Factors influencing engagement in postnatal weight management and subsequent weight and well-being outcomes.

Abstract

Many women exceed gestational weight gain recommendations. Successful postnatal weight management decreases the risk of entering further pregnancies obese. This service evaluation investigates women’s motivations to lose weight postnatally, the weight loss achieved and impact on self-esteem.

Methods: online survey using quantitative questions to determine motivation and lifestyle behaviours related to post-natal weight management in women attending a commercial weight management organisation. Weekly weights confirmed from digitally recorded data.

Results: 1015 responded. Mean joining BMI was 33.3kg/m² ± 5.85 and when surveyed 30.5kg/m² ± 5.86, a change of -2.8 ± 0.1 kg/m² (p <0.01, 95% CI 2.76 – 3.11). 463 (45.7%) joined the groups between 6-26 weeks postnatal. Main motivators to lose weight were ‘to improve how I feel about my body size and shape’ (85.2%) and ‘improve self-confidence’ (76.6%) although only ‘to improve my health’ (65.6%) correlated with actual weight loss (0.114, p<0.01). Healthcare professional recommendation was less of a reason (6.5%). Improvements in self-confidence (77.6%), self-esteem (78.6%), wellbeing (85.2%) and body size/shape (70.1%) were reported.

Conclusion: Women chose to engage to improve self-confidence, feelings about their body shape and health. There is an opportunity for healthcare professionals to encourage women early after giving birth to engage in weight loss and this may improve outcomes.

Introduction

Of the four million women who give birth in the United States each year, almost 30% gain more weight than recommended by the Institute of Medicine guidelines (IOM, 2009). It has been established for many years that pregnancy may lead to subsequent weight problems. In the Stockholm Pregnancy and Women’s Nutrition (SPAWN) longitudinal study weight retention at the end of the postpartum year was the main predictor of being overweight 15 years later (Linné et al., 2004).

In the UK, 24% of women of reproductive age are now obese and the prevalence is predicted to increase (Butland et al., 2007). Maternal obesity increases health risks for mother and child both during and after pregnancy including hypertensive disorders, thromboembolism, gestational diabetes mellitus, induction of labour, prolonged delivery, caesarean section, postpartum haemorrhage and either low birthweight or macrosomia in the infant (Scott-Pillai et al, 2013). The more weight gained during pregnancy, the more likely
that it may be retained postpartum (Johnson et al., 2013). Women who enter a subsequent pregnancy overweight or obese also have a higher risk of adverse outcomes for themselves and/or their infants. Given the antenatal period involves regular contact with healthcare professionals, pregnancy may be considered as an opportune time to encourage weight management and prevent excess weight gain and thus prevent the vicious circle of weight accumulation across successive pregnancies and associated health risks. However the majority of obese women taking part in either semi-structured interviews or focus groups in London felt that pregnancy was not the best time to address weight (Khazaezadeh et al., 2011). General concerns about pregnancy and complications were felt to be the priority. Instead those interviewed reported that the motivation for weight management efforts would be higher following childbirth or prior to conception (Khazaezadeh et al., 2011). This finding is reinforced by Hodgkinson and colleagues (2014), where it was concluded that postpartum is a period where women need more support. UK NICE public health guidance (NICE, 2015) for supporting women after childbirth currently recommends health professionals use the 6–8-week postnatal check, or during a follow up appointment within the next 6 months, as an opportunity to discuss a woman's weight and to offer support and up-to-date advice about how to lose weight safely after childbirth. The NICE guidance recommends that during the follow-up appointments, breast feeding should be encouraged along with a healthy diet and building moderate-intensity physical activity into daily life. Women with a BMI>30kg/m² should be made aware of the increased risks that being obese poses to them and encouraged to lose weight via a structured weight-loss programme. Successful weight management in the period following child birth not only decreases the risk of entering further pregnancies overweight or obese, but also has the potential to reduce long term health risks such as heart disease, obesity, cancer, cardiovascular disease, type 2 diabetes (Scott-Pillai et al., 2013). It is widely accepted that new mothers experience huge changes in lifestyle once they have given birth and there is a tendency for new mums to put their health second to their child. Previous evidence has identified a number of barriers that prevent women from successfully engaging in postnatal weight management including lack of time, changes in body image, depression, lack of motivation, lack of support (Montgomery et al, 2011), but with little knowledge available as to what might increase motivation levels. Previous trials have assessed different approaches to weight management in the postnatal period but evidence regarding the most effective method is still lacking, with uncertainties surrounding the optimal method and recruitment stage (van der Plight et al., 2013). Group based commercial weight management (CWM) interventions are successful when implemented in the general population (Stubbs et al., 2011) and are currently recommended in the UK (NICE, 2014). The CWM organisation Slimming World (SW) has worked in partnership with the Royal College of Midwives to develop a policy to support women to manage their weight through all stages of pregnancy and postpartum, including whilst breast-feeding. The multi-component group-based programme, including behavioural change...
strategies, emphasises the importance of maintaining a healthy diet that is varied and flexible and being physically active, detailing the benefits to mother and baby.

