



Awareness, Beliefs and Perspectives Regarding Weight Retention and Weight Gain among Postpartum Women in India: A Thematic Analysis of Focus Group Discussions and In-Depth Interviews

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Abstract

Background and Aims The pregnancy weight is usually retained in the form of abdominal fat during the postpartum period. The willingness to lose weight is influenced by knowledge, attitude, beliefs and practices. This study aims to comprehend the awareness, beliefs and perspectives of postpartum women regarding their perceived factors, barriers and facilitators associated with post-pregnancy weight status.

Methods Overweight and obese postpartum women aged between 20 and 40 years and had delivered an infant in the last 2 years were recruited via convenience and purposive sampling techniques. The final sample comprised 27 participants with a mean age of 29.96 ± 4.50 years. Four focus group discussions and eight in-depth interviews carried out were audio-recorded and transcribed verbatim. Codes, sub-themes and themes were generated using *Atlas.ti 9* software.

Results Major themes identified were perceived factors causing postpartum weight retention/weight gain including social and cultural beliefs related to diet and exercise specifically associated with this period, perceived motivators and deterrents of weight loss including eagerness to lose weight and perceived facilitators and barriers to weight loss including intrinsic and extrinsic factors such as time, energy, evidence-based knowledge about diet and physical activity, family support and obligation to family's advice.

Conclusion The unique challenges and barriers associated with postpartum weight loss efforts should be taken into consideration by healthcare professionals and public health policy-makers to design strategies specific to postpartum women.

Keywords Postpartum · Weight retention · Obesity · Risk factors · Barriers · Qualitative research

Introduction

Childbearing women are at risk of excessive weight retention and weight gain during the postpartum period [1, 2]. Being predominantly in the form of abdominal fat, the postpartum weight retention and/or weight gain is considered to be more detrimental for a woman than weight gain during any other period of life [3]. This central fat deposition is an independent risk factor for cardiometabolic complications such as dyslipidaemia, type 2 diabetes and cardiovascular diseases [4], proposing the significance of postpartum weight management during this transition period.

Postpartum weight management is influenced by unique challenges that mothers have to face during this period such as infant care, lack of time, energy, motivation and support. Many women fail to shed the excessive weight retained and/or gained in the postpartum period despite the existence of

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various dietary and physical activity guidelines [5–8]. The success of postpartum weight loss and weight management highly depends on the awareness, beliefs and perspectives of postpartum women regarding the perceived factors, barriers and facilitators of postpartum weight loss.

Various perceived factors, motivators, facilitators and barriers of postpartum weight change may vary in different population groups depending on the socio-cultural milieu of that region [9–11]. There is a dearth of such knowledge in the Indian context and hence requires comprehensive scientific research. Therefore, this study was conducted to qualitatively explore and gain insights about the holistic perception of Indian postpartum women regarding their awareness, beliefs and perspectives about postpartum weight changes.

Materials and Methods

Study Design

This study was conducted using an exploratory qualitative study design comprising focus group discussions (FGDs) and in-depth interviews to learn about the perceived factors for weight retention and/or weight gain, and the barriers and facilitators experienced by women for their weight management during the postpartum period. Since the topic of interest is not well explored in the Indian context, FGDs and in-depth interviews will assist in gaining a variety of new and unknown perspectives related to the issue. The grounded theory method was used to collect and analyse data. The detailed methodology has been presented in Fig. 1 [12–14]. The brief note on FGDs has been provided in the supplementary Table 1.

Excessive weight is usually associated with stigma and shame and thus, can be a sensitive topic of discussion for overweight and obese postpartum women. It may restrain them from expressing unreservedly about their incapacities

