Acceptability of a weight management intervention for pregnant and postpartum women with BMI ≥30 kg/m2 : a qualitative evaluation of an individualized, home-based service

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Title: Acceptability of a weight management intervention for pregnant and postpartum women with BMI ≥30kg/m^2: A qualitative evaluation of an individualized, home-based service.

Running Head: ACCEPTABILITY OF IN-HOME MATERNAL OBESITY SERVICE

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Abstract

Objectives: There have been recent calls for more evidence regarding effective antenatal and postnatal interventions to address the serious health risks of maternal obesity and associated childhood obesity. The Maternal And Early Years healthy weight Service (MAEYS) is an innovative service, delivered by specialist healthy weight advisors, for obese women (BMI ≥30) during pregnancy and up to two years after delivery. The service focuses on healthy gestational weight gain, postpartum weight loss and establishing healthy infant feeding and active play. MAEYS was adopted by six local health organizations in the UK as a one year pilot program. The aim of the present research was to assess the acceptability of this intervention among MAEYS participants.

Methods: Semi-structured interviews with 20 women, with data analyzed thematically.

Results: High levels of acceptability were reported. The convenience and comfort of home visits, personalized advice on diet and physical activity, supportive approach of the healthy weight advisor and regular weight monitoring were all cited as advantages of the service. Service users suggested that more frequent contact with advisors and practical support such as recipes would improve the service.

Conclusions: MAEYS is a novel, community-based intervention delivered in the home which has demonstrated acceptability to its recipients. It therefore shows promise as an early intervention to reduce the risks of maternal obesity and subsequently reduce childhood obesity. There is now a need to evaluate the efficacy of MAEYS in preventing excess gestational weight gain and losing weight postpartum.

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Significance

What is already known on this subject?

Maternal obesity is associated with poor maternal and fetal outcomes and the development of childhood obesity. The evidence for weight management interventions during pregnancy and post-partum is mostly limited to research settings and group-based interventions.

What this study adds?

The obese women in this study valued the opportunity to receive personalized, one to one support for weight management in their own home during pregnancy and post-partum, and they engaged with many aspects of the service. A maternal obesity intervention based on this model may overcome the high dropout observed in group-based interventions.

Keywords

Obesity, pregnancy, qualitative, service evaluation, intervention

Introduction

The rapid increase in rates of childhood obesity since the 1980s has been highlighted as a major public health issue in the UK (Department of Health [DOH], 2010; Foresight, 2007) and globally (World Health Organization, 2012). Without immediate action almost two thirds of children and 90% of adults in the UK will be either overweight or obese by 2050 (Foresight, 2007). A clear link has been established between high maternal body mass index (BMI) and increased risk of childhood obesity (Griffiths, Hawkins, Cole, Dezateux, & Millenium Cohort Study

Group, 2010; Pirkola et al, 2010). Furthermore, entering pregnancy whilst obese significantly increases the risk of experiencing serious maternal and fetal complications, including gestational diabetes mellitus, pre-eclampsia, stillbirth and macrosomia (Abenhaim, Kinch, Morin, Benjamin & Usher, 2007). The costs of caring for obese women during pregnancy and childbirth are also significant (Morgan et al, 2014). Obese women require more specialist obstetric care during pregnancy (Heslehurst et al, 2008), are more likely to experience an assisted delivery (Athukorala, Rumbold, Wilson & Crowther, 2010), have a higher number of maternal and neonatal hospital admissions (Denison et al, 2014), and are likely to have a longer stay in hospital (Galtier-Dereure, Boegner & Bringer, 2000).

The additional burden of maternal obesity on healthcare providers has led to recent calls for more evidence regarding antenatal and postnatal interventions to address the serious health risks associated with maternal obesity and excess gestational weight gain (Centre for Maternal and Child Enquiries [CMACE] & Royal College of Obstetricians and Gynaecologists [RCOG], 2010; National Institute of Health and Care Excellence [NICE], 2010). Early life interventions have been identified as the most effective family-oriented response (Foresight, 2007), and it has been suggested that child health information is most important to parents during pregnancy and the first years of life (DOH, 2008).