The aim of this service evaluation was to investigate member motivations to lose weight postnatally, to consider the barriers and to determine the weight loss achieved and impact on wellbeing, confidence, self-esteem and body image through an online survey to continually improve the support offered.

Materials and Methods
An online survey was hosted on the group member’s only section of the SW website during September 2013 and advertised to current members who had given birth in the last 2 years. The survey was specifically developed for this service evaluation, with the intention being easy to complete and in language with which the participants in the SW programme were familiar.

The survey consisted of 36 questions, participants were asked to select from a drop-down menu to describe age, height, date of birth, parity, breast-feeding status, duration of membership and the amount of weight gained during the most recent pregnancy. Weight at the time of survey and on joining the programme was confirmed from the weekly weight data electronically recorded during group sessions as part of each participant’s membership. The same calibrated scales were used each week at a given group to record weight and weight change. Weight data was screened for outlying data and BMI changes were calculated using the confirmed weight data and self-reported heights.

The remainder of the questionnaire took the form of 5-point Likert scales, checkboxes or multiple choice where one or more options could be ticked as appropriate to determine motivation and lifestyle behaviours. The survey asked questions on motivations to join SW; changes in self-confidence, self-esteem, wellbeing, body shape and image before and since joining SW; how long after giving birth participants joined and did having a baby contribute to the decision; if breastfeeding; barriers to attending group; how easy it was to attend group and benefits from attending. The questionnaire was constructed and administered using Checkbox v4.4-Web Survey Software Copyright 2007, Prezza Technologies, Inc.

Participants
Members, irrespective of starting BMI, were only invited to complete the survey if they had given birth in the last 2 years and they had joined SW after having their baby (i.e. weren’t attending before becoming pregnant or whilst pregnant) and were not currently pregnant. Members were provided with online information about the study prior to partaking and were informed that by completing the survey they were voluntarily consenting to participate in the study. As part of the membership contract it is clear that unidentifiable personal weight data may be used for service evaluation purposes. The work was carried out in accordance with the principles set out in the Code of Ethics according to the Declaration of Helsinki (1964).
Statistical Analysis

Data analysis was performed using SPSS for windows (version 21, SPSS Inc., Chicago, IL) and Microsoft Excel (Microsoft Corp, Redmond, WA, USA). Descriptive data is summarised as frequency, mean ± standard deviation and percentages of participants responding to each question or sub-question where indicated. Data was analysed using paired t-tests to determine significant differences between weight reported at baseline and at the time of survey. Pearson’s r-Correlation, following adjustment for length of membership, was used to determine the relationship between motivations for weight loss and actual weight loss as a result of attending the weight management programme.

Results

Participant Characteristics

1015 women responded, mean age was 32.2 ± 5.1 (range 18-45) years. Mean parity was 1.8 ± 0.9, with a range between 1 and 5+ children.