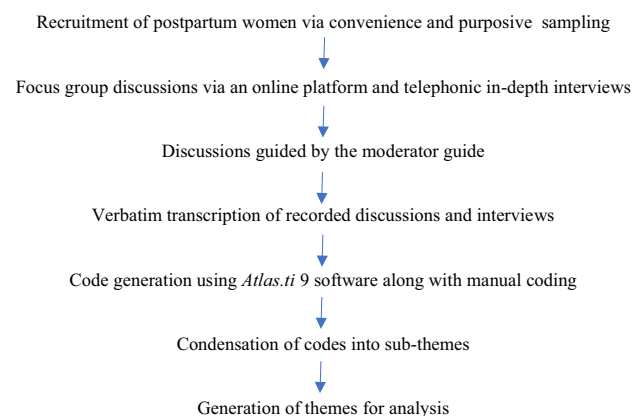


Fig. 1 Methodology

or difficulties in losing weight. Considering this, a congenial ambience was established and discussions and interviews were conducted by the first author (DK), PhD scholar, under the supervision and guidance of a female gynaecologist (AK) with 12 years' experience of dealing with postpartum women in maternity centres and tertiary care hospitals. Discussions were conducted online via Google meet platform and interviews were conducted via phone calls depending on the feasibility and convenience of participants. The "Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups" [15] was used to ensure a high-quality report. The study was approved by the Institute Ethics Committee with the reference number (IEC/236/3/2020).

Sampling Technique

The postpartum period was defined as the period up to two years post-delivery. Convenience and purposive sampling techniques were used for the participant selection. The Institute's records were accessed and a database was formed in May 2021 for Indian women who had given birth to a child in the last two years. The shortlisted women were contacted telephonically in June 2021 and informed about the aims and purpose of the study. Socio-demographic details (such as age, education status and employment status), information about their weight status and obstetric information were obtained from women providing the informed verbal consent to participate in the study. Purposive sampling technique was used to select overweight and obese women from different age groups and socio-economic status to ensure the principle of maximum diversity.

Sample Size Estimation

The data saturation approach commonly used in qualitative studies was used to determine the sample size. Following this approach, when the investigator felt that further recruitment of participants was not adding to the understanding of the study concept, the sample recruitment was ceased to $n = 27$.

Participant Characteristics

The age of the participants ranged between 21 and 36 years (Mean \pm SD: 29.96 ± 4.50 years). Most of the participants resided in metropolitan cities (51.85%), belonged to joint families (62.96%), were graduates (55.55%) and working (59.26%) (Table 1). 13 women had a normal pre-pregnancy body mass index (BMI), 12 were overweight and 2 were obese. The mean (SD) pre-pregnancy BMI was $22.95 (1.54)$ kg/m^2 whereas the mean (SD) present BMI was $25.59 (1.52)$ kg/m^2 . Majority of the participants had a caesarean delivery

Table 1 Socio-demographic, anthropometric and obstetric profile of participants ($n=27$)

Characteristics	n (%)
Age (years) (Mean \pm SD)	29.96 \pm 4.50
<i>Education</i>	
High school	1 (3.70)
Intermediate	2 (7.41)
Graduate	15 (55.55)
Post graduate	9 (33.33)
<i>Occupation</i>	
Housewife	11 (40.74)
Service	11 (40.74)
Self-employed	5 (18.52)
<i>Type of family</i>	
Nuclear	10 (37.04)
Joint	17 (62.96)
<i>Residence</i>	
Metropolitan city	14 (51.85)
City	9 (33.33)
Town	1 (3.70)
Village	3 (11.11)
Pre-pregnancy BMI (kg/m^2) (Mean \pm SD)	22.95 \pm 1.54
Present BMI (kg/m^2) (Mean \pm SD)	25.59 \pm 1.52
<i>Mode of delivery</i>	
Normal vaginal delivery	8 (29.63)
Instrumental vaginal delivery	1 (3.70)
Caesarean delivery	18 (66.67)
<i>Complications during pregnancy</i>	
Gestational diabetes	4 (14.81)
Anaemia	1 (3.70)
No complications	22 (81.48)
<i>Parity</i>	
Primiparous	14 (51.85)
Multiparous	13 (48.15)
<i>Postpartum period (till July'21)</i>	
2–6 months	8 (29.63)
6–12 months	10 (37.04)
12–18 months	5 (18.52)
18–24 months	4 (14.81)

(66.67%) with no complications during pregnancy (81.48%). Nearly equal representation of primiparous (51.85%) and multiparous (48.15%) women was reported. The investigators had no former contact with the participants, except from 12 women who had been the former patients of the secondary investigator (AK).

Study Setting and Data Collection

Eligible participants providing the informed consent were either involved in discussions or interviews in July 2021 based on their convenience and the order of recruitment. FGDs comprising four-five participants in each were conducted using an online video conferencing platform. The moderator sent the participation links to the participants to carry out FGDs. Each participant used their personal device to connect and join the video session. In-depth interviews were conducted telephonically. The moderator informed the participants about recording of the session and sought their verbal consent, which was audio-recorded as a part of the discussion/interview.

