Mothers' perceptions of Melbourne InFANT Program: informing future practice

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Mothers’ perceptions of Melbourne InFANT program – informing future practice

SUMMARY

Intervention programs to prevent childhood obesity are more likely to be successful when mothers are involved and engaged. Yet programs that involve mothers do not often employ process evaluation to identify aspects of the intervention that participants enjoyed or viewed as useful. The aims of this study were to describe how participants of the Melbourne InFANT Program – an early childhood obesity prevention intervention – engaged in the program and perceived its usefulness. Process evaluation data were collected at multiple time points during and after the intervention, using mixed methods drawing upon both quantitative and qualitative data. Results from short surveys (n=271) and interview transcripts (n=26) revealed that the Melbourne InFANT Program was perceived as useful and relevant by most (82% - 93%) participants. The formats through which the knowledge and skills were delivered were considered concise and effective, and aspects considered particularly useful included group sessions and advice on practical strategies to minimise stress around mealtimes. Findings from this study are important to inform future practice and the development of interventions which are well received by participants.

Key words: child obesity, prevention intervention, process evaluation, first-time mothers
INTRODUCTION

Overweight and obesity among children are increasing rapidly on a global scale (World Health Organisation 2010). A recent paper combining 450 international studies reported that childhood overweight and obesity had increased from 4.2% worldwide in 1990 to 6.7% in 2010 (de Onis, Blössner & Borghi 2010). In Australia, a national study found that amongst children aged 2-3 years, 21% of boys and 18% of girls were overweight or obese (2007 Australian national Children's Nutrition and Physical Activity Survey - Main Findings). When children of all ages (2-16 years) were included, the rate increased to 22% of boys and 24% of girls. Obesity in childhood is known to be associated with the later development of non-communicable diseases such as dyslipidaemia, hypertension, insulin resistance, metabolic syndrome and obstructive sleep apnoea (Denney-Wilson et al. 2008). Additionally, evidence suggests that child weight status tracks to adulthood and that this tracking begins as early as infancy and that childhood body mass index (BMI) at 6 months and at 11 years of age predict adult obesity (Baird et al. 2005; Eriksson et al. 2003; Freedman et al. 2005; Gardner et al. 2009; Nader et al. 2006). As such, the high rate of overweight and obesity in children heralds a compelling public health issue.

Mothers are likely to be a primary influence on children’s obesity-promoting behaviours such as diet, physical activity and sedentary behaviours (Byrd-Bredbenner, Abbot & Cussler 2008). Hence the involvement and engagement of mothers in interventions to improve such child behaviours is likely to be the key to their success (Brown & Lee 2011; Harvey-Berino, J. & Rourke, J. 2003). Regardless of the sites of intervention, e.g. schools, day care centres or the broader community, many previous early childhood (age 0-5 years) obesity interventions involved parents (Bayer et al. 2009; Caballero et al. 2003; Dennison & Faith 2008; Essery et al. 2008; Fitzgibbon et al. 2005; Harvey-Berino, J. & Rourke, J. 2003; Horodynski & Stommel 2005; Klohe-Lehman et al. 2007; McGarvey et al. 2004; Shelton et
al. 2007). However, understanding what aspects of infant feeding education would engage parents in child-obesity prevention interventions remains scant. A review (Hesketh & Campbell 2010) of early childhood obesity prevention interventions revealed that few programs employed process evaluation to identify aspects of the intervention found to be engaging or useful to participants. Instead, some studies (Caballero et al. 2003; Harvey-Berino, J & Rourke, J 2003) used reports of attendance and number of sessions completed as proxies for participants’ engagement while other pilot studies (Fitzgibbon et al. 2005) reported feasibility and acceptability of the intervention which could be considered as proxies for engagement. However, the knowledge of how to engage parents which can be obtained from these reports is limited. In order to understand what intervention programs and program components will engage parents, process evaluation of the content as well as the means of content delivery is needed.

Process evaluation is gaining importance as a part of good research practice, providing a feedback loop to inform the development of future programs (Oakley et al. 2006). Further, research bodies such as the Medical Research Council of the United Kingdom advise including a process evaluation component in the early stages of randomised controlled trials (Munro & Bloor 2010). The aim of this process evaluation study was to describe participants’ engagement in an early childhood obesity prevention intervention – the Melbourne Infant Feeding Activity and Nutrition Trial (InFANT) Program. In particular we sought to understand which aspects that participants of the program found most useful and relevant, thereby gaining insights to ways to engage participants.

