Brien*c, Deborah Gross*e, Elsie M. Taveras*c, Alexandra Epee-Bounya*d and Matthew W. Gillman*c

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In this article, we describe the development and feasibility evaluation of Parents and Tots Together (PTT), a family-based obesity prevention intervention that embeds weight-related messages within a general parenting programme. To inform the development of PTT, we conducted 5 focus groups with 19 racially/ethnically diverse parents to examine parents’ key concerns and usual practices related to child-rearing and children’s weight-related behaviours. Results from the focus groups showed that issues related to general parenting (e.g. discipline) were of primary concern to parents, suggesting that combining weight-related messages with general parenting support may be an effective strategy to engage parents of preschool-aged children. To determine the feasibility of PTT, we conducted a pilot study with 16 racially/ethnically diverse parents. The programme was well received by parents; 69% of the parents attended six or more of the nine sessions and 80% reported that they were ‘very satisfied’ with the programme.

Keywords: parenting; obesity prevention; preschool children; intervention

Introduction

In the USA, 21% of children in the age group of two to five years are overweight (body mass index [BMI] in the 85th to 94th percentile for age and gender) and an additional 10% are obese (BMI ≥ 95th percentile) (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Obesity in young children is associated with later obesity and with conditions such as hyperlipidaemia, hypertension, and type II diabetes (Freedman, Khan, Dietz, Srinivasan, & Berenson, 2001). Racial/ethnic minority children and those living in low-income households bear a disproportionate share of the burden of overweight and its related co-morbidities (Ogden et al., 2010), making development of effective intervention strategies for these high-risk populations particularly urgent.
Extensive empirical evidence shows that parents have a primary influence on their child’s weight-related behaviours, and hence their child’s obesity risk. Parents influence their children’s obesity risk through parental-feeding behaviours (Anzman, Rollins, & Birch, 2010; Faith, Scanlon, Birch, Francis, & Sherry, 2004), modelling of weight-related behaviours (Lindsay, Sussner, Kim, & Gortmaker, 2006; Savage, Fisher, & Birch, 2007), and the provision of a home environment that facilitates healthful eating and activity behaviours (Lindsay et al., 2006; Savage et al., 2007). General parenting behaviours, that is, behaviours that are not specific to weight-related behaviours, may also influence children’s obesity risk. Research shows that children of parents who use an authoritarian style of discipline, characterised by low responsiveness and high demands, or a permissive style, characterised by high responsiveness and low demands, are at an increased risk for obesity as compared to children whose parents have high demands of their children and are responsive to their needs (Rhee, Lumeng, Appugliese, Kaciroti, & Bradley, 2006; Wake, Nicholson, Hardy, & Smith, 2007).

Although parents’ influence on children’s weight and related behaviours has been well established, research on family-based obesity prevention interventions is limited, as noted in three recent reviews of obesity prevention interventions among young children (Bluford, Sherry, & Scanlon, 2007; Campbell & Hesketh, 2007; Skouteris et al., 2011). In this article, we describe the development and feasibility evaluation of Parents and Tots Together (PTT), a family-based obesity prevention intervention.

An important first step to engaging parents in an obesity prevention intervention is understanding parents’ key concerns regarding their children as well as their usual practices related to their child’s health behaviours. Thus, in the first section of this article, we describe our formative assessment, which involved focus group interviews with racially/ethnically diverse parents of preschool-aged children. Previous formative research has focused solely on parents’ perceptions of children’s weight and related behaviours rather than general parenting skills that may also relate to children’s weight status (Dwyer, Higgs, Hardy, & Baur, 2008; Granich, Rosenberg, Knuiman, & Timperio, 2010; Hackie & Bowles, 2007; He, Irwin, Sangster Bouck, Tucker, & Pollett, 2005). However, results from a survey with 138 parents of preschool-aged children suggest that parents may have a greater interest in learning about general parenting topics, including child development and behaviour management, than their children’s weight-related behaviours (Gupta, Shuman, Taveras, Kulldorff, & Finkelstein, 2005). Building on this finding, the objective for our formative assessment was to identify parents’ key concerns regarding child-rearing broadly, as well as concerns regarding their children’s weight-related behaviours, that is, television viewing, physical activity, dietary intake, and sleep.