Mean BMI (n=971) on joining was 33.3 ± 5.8 kg/m² and at the time of the survey 30.5 ± 5.9 kg/m² representing a BMI change of -2.8 ± 0.2 kg/m² (p <0.01, 95% CI 2.76 – 3.11). Weight change was significantly different between joining weight (baseline) and weight at time of survey, with an 8.6% mean weight loss reported (-7.9 ± 0.05kg) (p<0.01). Figure 1 shows the absolute weight changes dependent on the length of time the women were attending the weekly groups.

At the time of survey, current duration of membership varied between participants, 52.5% (533) reported being members for less than 3 months, 22.4% (n=227) members for 3-6 months, 15.7% (n=159) members for 7-12 months, 6.2% (n=63) members for 13-18 months and 3.2% (n=33) for 19 months to 2 years. Figure 1 illustrates a positive association between duration of attendance at the groups and mean amount of weight loss achieved up to 19-24months group membership.

Participants reported joining the weight management programme at a variety of time points after having their baby (Figure 2). 45.7% (n=463) started attending the weight management programme between 6-26 weeks postnatal and 23.4% (n=238) commencing > 1 year postnatally.

Over 75% (n=780) stated they had retained more than one stone (6.4kg). 60.9% (n=619) agreed that having a baby contributed to their decision to join SW with 51.3% (n=521) reporting that gaining weight during their pregnancy affected their self-esteem.

62.8% participants reported breastfeeding their most recent child (n=626), with the length of breastfeeding varying between responders, 10.4% (n=66) between 0-1 week, 14.9% (n=93) between 1-3 weeks, 16.9% (n=106) between 4-6 weeks, 11.5% (n=71) between 7-12 weeks, 7.6% (n=47) between 3-4 months, 4.9%
A sub-analysis was performed to compare current weight loss recorded from electronic records, with start date of joining the CWM programme (when adjusted for membership length) to identify if time of commencing a weight management programme affected weight loss outcomes. This analysis indicates that participants who engaged in the weight management service between 6-12 weeks postnatal, recorded greater weight-losses than those who engaged 41-52 weeks or >1 year postnatal (P<0.05) (Figure 3).

Motivations for weight loss

Participants were asked to select all applicable reasons why they decided to lose weight from a series of statements. The results indicate the main motivations were ‘to improve how I feel about my body size and shape’ (85.2%, n=865), ‘to improve my self-confidence’ (76.6%, n=777), and ‘to lose the weight I gained during my pregnancy’ (66.5%, n=675). Social pressure (8.6%, n=87), media pressure and celebrity culture (3.9%, n=40) were reported less frequently as a contributing factor to wanting to lose weight postnatally (Table 1). Reasons for deciding to lose weight were correlated with actual weight loss to determine if initial intentions to lose weight transferred into reported weight loss: only ‘to improve health’ was positively correlated, with ‘to lose baby weight before having another baby’ negatively correlated to weight loss (Table 1).

Wellbeing, self-esteem, confidence and body image

51.3% (n=521) of participants reported that weight gain during pregnancy had affected their self-esteem, rising to 82% (n=835) when retaining weight after pregnancy. Participants also reported how they felt their self-esteem, self-confidence, general wellbeing, confidence in body weight and size had been affected since joining CWM group and if they felt under social or media pressure to be an ideal weight following their pregnancy (Table 2). Participants reported improved self-confidence (77.6%), improved self-esteem (76.6%), improved sense of wellbeing (85.2%) and felt more confident in their body shape and size (70.1%). 39.6% of responding participants disagreed, 31.0% agreed and 29.4% neither agreed nor disagreed with the statement that they felt under social or media pressure to be an ideal weight following their pregnancy (Table 2).