The Melbourne InFANT Program is a community-based, cluster-randomised controlled trial aimed at promoting positive dietary, physical activity and sedentary behaviours to first-time parents recruited in 14 local government areas in Melbourne, Victoria. The total number of mother-infant dyads participating in the program was 542 in 62 groups, with 50% in the
intervention arm (n=271). Details of the intervention are described elsewhere. (Campbell et al. 2008)

The 18 month intervention comprised six sessions delivered quarterly by a dietitian to first-time parents’ groups. These groups are initially established by community Maternal and Child Health (MCH) nurses, but often continue as a parent-led group when children are older than three months. The Melbourne InFANT Program sessions commenced when the children were around four months of age. Under an anticipatory guidance framework the intervention focused on delivering knowledge and skills regard infant feeding and active play at various stages of child development. This program also focussed on parent modelling of healthy eating, physical activity and reduced sedentary behaviours. Brief didactic sessions, promotion of group discussion, exploration of perceived barriers and facilitators, and the repeated use of consistent visual and written messages were used in the program delivery. Key messages and slogans regarding infant feeding delivered at each session are summarised in Table 1.

The control group received usual care and newsletters on general child health topics not related to obesity-prevention behaviours.

METHODS

This study analysed the process evaluation data collected during and after the InFANT Program. Employing an integration of quantitative and qualitative analyses, the study examined participants’ perceptions of the usefulness and relevance of the Melbourne InFANT Program and of the program’s various components.

**Process evaluation** A mixed method design was employed to conduct the process evaluation which was composed of two different assessments: one assessed participants’ rating of the
usefulness and relevance of the program quantitatively; the other explored participants’
perception of the program through in-depth interviews. The epistemological underpinnings
of this design are that a pragmatic approach triangulating numerical data (ratings of
usefulness/relevance) with narrative data (views and perceptions in participants’ own voice)
will provide a richer, more comprehensive assessment of participant engagement. (Creswell
& Clark 2011) The result of combining the two methodologies in the collection and inference
of data is a robust description of participant engagement – an objective and unbiased report
on the usefulness/relevance of the program (quantitative data) alongside a deeper exploration
into participants’ perception of participation (qualitative data).

Quantitative assessment  At the conclusion of each of the six group sessions in the
intervention program, all participants were invited to complete a process evaluation form
voluntarily and anonymously. The evaluation forms sought to solicit participants’ feedback
on the usefulness and relevance of the program and the components of each of the sessions,
via questions such as “How useful was the session overall?”, “How relevant was this session
to you and your family?”, “How useful was the information your group leader talked about?”,
“How useful was the information other parents in your group talked about?”; “How useful
was the InFANT DVD?”. Respondents were asked to rate the usefulness/relevance on a 4-
point Likert scale of very useful/relevant, quite a bit useful/relevant, a little useful/relevant,
or not at all useful/relevant. Respondents’ rating of the usefulness of the program are
reported in Table 1 as one value of “useful” by combining values of “quite a bit useful” and
“very useful”. Frequencies were assessed using SPSS version 19 (IBM, 2011).

Qualitative exploration of participants’ perception of the program

Three to five months after the conclusion of the 18-month program, participants were invited
to an individual 30-minute structured telephone interview conducted by two Melbourne
InFANT Program researchers who had no relationship with the interviewees. Sampling for the interviews was purposive to include a heterogeneous sample with maximum variation (Liamputtong 2009), such as those who attended sessions both frequently and infrequently, and participants across the spectrum of socio-economic position of the groups. The interviews sought to explore and describe participants’ perception of the program, its mode of delivery, the usefulness and relevance of the program content, barriers and facilitators to attendance and engagement in the program. Mothers invited to participate (n=81) were those from the intervention arm of the Melbourne InFANT Program who had provided post-intervention data for the main study by February 2010. Of those invited, 26 agreed to participate. At the point of 26 interviews being conducted the research team was satisfied that a saturation of data was reached and no further participants were invited.

Interviews were audio-tape recorded and transcribed by a transcription service independent of the research team. Transcripts were reviewed by one researcher for completeness, and a stepwise analysis of the transcripts was manually performed, guided by a model presented by Creswell (Creswell 2009). The process involved several readings through all transcripts to allow the analyst to immerse in the data, grouping data by codes (such as aspects of the program that participants enjoyed or did not enjoy). Further coding was also undertaken according to the themes identified during the analysis. Finally interpretation of themes based on the evaluative coding revealed the facilitators and barriers to participants’ engagement in the program. Themes were organised in a hierarchical fashion, building upwards from raw data to recurring themes, sub-themes, and main themes on top of the ladder. (Glaser 1992). An overview of the process evaluation, time points when the evaluation took place, age and number of children at each session and key questions discussed in the interviews are presented in Table 1.