In the second section of this article, we describe the methods and results of our feasibility trial of the PTT intervention. There is strong evidence that group-based parenting programmes can improve parenting practices and child behaviours (Gross et al., 2009; Webster-Stratton, Reid, & Hammond, 2001). In addition, there is some evidence that parents may prefer group-based parent training over one-on-one counselling (Cunningham, Bremner, & Boyle, 1995). To develop PTT, we embedded strategies to improve children’s weight-related behaviours within an empirically tested, group-based general skills parenting programme. Most group-based parent programmes provide childcare to reduce barriers to parent participation, but they do not engage the children in specific activities. Our research with parents of school-aged children suggests that parents are more likely to participate in programmes that their children are excited about or
engaged in as compared to programmes targeted solely at parents (Haines, Neumark-Sztainer, Perry, Hannan, & Levine, 2006). Therefore, we developed an interactive children’s programme to run concurrently to our parent programme, with the goal of improving parent participation and satisfaction with the programme. The overall objective of this study was to assess the feasibility and acceptability of the PTT intervention among a racially/ethnically diverse sample of parents with preschool-aged children.

Formative assessment with parents of preschool-aged children

Methods for formative assessment

Study design and participants
From February to March 2009, we conducted five focus groups with parents of children aged two to five years. We recruited participants from two Community Health Centers in Boston, MA, USA. Both Health Centers were located in urban settings and served ethnically diverse and primarily low-income families. To be eligible for participation, participants had to be a parent of a child aged two to five years and able to speak English or Spanish. We recruited 19 participants, all mothers: 14 were Latina and 5 were African-American. Mothers had 1–4 children, with a mean of 2. The Harvard Pilgrim Health Care Human Subject Committee reviewed and approved study protocols for both the formative assessment and feasibility trial. Participants for both studies provided written consent to participate.

Data collection
We designed our moderator’s guide for the focus groups with the goals of understanding parents’ key concerns regarding child-rearing broadly, as well as concerns regarding their children’s television viewing, physical activity, dietary intake, and sleep behaviours. Our moderator’s guide was reviewed by three experts in qualitative research and two mental health specialists at one of the Health Centers to ensure it was clear and culturally appropriate for our target population.

We conducted five focus groups. Three focus groups were in Spanish and comprised 14 Latina mothers: one group with six participants, and two groups with four participants each. Two focus groups were in English and comprised five African-American mothers: one group with two participants and one group with three participants.

Focus group sessions were held at the Health Centers. Moderators who were fluent in the group’s language and trained in qualitative data collection led the focus groups, which lasted from 45 minutes to one hour. Participants were provided dinner, a $20 grocery store gift card, $10 for travel costs, and childcare. We audio-taped the focus groups and the research assistant took detailed notes. Audio tapes were transcribed and those from the Spanish focus groups were translated by a professional translation service.

Data analysis
Three members of the research team (J.H., A.M., and J.M.) individually reviewed the transcripts and held meetings to develop and clarify a set of thematic codes that incorporated participants’ discussions. We organised all transcripts for analysis through Microsoft Excel tables (La Pelle, 2004). Two members of the research team
(A.M. and J.M.) assigned one or more thematic codes to participants’ comments. The two coders independently coded the transcript from one focus group. The research team then reconvened to evaluate concordance with the coding and discuss any discordance in order to reach consensus. When we had confidently developed our understanding of all themes, the two coders independently completed coding for each of the remaining focus group transcripts. For the few comments the coders did not reach consensus, a third investigator (J.H.) provided the final thematic code or codes.

After we assigned one or more codes to participants’ comments, the research team continued with several re-readings and prolonged immersion into the data (Borkan, 1999). This process allowed us to further develop emergent themes and subthemes as well as to identify themes we had originally overlooked.

Results from formative assessment

We identified six principal themes in our analysis. Five of these themes were predetermined based on our moderator’s guide: general parenting, healthful eating, television viewing, physical activity, and sleep. The one emergent theme was adult life challenges. We summarise these themes in the following sections. Overall, our findings were similar across focus groups. We have identified the few findings that were unique to the Spanish-speaking focus groups in the following sections.