Practicalities to taking part in the weight management programme

Participants were asked to report on the practicalities of attending the CWM group as a member after having a baby. Participants reported their group location (n=896, 88.2% agree quite a lot or very much) and time (n=846, 82.3% agree quite a lot or very much) was convenient for them. In addition, of those who took their children and or buggy’s to a Slimming World group, over 70% reported their group to be child (74.6%, n=564) and buggy friendly (73.3%, n=545).
Discussion

The aim of the current investigation was to determine the motivations for losing weight in the postnatal period, investigating the impact of social pressure and exploring the effect the weight management programme had on their health, confidence, self-esteem and body image, well-being and weight. Almost half of the respondents had been members for more than three months and significant mean weight losses were achieved. The results indicate obese women engage in weight management programmes at various times in the postnatal period, from as early as 6 weeks to over a year afterwards, with almost half of the respondents having been members for more than three months. The results suggest they want to lose weight and thus engage in the programme to improve how they feel about their body shape and size, their health, and their self-confidence and to lose the weight gained during their pregnancy. Whilst body shape and size, improving self-confidence and losing the weight gained during pregnancy were the strongest motivators reported, improving health was the only motivator which was significantly positively correlated to actual weight loss.

The results also indicate that a health professional recommendation currently plays a very minimal role in motivating a woman to lose weight. This could be as a result of health professionals not fully understanding the importance of postnatal weight management or there just being few opportunities where a health care professional is currently able to raise the issue and encourage women in the postnatal period to lose weight. Currently the emphasis in the postnatal period tends to be on the health and well-being of the infant (Montgomery et al., 2011). The low response rate highlights a need to further develop the role that health professionals play in influencing the health of postnatal women. Only 17.8% of the study participants claimed their motivation was to lose weight before having another baby.

The present survey reported 64.4% of members felt that joining a weight loss group at the right time was a motivator to lose weight postnatally. This suggests there may be an opportune time to initiate a weight management intervention in postnatal women. Current UK guidelines (NICE, 2010) recommend the 6-8 week postnatal check as an ideal time to raise the issue of excess weight retained post-pregnancy and offer support about how to lose weight. The findings from this evaluation support this recommendation.

Very few of the women cited media or social pressure as reasons for wanting to lose weight. This indicates that although celebrity pressure may be one reason for making women feel they need to lose weight after birth, it does not actually have a major influence on engagement in a weight loss programme.

It may be assumed (particularly by media or critics) that engaging in a weight loss programme may add to the pressures of postnatal women, inducing feelings of low self-esteem or guilt that they ‘need’ to lose weight. However the responses provided within the current survey demonstrate that the participants actually had low self-esteem before they joined a SW group which may have been related to excess weight gain during and weight retention after pregnancy and that their attendance and weight loss was associated with an increased self-esteem, self-confidence and wellbeing.
The reported breastfeeding rates at 6 weeks and beyond are higher than current reported UK rates at 58.5% vs 55% (NHS, 2015) which may reflect the additional benefits of social support and the improved self-esteem.

Previous evidence identified time and childcare as potential barriers to engaging in weight management services (Montgomery et al., 2011) but responses from participants in the current survey suggest that the weight management group location and time were convenient and child and buggy friendly.

**Limitations**

The survey relied upon retrospective self-reporting to establish the motivations for losing weight up to 2 years post birth and the survey only provides a snap shot of the potential motivators.

The self-reported increases in self-esteem and self-confidence may have been due to reasons other than weight loss.

Despite the high number of responders reported in this survey, it is likely that this sample is a specific, self-selected sub-group, who represent individuals that successfully engage in a commercial weight management organisation. As such the responses may not represent all postnatal women attempting to lose weight or the general population as a whole. The results therefore should be considered in the context in which they were obtained and the population in which they represent.

In addition, a number of key distinguishable participant characteristics were not collected including ethnicity and socio-demographic status. This information is of importance as social deprivation is highly associated with obesity in pregnancy and motivators and barriers to losing weight postnatally may differ in these populations. We were unable to adjust for the magnitude of weight gained during pregnancy in the statistical analyses.

**Implications for practice**

Healthcare professionals need to seek every opportunity possible to encourage women in the early postnatal period to lose weight, particularly if the woman is likely to become pregnant again. They should not be concerned about increasing anxiety levels as encouraging women to engage in certain CWM programmes in the postnatal period may increase levels of self-confidence and self-esteem. Encouraging women as early as six weeks after giving birth may help to improve weight loss outcomes in the postnatal period.