RESULTS
Quantitative process evaluations were completed by between 51% (session 4) and 87% (session 1) of intervention participants attending each session. As the quantitative evaluation was anonymous no personal or demographic details of the respondents who filled out the process evaluation forms were available. However, the high participation rate in the evaluation process is an indication that all groups of participants were represented in the quantitative evaluation. Twenty six parents participated in qualitative interviews and all were female with a mean age of 34. All but one were married or in a de facto relationship. While the importance of pairing process evaluation of the Program with the evaluation of the effectiveness of the Program itself is recognised by the research team, this paper reports only the results of the process evaluation with the effectiveness of the Program reported elsewhere.ii

Participation in the Melbourne InFANT Program was high with 86% of all eligible recruits agreeing to study participation. Attrition was low, with 89% of the mother-children dyads allocated to the intervention arm still participating at 15 months. Of those participants in the intervention arm who completed the trial, 68% attended the majority of intervention sessions (≥4 of 6 sessions). The high participation rate is an indication of the overall level of participants’ engagement in the Melbourne InFANT Program.

Quantitative process evaluations were completed by between 51% (for session 4) and 87% (for session 1) of intervention participants attending each session. (Data not shown in this paper.) Program engagement was also assessed as the proportion of participants who perceived the program and its contents to be useful and/or relevant. Likewise, the relevance of the program, the usefulness of information the group leader talked about and the usefulness of information other parents talked about are reported by combining values of “quite relevant” and “very relevant” to one single value of “relevant”, or by combining the values of “quite a bit useful” and “very useful” as one value of “useful”.
Key findings from the qualitative exploration and the quantitative assessment are discussed below.

**Group sessions perceived to be useful/relevant**

The main component of the intervention was the delivery of six group sessions during which a dietitian facilitated group discussions, participants watched a purpose-designed DVD and engaged in various activities to promote obesity-preventive behaviours. Quantitative data illustrated high level of perceived Program usefulness (85% in session 4 to 93% in session 1 rating “iseful”) and relevance (82% in session 4 to 93% in session 1 rating “relevant”). The quantitative data also showed that a high percentage of participants perceived the information from group leader and from other parents during the group sessions to be useful (85-93%, and 79-87% respectively). For percentage of participants rating these categories useful or relevant at each session, please refer to Table 1.

As revealed in the qualitative analyses, the non-hierarchical environment of the group sessions provided a relaxed and interactive vehicle for parents to engage in acquiring information. In the groups, mothers felt accepted by their peers and encouraged to voice their opinion and concerns. An example of participants’ comments is:

“...because you’re familiar with that group of people, you’re more inclined to be forthcoming with information.” (int20)

Participants also found the group dynamics particularly beneficial:

“...it just takes one person to raise (a question) and we can all benefit from whatever the response is.” (int9)

The social setting helped facilitate participation even when it was a struggle for some participants to find time to attend the sessions:
“Listen, I was there on the 42 degree day... I thought because our group was making the effort to go, I made the effort to go as well. I think everyone felt that way.” (int5)

Barriers to program attendance were also acknowledged. Interviewees in the qualitative study attributed the barriers to their return to work and the ever-evolving daily routines of their children:

“...as the age of the kids changes, a morning thing is probably a bit easier. They sleep in the afternoon.” (int21)

“I didn’t have (child’s name) with me on those (non-work) days, so obviously I’m kind of rushing around trying to do things that I need to do while I’ve got my liberty.” (int10)

As the babies gained more mobility, the participants found it hard to give undivided attention at the group sessions.

“as the kids got older, you were unable to have your full attention with the information session, because they were running around and pulling out cords and all that kind of stuff...” (int11)

**Perceived usefulness of various media formats**

In addition to the sessions, information was provided to parents using a range of media including a purpose-designed DVD, various handouts and leaflets given out during sessions, and newsletters mailed between sessions.