The Maternal and Early Years Healthy Weight Service (MAEYS) was one of the first UK care pathways developed specifically for obese (BMI ≥ 30) women during and after pregnancy. The service was designed by a panel of experts, and informed by a detailed literature review, UK clinical guidance and focus groups with potential

service participants (Edmunds, Atkinson & Pottinger, 2008). The content of MAEYS has been previously described (Baker, 2011). Briefly, the service was delivered on a one to one basis, in the woman's home, by non-clinical Healthy Weight Advisors (HWA). Eligible women were referred by healthcare professionals. The specific aim of MAEYS was to prevent childhood obesity through minimizing gestational weight gain, and establishing healthy infant feeding habits. Additionally healthy gestational weight gain and postpartum weight loss were anticipated.

MAEYS was implemented as a one year pilot in the West Midlands region of England, where 20.4% of women giving birth had a BMI greater than 30kg/m^2 (Sheikh, Malik & Gardosi, 2010). The primary goal of the pilot was to ascertain the feasibility and acceptability of the service to its target population. Further, the pilot aimed to gain an understanding of the potential impact of the service. The present authors were commissioned to conduct an independent multi-perspective evaluation. The views and experiences of women who had declined or disengaged from the service, are reported elsewhere (Atkinson, Olander & French, 2013). The primary aim of the present research was to assess the acceptability of MAEYS to the women who used the service and to identify the elements of MAEYS these women found most beneficial.

Methods

Design

Cross-sectional interview study.

Setting

MAEYS was delivered by six different local health service providers within one region in England.

Participants

A total of 20 women participated. All women had a BMI ≥30kg/m^2 at their first antenatal appointment, or postpartum, and were actively receiving the service at the time of the interview. As women could join the service during pregnancy or postpartum and evaluation was conducted towards the end of the one year pilot, most women were postpartum when interviewed. Preliminary analysis of data from these participants suggested that sufficient interviews had been conducted to reach data saturation as no new themes emerged from the most recent interviews. Ages ranged from 25 to 39 years and parity ranged from first to third pregnancy. One participant reported her ethnic background as Pakistani British; all other women reported being White British, reflecting the general MAEYS user population where White British women were over represented (Baker, 2011). Most participants commenced the service during pregnancy. Total time using the service at the time of interview ranged from one to twelve months.

Procedure

Ethical approval was received from the first author's institutional Research Ethics Committee. MAEYS project leads asked their clients if they would be willing to be contacted regarding the evaluation and, following verbal agreement, women's contact details were passed to the research team. Researchers attempted to contact each of these women by telephone to invite them to take part in a single face to face interview. Contact was attempted on at least three separate occasions, varying the time of day when calls were made. Voicemail and text messages were also used to initiate contact. See Figure 1 for flow chart of participant recruitment.

All participants were provided with an information sheet explaining the study, and gave informed consent prior to commencing the interview. All interviewers were female, employed as researchers by the first author's institution, and had prior experience of conducting qualitative interviews and analysis. Interviews took place in the participants' homes at a time convenient to them. Interview duration ranged from seven to 37 minutes. Average duration was 19 minutes. All discussions were digitally recorded and transcribed verbatim.

[Figure 1 here]

Interview guide

Interviews were guided by a topic guide (see Table 1), however participants were encouraged to talk freely about their experiences and anything they felt was important.

[Table 1 here]

Analysis

An inductive, realist approach was employed. Realism in program evaluation has been advocated due to the necessity of recognizing that interventions take place in the 'real world' (Pawson & Tilley, 1997). Realist approaches seek to discover and explicate the underlying mechanisms by which the outcomes of an intervention are achieved, and to recognize the influence of context. Additionally, realists consider emotions, beliefs and values to be part of reality and hold that these factors are causally relevant to understanding and explaining the phenomena being studied (Putnam, 1999). Data were analyzed thematically by two researchers independently, according to the principles outlined by Braun and Clarke (2006). Briefly, analysis involved familiarization with the data, followed by manual coding of all relevant data.