General parenting

In response to broad questions on child-rearing (e.g. ‘As a parent, what types of things would you like to learn more about?’), the majority of mothers across all focus groups discussed issues related to disciplining their children. Mothers expressed a lack of confidence on how to appropriately discipline without being too lenient or too strict: ‘Am I allowing him to do too much? Or am I yelling too much? I don’t know’. Mothers also identified a desire to learn strategies for disciplining their children: ‘I want to learn how to discipline them in a way that I feel like I can do it well’. Mothers in one of the Spanish-speaking focus groups discussed cultural differences regarding discipline of young children between their country of origin and the USA. Mothers discussed how parents in the USA tend to be stricter with their young children, and that they felt pressured by other parents to conform to these new norms. As one Spanish-speaking mother explained:

Here in the United States they say two years old is the “terrible twos”. But in the countries we’re from, this term doesn’t exist. I believe that they are a bit curious and want to touch everything and [here] you have to say that they can’t.

Many mothers identified challenges in communicating with their young children. Mothers talked about how their young children often would not talk or ‘open up’ to them and that they were interested in learning about how to communicate and relate to their young children: ‘How to get your kids to be more open with you, especially at an age like that. You want them to start young and be more open’.

Healthful eating

Mothers across all focus groups expressed concern about their children’s eating behaviours. Most were concerned with their children’s picky eating, describing it as a barrier
to healthful eating: ‘My two kids have problems eating – most of all the boy. If he sees an onion, he doesn’t eat the food. And so I have tried to get over this, but he’s making it impossible’. Mothers also talked about trying to limit their children’s intake of ‘junk foods’, described by most mothers as high-sugar foods. A few mothers discussed their concerns about limiting junk foods in relation to health outcomes, including obesity, diabetes, and oral health.

Many mothers identified that as parents they were the primary influence on their children’s eating behaviours: ‘There are obese children because of their parents. We are the parents and the ones who control them and if we don’t set limits, that is it, they’ll eat this whole plate of food’. Mothers across all focus groups discussed how the eating behaviours that they modelled influenced their children’s eating behaviours: ‘If I drank water, they would drink water … So, I’m the one that contributes to them drinking a lot of the stuff that they do drink.’

Mothers discussed the various strategies they use to influence their children’s eating behaviours. Mothers discussed pressuring their children to eat as a way to increase their children’s intake of healthful foods:

He’s like, “I’m done.” I’m looking at his plate like, “No, you’re not.” He ate the rice, he ate the meat, and a couple spoonfuls of string beans. I said, “We’re going to sit at the table and you’re going to eat those”.

A few mothers also talked about strategies to reduce their children’s intake of high-sugar or high-fat foods, such as limiting intake of juice or diluting juice with water and not bringing junk foods, such as cookies or ice cream, into the home.

Television viewing

The majority of mothers identified that their children typically watch two or more hours of television per day. Some mothers expressed some concern about their children watching ‘too much’ television; key concerns included the impact television may have on eyesight and brain development as well as how television could adversely affect children’s behaviour: ‘Because there are things on TV that you don’t want your child to pick up and the TV can send your child the wrong messages … So I try definitely to set limitations’. Mothers did not express concern about how television viewing may influence children’s risk for excessive weight gain or obesity. A few mothers mentioned using television as a tool for teaching English and/or Spanish language skills.

Mothers identified a number of strategies they have used to reduce their children’s television viewing. The most common strategy was to find an alternative activity to engage their children: ‘You could set bath time and that time that they would usually watch TV’. Many mothers discussed that adverse weather conditions, particularly in the winter months, were a key barrier to reducing their children’s television viewing.

Physical activity

Overall, physical activity was identified by mothers as important for their children’s overall health: ‘When children are busy, either doing sports or music, their mood and behaviour change. They’re engaged and entertained’. No specific mention was made regarding the impact physical activity may have on children’s weight status or obesity risk.
Numerous mothers talked about wanting to put their young children into organised physical activity programmes, such as sports programmes or dance class, but the high costs of the programmes or the programmes’ focus on older children limited their ability to do so. Mothers identified that providing parents with a list of free or low-cost programmes in their community could help parents increase their children’s physical activity.

Sleep

Many mothers identified that their children sleep eight hours or less per night. Getting their children to fall and stay asleep in their own bed was identified as a challenge by many mothers. Mothers identified that using or ‘sticking to’ a bedtime routine was a useful strategy to facilitating children falling and staying asleep.