**DVD**

The proportion of participants who found the DVD useful (either quite or very useful) was between 68.4% (in session 6) and 88.6% (in session 2). (Data not shown in this paper.)
Interviewees of the qualitative analyses attributed the usefulness of the DVD to its accessibility and flexibility: participants were given a copy of the DVD so they could watch it in their own time, share it with partners, family and friends, and refer back to it in the future. Examples of comments regarding the DVD are:

“I think the DVD was probably the best, because people can then sit down and watch it ... with their husband and discuss different things while watching it.” (int11)

“now that I’ve got my second one about to start solids, I need to go back and watch the DVD.” (int16)

To those who did not find the DVD useful, it could be that the format was not an engaging one. One interviewee commented that she associated watching a DVD with recreation, not a source of information:

“(watching) the DVD, I tend to just switch off.” (int14)

**Handouts**

In general, respondents reported that they found the handouts useful (between 69.0% and 89.7%). (Data not shown in this paper.) Among the handouts, charts and fridge magnets were perceived by all interviewees as very useful:

“Yeah, that sheet that you asked us to put on the fridge... That’s still on my fridge. Obviously that slogan thing would stay on my fridge until it falls off.” (int11)

According to the interviewees, the charts and fridge magnets were used more than the other resources because they were:

(1) visible – “just things that are actually going to be used, therefore they stay in circulation in the home, they don’t just get put into a pile with magazines.”
visual – “they’ve got different pictures down the side so she (child) can identify what fruit and vegetables you know she needs to put into something.” (int7)

concise – “just keeping them sort of short and concise... I didn’t read them as you know like as a Bible... I refer to them as you know snippets of information that are useful tips that could be incorporated into everyday life.” (int7)

in point form – “So ... the point form, pictures, are more useful as well, ‘cause I guess mums have so much to do.” (int18)

Newsletters mailed out between sessions

Over half (61.2% in session 4 to 67.1% in session 6) of the respondents rated the newsletters useful. This proportion was lower than the percentage of participants who rated the other aspects of the program as useful. It can be an indication that the newsletters were the least popular resources. Some participants in the interviews complained that they got inundated by all sorts of mail-outs from various sources.

Need for a variety of formats

In general, most interviewees stressed that a variety of media was essential to address individual needs and learning preferences since one medium may be more appropriate at one particular time than another. One interviewee summed it up:

“I think the variety of media that InFANT program used was good because at various times, through the first 12 months, some things are more or less accessible to you ... like going to the computer when you’ve got a tiny baby, that can be hard to do, whereas you know using your mobile, getting texts or whatever is easy. But then as
the kid gets older and you're more able to do more things, then it's less of an issue.”

(int9)

Perceived usefulness of program content

Data collected from the qualitative study revealed that most participants were enthusiastic about acquiring knowledge from the Melbourne InFANT Program. One recurring theme in the analysis of transcripts was participants’ need for reassurance: first-time mothers appeared to be more inclined to engage themselves in contexts that were reassuring.

“… it was very useful and relevant because it’s good that the stuff you know is confirmed … So I knew that I was up-to-date with everything … I need it to build up my confidence.” (int19)

The responses to the interviews indicated that most participants gauged the usefulness of a component of the program by its practicality. The qualitative data showed that program contents were considered practical by participants if: they served as constant reminders; they addressed the convenience issue especially for the time-poor; they helped relieve the stresses around mealtimes, and; they were tried and tested by the participants. For example, broad messages to promote consumption of fruit and vegetables were remembered by interviewees as ‘the little recipes cards’ while in fact, there were more than recipes in the handouts on fruit and vegetables. Since the handouts were perceived as practical, they were then perceived as useful. The quantitative analysis confirmed this by showing around 70% of participants rated each of the the fruit and vegetables tips sheets useful.

In addition, information that may help ease mealtimes stresses such as tips to prevent fussy eating, or strategies of not offering food as a reward, was considered to be useful to most participants.
“I remember from the InFANT project, ‘the more you fuss, the more they fuss’ and I actually think that’s worked because I think mealtime for some people is a really big problem and people hate it when it comes to mealtime if it’s a struggle.” (int 26)

For this reason, participants appeared to be receptive to concepts totally new to them, such as the message *Parents Provide, Kids Decide*, a concept of responsibility division with a parent’s responsibility to provide healthy food and activity options, and a child’s responsibility to decide on the amount of food to eat and the activities to engage in. Interviewees remarked at how the new concept resonated with them:

> “the idea of, you know, like the parent providing and then the child actually deciding about whether they choose to eat it or not, makes, I suppose, my life incredibly easy compared to other people...” (int 25)

Another innovative component of the Melbourne InFANT Program that resonated with participants was an activity that focused on skills for budgeting food shopping and preparing home meals. Over half (58.8% in session 5 to 72.2% in session 4) of participants found the component useful.