Patterns (themes) within the data were then identified and manually checked against coded data. Finally the themes were defined through detailed examination of the content of groups of similar data. Data was only included as a theme where it was supported by multiple participants' accounts. Once completed, analyses were compared and discussed and themes refined. Final themes were agreed by all authors.

Results

Five themes emerged: referral process, positive and negative aspects, weight monitoring, healthy weight advisors, and suggestions for improvement. Although women were asked about changes to their lifestyle or parenting, this topic did not emerge as a major theme. Table 3 contains illustrative quotes for each theme, with pseudonyms used to preserve anonymity.

[Table 3 here]

Referral process

Women were referred through a variety of routes, mainly via midwives but also by health visitors and children's centers. Most women had been referred during pregnancy, with a few referred after giving birth. Women often reported that it was best to start the service in early pregnancy, to avoid gaining too much weight in the early stages.

Some women had been proactively offered the service by a health professional due to their high BMI. Other women had been offered the service after raising their weight as a concern, often related to weight gain in previous pregnancies. Many women reported that the referring professional did not provide detailed information on what the service would involve, and while some were happy with this approach,

others would have preferred to have had the service explained in more depth before agreeing to the referral. In some cases women were not told about the service at all, only learning they had been referred when they received a phone call from the HWA to book an appointment. These women reported confusion, shock or upset. For example, one woman described feeling “quite offended by it” when she received the call, and was told she had been referred because of her weight.

Positive and negative aspects

The convenience of the HWA visiting the home was reported as advantageous by a lot of women, as pregnancy and having a young baby or older children were all cited as barriers to attending appointments outside the home. Women also commented that they felt less intimidated and more comfortable talking about weight in their own home. For example, one woman described feeling more relaxed and more likely to be honest about her recent diet and physical activity. Many women described disliking the idea of discussing their weight in a group, and appreciating the personal attention of the one to one service.

Several women remarked positively on the healthy eating advice they had received. Women mentioned the ideas for healthy alternatives to their current food choices, information on portion sizes, help with reading labels, understanding food groups and increasing fruit and vegetable intake as beneficial. Some women found recording their food intake in diaries to be especially useful. Diaries were reported as a good way to increase awareness of what they were eating, and a helpful tool for the HWA to identify areas for improvement. For example, one woman noted that she had previously not been aware of how much high fat food she had been eating, and

another described how the HWA had suggested snacks that would help to keep her energy up as she was feeling tired. Women also talked about setting goals, and how they had found it useful to set goals they perceived as small and manageable. They also felt encouraged by the HWA and reported increased confidence and motivation to keep going as a result.

Support with physical activity was also mentioned, such as identifying suitable classes they could attend, advising on other ways to stay active, and by monitoring the women's activity levels. Many women also explained that the HWA had referred them onto additional services, and this referral had been beneficial.

Other specific elements that were cited as valuable included help with weaning, healthy foods for older children, and practical cooking lessons. Women often commented that they valued the wide-ranging support offered by the healthy weight advisor, as this support was not restricted to weight-related issues. For example, one woman reported receiving help to quit smoking, and another had been supported through some family issues. The long duration of the service was also mentioned as a positive, as it enabled the building of a long term relationship with the HWA and women stated that this ongoing relationship would help to maintain their motivation to lose weight after the birth.

More positive than negative aspects were reported. The most common aspect criticized was the infrequency or irregularity of visits, where the gap between visits was reported as affecting motivation. However, some women were satisfied with the frequency of their visits, reporting needing time to achieve the goals they had set

themselves. Phone calls from the HWA also increased satisfaction with the gap between visits.