Adult life challenges

Through their discussion of general parenting issues and weight-related behaviours, mothers indentified three adult life challenges that influence their parenting roles: competing demands, stress, and inconsistencies with other caregivers. Mothers across all focus groups discussed how their multiple, competing demands limit the amount of time they have to spend with their children as well as the time they have to allot for ‘themselves.’ A number of mothers also identified how their busy schedule can worsen their children’s weight-related behaviours: ‘I could put them to bed earlier, but my schedule doesn’t allow it’.

Mothers talked about ‘being stressed’ and their challenges in dealing with stress. Some mothers discussed their stress as a general stress, such as ‘going through a rough time’, whereas others described stress specific to parenting their young children: ‘My children are like this [picky eaters] too. I feel hopeless and it stresses me out’. A few mothers identified that they wanted to learn more about how to manage their stress: ‘[it] would be a good thing for parents to learn how to deal with their stress knowing that they have … their kids around … Sometimes us parents, we will take the stress out on our kids’.

Mothers identified inconsistencies between their child-rearing practices and those of other caregivers or family members as key challenges in their role as parents: ‘My mother slept with my older son. And I had problems with him when he would go to sleep because he didn’t want to sleep alone … And I, oh my god, what my mother had done to me now’. Mothers discussed how these inconsistencies between caregivers were confusing for their children: ‘If you set a rule, but your husband doesn’t agree with it turns out badly. The child gets confused trying to figure out who is right, mommy or daddy’.

Key lessons from formative assessment

The findings from our formative assessment provide a number of key implications for the development of our family-based obesity prevention intervention (Table 1). First, we learned that among this racially/ethnically diverse sample of mothers of young children, issues related to general parenting, particularly discipline and communicating with children, were of primary concern. Similar results were found in a qualitative study by McGarvey et al. (2006), which was designed to explore low-income
parents’ perceptions regarding child-feeding practices, but found that parents requested resources on general parenting, not just nutrition information. To capitalise on parents’ enthusiasm for general parenting education, we developed our family-based obesity prevention intervention by embedding strategies to improve weight-related behaviours within an existing general skills parenting programme.

Second, we learned that although mothers were concerned about the weight-related behaviours that we had explored, weight-related outcomes (e.g. excessive weight gain, obesity) did not appear to be a key motivator for parents to nurture healthful behaviours among their children. Instead, the impact these behaviours may have on their children’s mood, behaviour, or development was of greater concern to mothers. Studies have shown that while parents of preschool-aged children often fail to recognise that their child is overweight or obese (Baughcum, Chamberlin, Deeks, Powers, & Whitaker, 2000; Hackie & Bowles, 2007), the majority of parents believe that children should be physically active and engage in healthful eating behaviours (Dwyer et al., 2008; Granich et al., 2010; He et al., 2005). To ensure that our messages for promoting healthful weight-related behaviours are relevant and motivating for parents of preschool-aged children, we designed our intervention messages to focus on the behavioural and developmental, as well as the health-related, impacts of these behaviours.

Third, we learned a number of strategies that mothers either used or would recommend to help parents nurture healthful weight-related behaviours among their children. Many of these strategies, including using a routine at bedtime (Mindell, Kuhn, Lewin, Meltzer, & Sadeh, 2006), increasing access to low or no cost physical activities (Dowda et al., 2011), modelling healthful behaviours (Savage et al., 2007), and creating a home food environment that supports healthful eating (Savage et al., 2007), have shown to be associated with healthful eating and activity behaviours. Mothers across all focus groups talked about using controlling feeding practices, such as forcing or pressuring their child to eat, to increase their children’s intake of healthful foods. Although well intentioned, research suggests that such practices can actually decrease children’s preference for and intake of healthful foods (Gregory, Paxton, & Brozovic, 2011). As a result of our findings, we developed our intervention

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Table 1. Key implications for development of PTT, a family-based obesity prevention intervention.

| Address general parenting issues, such as discipline and developmentally appropriate communication |
| Create persuasive messages that will elicit buy-in from parents by designing intervention messages about healthful eating, activity and sleep that have relevance for parents, such as behavioural, academic and health-related impacts of these behaviours |
| Educate parents about recommended feeding practices to promote healthful eating among young children |
| Help parents create a bedtime routine for their children |
| Provide parents with ideas for low- or no-cost physical activities they can do with their children. |
| Include specific activities that can be done during inclement weather |
| Identify non-screen, home-based activities that will keep children occupied, e.g. books on CD, crafts, or colour/activity books |
| Include life skills training focused on stress management and communication/problem-solving skills |

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to include information about recommended feeding practices, specifically teaching parents to read and respond to their children’s hunger and satiety cues, as well as information to support parents in implementing evidence-based strategies to encourage healthful sleep and activity behaviours among their children.