**Conclusions**

This survey indicates that postnatal women with an overweight and obese BMI engage in a group based weight management programme, due to more personal reasons around improving body shape and size, health and self-confidence rather than as a result of media or celebrity pressure. Participants reported concerns around retention of excess pregnancy weight gain affecting their self-esteem. However, engaging in a CWM programme, using a multi-component behavioural approach, resulted in significant weight loss and increases in self-esteem, self-confidence, wellbeing and body image. The groups were reported to be
very accessible in terms of location, time and child friendly. These results could have significant public health implications for promoting suitable weight management interventions for postnatal women.

Ethics; The work was carried out in accordance with the principles set out in the Code of Ethics according to the Declaration of Helsinki (1964).

Funding statement;
The study was funded by departmental resources.

AA, JB, CP and JL designed the study. AA and SH completed the data analysis. AA and SH prepared and CP and JL critically reviewed the manuscript.

Conflicts of interest; AA, alongside her academic position at the University of Nottingham also holds a consultancy position at Slimming World. The survey was hosted by Slimming World. All authors received some level of salaried payment by the organisation.

References;


Table 1: Reasons for wanting to lose weight and correlations with actual weight loss

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency (%)</th>
<th>Correlation with weight loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>To improve how I feel about my body size and shape</td>
<td>865 (85.2)</td>
<td>.031</td>
</tr>
<tr>
<td>To improve my self confidence</td>
<td>777 (76.6)</td>
<td>-.016</td>
</tr>
<tr>
<td>To lose the weight I gained during my pregnancy</td>
<td>675 (66.5)</td>
<td>.002</td>
</tr>
<tr>
<td>To improve my health</td>
<td>666 (65.6)</td>
<td>.114*</td>
</tr>
<tr>
<td>It felt like the right time to lose weight</td>
<td>654 (64.4)</td>
<td>.056</td>
</tr>
<tr>
<td>To lose baby weight before having another baby</td>
<td>181 (17.8)</td>
<td>-.095*</td>
</tr>
<tr>
<td>Social pressure made me feel I was expected to lose weight</td>
<td>87 (8.6)</td>
<td>-.004</td>
</tr>
<tr>
<td>A health professional recommendation</td>
<td>66 (6.5)</td>
<td>.063</td>
</tr>
<tr>
<td>Media pressure and celebrity culture made me want to lose weight</td>
<td>40 (3.9)</td>
<td>-.008</td>
</tr>
</tbody>
</table>

*correlation is significant at the 0.01 level (2tailed)
Table 2: Wellbeing, confidence, self-esteem and body image since joining Slimming World

<table>
<thead>
<tr>
<th>Frequency (%)</th>
<th>I have improved self confidence</th>
<th>I have improved self esteem</th>
<th>I have an improved sense of wellbeing</th>
<th>I have confidence in my body size and shape</th>
<th>I feel under social/media pressure to lose my baby weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>402 (39.6)</td>
<td>402 (39.6)</td>
<td>490 (48.3)</td>
<td>408 (40.2)</td>
<td>127 (12.5)</td>
</tr>
<tr>
<td>Slightly agree</td>
<td>386 (38.0)</td>
<td>396 (39.0)</td>
<td>375 (36.9)</td>
<td>303 (29.9)</td>
<td>188 (18.5)</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>202 (19.9)</td>
<td>193 (19.0)</td>
<td>131 (12.9)</td>
<td>234 (23.1)</td>
<td>298 (29.4)</td>
</tr>
<tr>
<td>Slightly disagree</td>
<td>18 (1.8)</td>
<td>15 (1.5)</td>
<td>12 (1.2)</td>
<td>42 (4.1)</td>
<td>156 (15.4)</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>7 (0.7)</td>
<td>9 (0.9)</td>
<td>7 (0.7)</td>
<td>28 (2.8)</td>
<td>246 (24.2)</td>
</tr>
</tbody>
</table>

Figure legends:

**Figure 1:** Weight loss (kg) by membership duration of the CWM programme at time of survey

**Figure 2:** Self-reported joining week of all participants attending the weight management programme postnatally.

**Figure 3:** Participant start date (week the participants joined the CWMP) and recorded weight loss (kg) adjusted for membership duration at the time of survey.