Weight Monitoring

Despite regular weight checks being an integral element of the planned service, some women reported not being weighed by their HWA. A range of views were expressed regarding weighing as part of the service. Some women were expecting to be weighed regularly, and were surprised when their weight was not monitored. These women stated that they wanted to be weighed, in order to assess their progress. Other woman said they liked to have the option to be weighed or not. Women who were regularly weighed often reported that this monitoring was useful and worked as a motivational tool. For example, one woman described regular weighing as the main reason for using the service, as it encouraged her to continue with her healthy lifestyle.

Healthy weight advisors

Most women were emphatic that their HWA had the necessary skills and knowledge to be able to help them. Some women also commented that they appreciated how their HWA tailored the service to their individual needs and on the efforts their HWA had put into supporting them. For example, several women told of how their HWA had made inquiries about services on the woman's behalf, and even attended a class to assess it for their clients. Women also made reference to this support being unconditional and non-judgmental, and how this experience was different to their experiences with other health professionals.

Suggestions for improving the service

When asked about potential changes to improve the service, the most common suggestion was increased frequency of visits, suggesting that more frequent visits would be helpful as a reminder not to gain weight too quickly during pregnancy. Some women reported difficulties in contacting their HWA or that they had not received a fast response to an enquiry. Speed of response and ease of contact were reported as essential for the women to get value from the service and maintain their engagement.

Some women also wanted more practical support, including recipes, and one woman highlighted that the HWAs may need a better understanding of different ethnic foods, as she was struggling to adapt her traditional Asian recipes to be healthier. Inclusion of partners in the service was another suggestion made by several women.

Discussion

The MAEYS clients interviewed reported mainly positive experiences. Women valued many aspects of the service, including the one to one home visits, personalized advice, and wide-ranging non-judgmental support provided by the HWAs. Tools such as food and activity diaries, and goal-setting exercises were also mentioned as helpful. Most women expected regular weight monitoring to be included in the service, and reported that regular weight checks would be beneficial for seeing their progress and maintaining motivation. The referral experience was negative for some women, where the service was not fully explained by the referring professional, or the referral happened without the woman's knowledge. Irregular or infrequent contact from the HWA, or a lack of responsiveness to inquiries, were also

cited as negative experiences. An increased frequency of contact was the most common suggestion for an improvement that could be made to the service.

This service evaluation has several strengths. The methodology allowed a rich collection of views and experiences and gave women the opportunity to suggest improvements. As MAEYS was delivered as a pilot of a new service integrated into participants' local healthcare system, and not as part of a research study, this evaluation has enabled the identification of pragmatic issues, such as HWAs maintaining regular contact with multiple women, which may not have been revealed for an intervention delivered in a research environment. Therefore, conclusions and recommendations from the present evaluation can be directly applied to future service provision.

Practical and tailored advice from health professionals regarding healthy eating and physical activity, and advice on appropriate gestational weight gain for obese pregnant women has been widely advocated (American College of Obstetricians and Gynecologists [ACOG] 2013; Society of Obstetricians and Gynaecologists of Canada [SOGC], 2010; NICE, 2011). In the UK, NICE (2011) also recommends encouragement and support to achieve a healthy weight before and after pregnancy. Hence the present evaluation provides valuable insight into the acceptability and potential impact of such an intervention on obese women and their infants. The findings have implications for the design of future services, with results highlighting elements such as tailored advice, weight-monitoring, signposting to community services, and goal setting as being particularly valued by participants.

The limitations of the present evaluation must be recognized. The sample size is small, in common with much in-depth qualitative research (Carolan, 2013; Soltani et al, 2012) and lacked ethnic diversity. However, the sample was representative of the MAEYS client base in terms of key demographic and geographic factors (Baker, 2011). Participants who were engaged in the service at the time of the evaluation are expected to have been relatively satisfied with MAEYS, or they would have discontinued the service. However, only women who had truly engaged with the service are able to discuss the details of which elements of the service work, or do not work, for them, and the views of women who discontinued the service have been previously reported (Atkinson et al., 2013).