Lastly, we learned that, as shown in other studies (Sidebotham & ALSPAC Study Team, 2001), mothers of young children experience high levels of stress and time pressures. We also learned that mothers struggle with conflicts about child-rearing with other caregivers. In response to these findings, we have designed our intervention to address stress management techniques as well as problem solving and communication skills to help participants negotiate with other caregivers regarding their children’s health behaviours.

Feasibility trial of PTT

Methods for feasibility trial

Study design and participants

In 2009, we conducted a feasibility trial of PTT with parents of 2–5-year-old children. We recruited participants through the two Community Health Centers that participated in the formative assessment as well as through other community agencies (e.g. HeadStart and Women, Infants and Children) that primarily serve low-income families in Boston. Our eligibility criteria were the same as for the formative assessment (described above). None of the parents who participated in the formative study participated in this feasibility trial. Table 2 shows characteristics of the study sample. Fourteen (88%) of the participants were mothers and two (12%) were fathers. Half of the parents ($n = 8$) self-identified as Latina, six parents (38%) as African-American, and two parents (13%) as white. Based on self-reported height and weight, nine parents (60%) reported a BMI of 25 or greater.

Table 2. Characteristics of parents who participated in the PTT feasibility study, $N = 16$.

<table>
<thead>
<tr>
<th>Parent characteristics</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relation to child</td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>14 (88)</td>
</tr>
<tr>
<td>Father</td>
<td>2 (12)</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2 (13)</td>
</tr>
<tr>
<td>Hispanic/Latina</td>
<td>8 (50)</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>6 (38)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>10 (63)</td>
</tr>
<tr>
<td>Not married</td>
<td>6 (37)</td>
</tr>
<tr>
<td>Weight status*</td>
<td></td>
</tr>
<tr>
<td>Normal weight (BMI &lt;25)</td>
<td>6 (40)</td>
</tr>
<tr>
<td>Overweight (BMI 25 to &lt;30)</td>
<td>3 (20)</td>
</tr>
<tr>
<td>Obese (BMI &gt;30)</td>
<td>6 (40)</td>
</tr>
</tbody>
</table>

*BMI data was missing for 1 participant.
Procedure

We implemented two nine-week PTT programmes; the first ran from March to May 2009 and the second ran from July to September 2009. We intended to run the first PTT programme in English and the second in Spanish; however, the parents recruited for the second PTT programme were bilingual and requested the programme be implemented in English. Therefore, both programmes were implemented in English.

PTT intervention

The overarching framework guiding the PTT intervention was the social contextual framework (Sorensen et al., 2003), which posits that, to be effective, interventions must take into account the social context in which participants live as well as the key psychosocial constructs that influence behaviour (Figure 1). Through our formative assessment, we identified a set of social contextual factors that are not influenced by the intervention, but which we took into consideration when developing the intervention to ensure our messages were contextually appropriate for our participants. As an example, because families may not have access to a safe, outdoor play space, we included ideas for physical activities that are appropriate for small, indoor spaces.

The key lessons from our formative assessment (Table 1) also informed the development of the PTT intervention. Based on our finding that general parenting issues, e.g. discipline, are of significant concern and interest to parents of preschool age children, we adapted an existing, empirically tested general skills parenting programme, the Chicago Parent Programme (CPP) (Gross et al., 2009), to include lessons related to parental roles in promoting healthful nutrition and activity behaviours among their

Figure 1. Conceptual framework, based on social contextual framework, of the PTT study.
children. CPP is delivered in a group setting and employs videotaped vignettes, discussion questions, and a collaborative interpersonal style for guiding discussions.

An overview of the general parenting and weight-related messages addressed over the nine-week PTT programme is presented in Table 3. To create the PTT sessions, we condensed the CPP content by reducing the number of vignettes presented in each session and then added content and discussion questions focused on weight-related behaviours. For example, in week 1, which focuses on the importance of child-centred time, we included a discussion about the importance of physical activity and brainstormed ideas to make child-centred time active.