> “The other thing I did find interesting was we did a session that was how much you should spend on grocery bill according to the healthy diet pyramid. I hadn’t particularly thought of that correlation before ... that one for me was a particularly good one.” (int 7)

**Barriers to engagement in program contents**

Some participants were not keen to adopt messages or guidelines taught in the program if they perceived those guidelines as prescriptive, dogmatic or rigid. One example of comments was:
“On occasions I felt like the seminar sessions or the reading material was a bit prescriptive and that if you didn’t feed your child according to the values that were being taught, then you weren’t doing it right.” (int 9)

The barriers and facilitators to participants’ engagement in the Program and the reasons or attributes for these barriers and facilitators are summarised in Table 2.

**DISCUSSION**

This study is the first to report process evaluation data of participants’ perceptions of an early childhood obesity prevention program. The Melbourne InFANT Program was shown to be well received by the first-time mothers in the intervention groups. The quantitative analysis showed that the majority of participants found each of the different sessions to be useful, and this was largely attributed to the practicality of the Program content.

The first-time mothers in the Program appeared to lack confidence regarding feeding and were looking for an authoritative source for reassurance. This concurs with existing evidence that parents regularly seek nutrition information from authoritative sources such as general practitioners and Maternal and Child Health nurses. (Graham et al. 1999) Strategies that sought to ease stress around mealtimes were particularly well received across all groups, even if the strategies were based on new concepts. One of the new concepts introduced during the InFANT Program was *Parents Provide, Kids Decide*. This was based on previous literature maintaining that feeding of infants was most successful when parents allow the infants to determine the timing, amount, and preference of eating. (Satter 1995) It is of interest to find that this new concept was well received despite being a total departure from the approaches to feeding that many participants anticipated. This provides evidence to support the assumption that first-time mothers in their transition to motherhood are receptive to information that may improve the nutrition of their children, and the enjoyment of family
meals.

While few studies have reported process evaluation of early childhood obesity prevention interventions, the process evaluation of an intervention program aimed at increasing physical activity among 10-year-old children reported a similarly high degree of enjoyment by participating children and the enjoyment was an important mediator attributed to the success of the program (Salmon et al. 2005). Process evaluation of an anticipatory program teaching new fathers how to support mothers to breastfeed, also revealed a high proportion of participants found the guide relevant. (Tohotoa et al. 2011)

Respondents to the qualitative study nominated a variety of formats – DVD, newsletters, handouts, a website – for receiving healthy feeding messages. Their view was that their circumstances and needs varied with time and a variety of formats would meet the varying needs at various times.

This study fills a gap in the literature by clarifying the ways Australian parents engage in programs aiming to develop healthy eating and active play behaviours. Identifying aspects of the program which parents found most useful helps to inform the content of future interventions, and make these more parsimonious and efficient.

This study made use of triangulation, incorporating the analyses of quantitative and qualitative data to gain a comprehensive and detailed understanding of participants’ views of the intervention, an understanding that health promoters can apply to designing programs for first-time mothers. Collection of data at a number of time points both during and after the intervention maximised the opportunity for a variety of feedback.

While the mixed method design allowed the quantitative and the qualitative studies to complement each other, some weaknesses inherent to the investigative strategies remained.
For example, the anonymity of participants taking part in the quantitative evaluation prohibited analysis of the participants by demographic and socio-economic clusters. It is also acknowledged that the quantitative evaluation surveys may not have captured the full cross section of the sample which may limit generalisability. However, all parents groups were represented in this data. Further, it is important to acknowledge that the mothers who joined intervention groups of this kind might be more likely to be those with higher propensity to adopt healthy feeding practices, and those who did not might possibly be the more disadvantaged and were not represented in this study. A significant area for future research will be to explore ways to reach mothers with less propensity to participate in health promotion programs.

CONCLUSION

Both the quantitative and qualitative analyses suggest that the content and format of the Melbourne InFANT Program were effective ways to communicate information regarding infant feeding to first-time Australian mothers. This evaluation indicates that for an educational program on infant feeding to successfully engage first-time mothers, it has to take into account the changing demands on the mothers during different stages of their babies’ growth, and a variety of messages and formats are needed. First-time mothers consider themselves time poor and prefer information sources to be concise and easily understood. They are also receptive of new concepts regarding feeding as long as the recommendations help ease the stress around mealtimes. Given the findings from the interviews that the slogans used in the Program stuck in the minds of the participants months after the intervention, programs targeting first-time mothers in the future might consider trialling and including key intervention messages in slogan form. It is evident in both the quantitative and qualitative evaluations that group sessions not only satisfied the social needs of the mothers but were also viewed as an effective platform for acquisition of knowledge and skills. The
fact that the Program was well received across various demographic and socio-economic
groups suggests that the content and format may have good translation to a wider population.

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