Similar evaluations of comparable interventions are lacking. Randomized controlled trials of interventions targeting women's weight during and after pregnancy have shown some promising results, (e.g. Dodd et al., 2014; Petrella et al., 2013). However due to the lack of a qualitative component to these evaluations, no results are reported regarding the acceptability of, or satisfaction with, the intervention. The present results do support some of the limited previous findings. Specifically, pregnant and postnatal women have expressed preferences for receiving information early in pregnancy, and signposting to local services (Olander, Atkinson, Edmunds & French, 2012), and an interest in working with a lifestyle coach in the postnatal period (Nicklas et al., 2011). Pregnant women have also reported valuing advice on healthy eating, pedometers and logbooks (Poston et al., 2013), and the non-judgmental attitude of staff, practical support and focus on weight management offered by a specialist clinic (Furness et al., 2011). The need for interventions to directly focus on weight management, not just lifestyle change, has previously been

highlighted (Campbell, Johnson, Messina, Guillaume & Goyder, 2011) and the present results demonstrate that women find this type of support acceptable and actively desire this type of service.

Contrary to the present findings, Poston et al (2013) found that women liked the group-based format of their program, as it gave opportunities to ask questions and share experiences. However, these women also expressed feelings of guilt if they failed to reach their goals or a sense of being judged. The presence of a peer group during discussions about behavior and goal achievement may have contributed to these feelings. Users of the one to one MAEYS service did not report similar feelings. Other qualitative research has also identified the need for interventions to include strategies to increase women's self-efficacy for behavior change, and suggested that these strategies need to be highly individualized (Sui, Turnbull & Dodd, 2013). Hence it may be that the more individualized support provided by MAEYS contributed to women's more positive perceptions of their abilities and achievements. Finally, women in previous studies of group-based programs reported a number of logistical barriers to participation including time and location of sessions (Davis et al., 2012) lack of childcare (Davis et al., 2012; SOGC, 2010) and work commitments (Poston et al., 2013). The flexibility of MAEYS to fit around women's lifestyles is a strength of the service. Hence, the present results suggest several important areas to consider when implementing a care pathway for pregnant women with a BMI ≥30. See Table 2 for list of recommendations for future interventions.

A randomized controlled trial of MAEYS is now needed to fully assess both efficacy and cost-effectiveness. . However, the present results provide some support for the

recommendations of current guidelines (ACOG, 2013; NICE, 2011; SOGC, 2010) by demonstrating that the advocated approach is acceptable to and valued by women. These results have implications for policymakers and commissioners considering possible care pathways for obese women during and after pregnancy.

Conflict of Interests

The authors confirm that they have no conflict of interests to declare.