Nine two-hour PTT sessions were held at a Community Health Center and were led by a facilitator who received eight hours of training on the curriculum and group facilitation process. We assigned parents weekly homework assignments (e.g. spend at least 15 minutes every day in child-centred time) to enhance skill building and self-efficacy. Additionally, each week parents received a summary of key points to facilitate communication of intervention messages with partners/other caregivers. Parents were provided with a meal and five dollars to help cover travel expenses to attend the programme.

Based on our earlier research that showed that children can serve as motivators for parents to attend events if the children are excited by and engaged in the events (Haines et al., 2006), we developed an interactive children’s programme that ran concurrently with the parent programme. Each session focused on a weight-related behaviour addressed in the parent programme and included: (a) reading a related book, (b) an activity such as yoga, music/dance, or craft, and (c) preparing a healthful snack. The children were also given incentives, such as balls, water bottles, and children’s books (e.g. Bernstein Bears Too Much TV), to facilitate healthful behaviours.

Data collection
Research staff documented the attendance at each session. At the end of the PTT programme, parents completed process evaluation surveys that included closed-ended

Table 3. Overview of general parenting and weight-related topic addressed in the PTT intervention.

<table>
<thead>
<tr>
<th>Session</th>
<th>General parenting topic addressed</th>
<th>Weight-related topic addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Child-centered time</td>
<td>Being physically active with your child</td>
</tr>
<tr>
<td>2</td>
<td>Importance of family routines</td>
<td>Sleep: creating a bedtime routine</td>
</tr>
<tr>
<td>3</td>
<td>Using praise and rewards</td>
<td>Alternatives to using food as rewards</td>
</tr>
<tr>
<td>4</td>
<td>Setting limits</td>
<td>TV: setting limits on TV</td>
</tr>
<tr>
<td>5</td>
<td>Threats and consequences</td>
<td>When not to use threats: identifying your child’s hunger and satiety cues</td>
</tr>
<tr>
<td>6</td>
<td>Using ignore and distract strategies</td>
<td>Ignore and provide alternatives: reducing intake of sugar-sweetened beverages</td>
</tr>
<tr>
<td>7</td>
<td>Stress management</td>
<td>Indoor and outdoor family-based physical activities</td>
</tr>
<tr>
<td>8</td>
<td>Problem-solving skills with adults</td>
<td>Problem solving with partners and other caregivers about child’s health behaviours</td>
</tr>
<tr>
<td>9</td>
<td>Putting it all together</td>
<td>Putting it all together: weight-related behaviours</td>
</tr>
</tbody>
</table>
questions asking parents to rate their satisfaction with both the parent and children’s programme. Interviewers, who were not involved in the PTT study, conducted qualitative interviews with seven parents mid-way through the programme to examine parents’ opinions of the PTT programme. All parents were invited to participate in the qualitative interviews and we interviewed the first seven parents who volunteered. Parents were provided with a 20-dollar gift card for completing the interview.

Data analysis
We calculated frequencies using the quantitative data collected from the parent process surveys. Two members of the research staff (A.O. and J.H.) used content analysis to identify consistent themes across the qualitative data obtained from the interviews with parents.

Results from feasibility trial
We enrolled 16 parents to participate in the PTT programme, 6 in the first offering of the PTT programme and 10 in the second. Because 1 parent did not attend the final session, which was when the process survey was completed, only 15 (94%) of the 16 enrolled parents completed the process survey.

Process evaluation
Of the 16 parents who participated in the feasibility trial, 11 (69%) attended 6 or more of the 9 sessions and 3 (19%) attended only one session. Among the 15 participants who completed the process surveys, 12 (80%) reported that they were ‘very satisfied’ with the programme and 3 (20%) reported they were ‘satisfied’. Compared to when they started the programme, parents reported feeling more confident about helping their child develop healthful eating habits (67% ‘much more confident’ and 33% ‘a little more confident’) and managing their child’s behaviour (60% ‘much more confident’ and 40% ‘a little more confident’). Thirteen parents (87%) reported that they were ‘very satisfied’ with the children’s programme and two (13%) reported they were ‘satisfied’.

In the qualitative interviews, parents universally praised the PTT parent programme. The social support provided by other parents in the group and the opportunity to learn various strategies for parenting and nurturing healthful weight-related behaviours emerged as key strengths of the programme. As one parent said,

I think it was great – you have parents from all sorts of backgrounds and I was able to learn from others’ different experiences; to get other ideas, if something didn’t work for you in the past, but worked for someone else, getting feedback from others was helpful.

Parents also identified that PTT provided them with time to think about issues related to parenting. One parent stated that PTT ‘was a nice chance to stop and think about how we interact with our child and the behaviours we encourage or discourage’.

Parents were also very enthusiastic about the interactive children’s programme. One parent identified the children’s programme as a motivator to attend PTT, ‘That was the greatest plus – the biggest pull for coming to this program. I don’t think I would have
been able to attend if it wasn’t for, not just childcare, but the activities they do with the kids’. Another parent said, ‘... the children’s group has been great because she also looks forward to [coming and] seeing those friends that she’s met’.

Discussion of the feasibility trial

In this feasibility trial of PTT, we found that PTT can be feasibly implemented within a community setting and that the programme can successfully engage parents of preschool-aged children. Attendance rates were relatively high; nearly 70% of the parents attended six or more of the nine PTT sessions. Poor attendance has been identified as a key challenge in family-based obesity treatment interventions (Williams et al., 2010). One multi-centre trial of a family-based obesity treatment intervention reported a drop-out rate of greater than 90% (Pinelli et al., 1999). Studies examining predictors of programme attendance have consistently found that attendance is poorer among low-income and racial minority families (Williams et al., 2010; Zeller et al., 2004). In general, attendance rates at general parenting programmes have been found to be higher than those reported for obesity treatment interventions (Gross et al., 2009; Webster-Stratton et al., 2001). Among a low-income sample of Caucasian, African-American, Hispanic, and Asian mothers, over 88% of the mothers attended 6 or more of the 12 sessions offered (Webster-Stratton et al., 2001). The fact that we attained higher attendance rates than most of these studies suggests that integrating obesity prevention messages within a general parenting intervention may be an effective strategy for engaging low-income, racially diverse families.

Although parenting skills training has been included in some family-based obesity treatment interventions, few obesity prevention interventions have addressed general parenting skills. A recent review of obesity prevention interventions for preschool-aged children (Skouteris et al., 2011) found that only two obesity prevention interventions address aspects of general parenting (Harvey-Berino & Rourke, 2003; Shelton et al., 2007). Harvey-Berino and Rourke (2003) conducted a pilot study of a home-based intervention that aimed to change parenting skills, that is, rule setting, specific to children’s feeding and activity behaviours. Shelton et al. (2007) evaluated a parent-based group education programme for parents of overweight or obese children that included one session that addressed how parents can overcome behaviour problems with their child. Our current study builds upon this research by examining the feasibility and acceptability of a comprehensive intervention that embeds weight-related messages within an empirically tested group parenting education programme.

Our intervention was also unique in that it was guided by the social contextual framework and got information from an in-depth formative assessment with members of our target population. Accounting for participants’ social context enhances the likelihood that an intervention will be able to change behaviour (Sorensen et al., 2003).

Engaging a children’s programme as a catalyst for parent participation was also innovative. Findings from our qualitative interviews with parents suggest that children’s excitement about our children’s programme did motivate parents to attend the programme. A randomised-controlled trial of a parent-based obesity prevention intervention that is currently underway in North Carolina has included a children’s curriculum (Ward et al., 2011). Results from that larger trial may provide additional evidence about the extent to which a children’s programme is an effective strategy for enhancing parent attendance.
A limitation of this study is that the sample is small and limited to a purposive sample of parents in one urban city in the northeastern USA. Therefore, our results may not be generalisable to broader populations of parents.

**Conclusions**
To be effective, family-based obesity prevention interventions need to engage parents of preschool-aged children. Our results suggest that racially/ethnically diverse parents of young children will be engaged in an intervention that ‘meets parents where they are’ by addressing factors of relevance to them and their lives. By embedding weight-related intervention messages within a general parenting skills intervention, PTT was able to effectively engage parents. Our next step in this research programme is to conduct a randomised-controlled trial to determine the extent to which the PTT intervention can change child behaviours and weight outcomes.

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