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Figure 1 – Sample breakdown

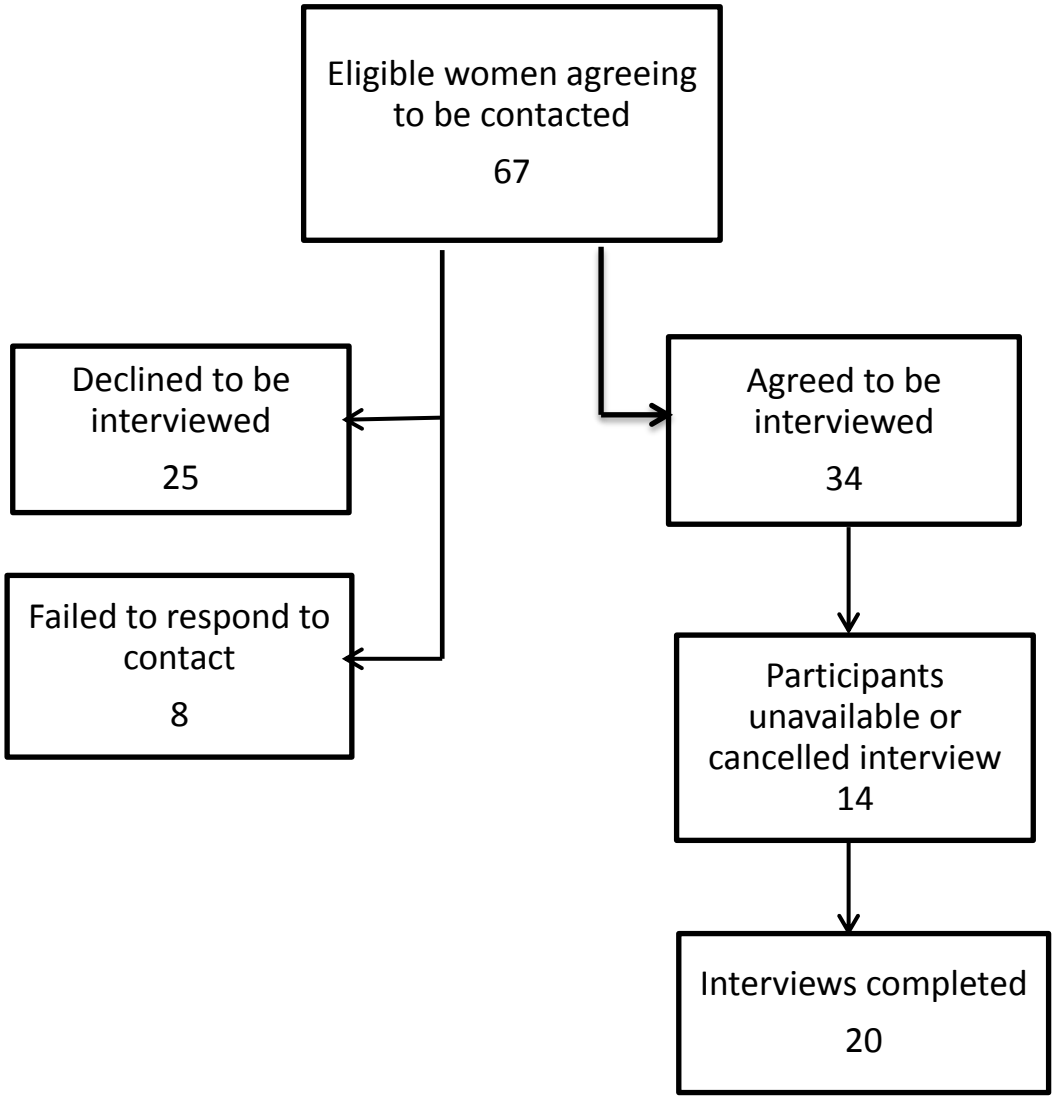

Figure caption sheet

Figure 1. Sample breakdown.

Table 1 – Interview topic guide

Referral and information:
How did you find out about the service? Who referred you? What information were you given about it?

Reasons for participating and expectations:
What was it about the service that appealed to you or encouraged you to start using it? What did you want to get out of the service when you joined it? What did you expect the service to be like? How did it differ from those expectations?

Preferences and benefits:
What parts of the service do you like? What have you found helpful?
What benefits do you feel you've gained from using the service? Has your lifestyle changed since using the service? How?
Which parts of the service don't you like? How could the service be improved? What else would you have liked to have got out of it?

Support:
Thinking about your healthy weight advisor now, do you feel they had the right level of knowledge and skills to help you? How well do you feel they understood your needs, goals, barriers, etc? What additional help would you have liked from them?
Thinking about the frequency of contact with your healthy weight advisor, did you see them enough, too often, or not often enough?

Prompts
Differences between experiences during pregnancy and postpartum?

Aspects of the service (to prompt if participant unable to identify independently):
- HWA/121 support
- Increasing awareness of the issues around weight
- Increasing knowledge about healthy eating or physical activity
- Practical support
- Enhanced/extra services e.g. cook & eat, exercise classes
- Goal setting/planning
- Overcoming barriers

Potential benefits (to prompt if participant unable to identify independently):
- Gained less weight during / lost weight after, pregnancy
- Eating more healthily
- More active
- Help to breastfeed
- Child/family eating more healthily, more active
- Better parenting