A pre-prepared semi-structured discussion guide comprising open-ended questions was used by the moderator to direct the discussion in order to understand the perspectives and beliefs of postpartum women on various aspects related to knowledge, attitude, practices, facilitators and barriers regarding the post-pregnancy weight changes (Table 2). Note-making was done simultaneously by the facilitator. At the end of the session, participants were asked to provide final additional comments. Four FGDs and eight in-depth interviews lasted for 40–45 and 15–20 min each, respectively. The recordings were then given a premeditated name to ensure anonymity and confidentiality.

All discussions were transcribed verbatim, translated to English and de-identified by removing any personal information. A copy of the transcript was shared with the participants for their additional comments or any corrections. None of the participants complemented their statements or requested for corrections.

Table 2 FGD/Interview semi-structured question guide

1. What changes have you witnessed in your daily routine during the postpartum period? (Opening question)
2. What is your opinion on weight retention during the post-pregnancy period? (Introductory question)
3. How important is it for you to return to your pre-pregnancy weight or have an ideal body weight? (Transition Question)
4. What are the various components that you think might be the reasons for weight changes during this period and are worth discussing? (Key question)
5. What are the factors that have been motivating or supporting you in achieving your pre-pregnancy weight? (Key question)
6. What are the factors that are making it difficult for you to maintain a healthy diet and be physically active? (Key question)
7. Finally, do you feel that there is anything specific to your experience that we have not discussed during our session? (Closing comment)

Data Analysis

Data analysis was carried out in August 2021. Inductive thematic analysis was done using the *Atlas.ti 9* software. The software automatically identified preliminary codes and quotations from the transcript excerpts. Moreover, discussions were read and re-read. The information relevant to the study was highlighted and labelled with codes by two data coders (DK and AM). The manual coding was done through an inductive process for profound comprehension to generate sub-themes and themes from the data.

Results

The beliefs and perspectives of postpartum women regarding their postpartum weight changes have been identified as five major themes presented in Table 3 and excerpts of participants involved in FGDs and in-depth interviews have been reported in Supplementary Table 2.

Perceived factors causing postpartum weight retention and/or weight gain: Postpartum mothers mentioned various perceived factors that might have been responsible for their post-pregnancy weight retention and/or weight gain. The

Table 3 Theme, sub-themes and codes extracted from FGDs and in-depth interviews

Themes	Sub-themes	Codes
Perceived factors causing postpartum weight retention/weight gain	Dietary intake and eating habits Physical inactivity Obligation to family's advice Sleep deprivation Breastfeeding Caesarean delivery	Quantity of food Quality of food Galactagogue consumption Period of confinement Dietary advice of family Relationship of sleep and weight status Increased appetite due to breastfeeding Caesarean delivery pitfalls
Perceived motivators of weight loss	Body image concerns General health well-being Prevention of future health complications	Appearance concerns Getting fit in old clothes Stay energetic Relief from pain associated with increased weight Avoidance of lifestyle related diseases such as diabetes, heart complications etc
Perceived deterrents of weight loss	Breastfeeding Body image satisfaction Motherhood phase	Breastfeeding during the first 6 months postpartum Appearance and body weight satisfaction Freely enjoy recent motherhood phase
Perceived facilitators of weight loss	Knowledge about lifestyle-related variables Family support	Information about the type of diet to be taken Information about exercises to be done Information about breastfeeding Support in healthy diet intake Support in sharing household responsibilities Support in sharing baby's responsibilities Support in indulging in physical activity
Perceived barriers to weight loss	Lack of knowledge Lack of time Lack of energy Lack of support Caesarean delivery Emotional eating	Lack of information about the type of diet to be taken Lack of information about initiation of physical activity Lack of information about physical activity regime to be followed Baby's responsibilities Household responsibilities Other child's responsibility Work commitments Fatigue associated with inadequate sleep Fatigue associated with fulfilling baby's responsibilities Fatigue associated with fulfilling household chores Fatigue experienced by working women Nuclear family Lack of joint family support Lack of support from healthcare professionals Pain and complications associated with caesarean delivery Stress associated with increased responsibilities Stress associated with lack of routine Stress associated with body image concerns

most stated perceived factor was the period of confinement (the first 40 days postpartum) involving specific quantity and quality of food intake as well as restrictions in the physical activity/exercise of mothers. Women during this period had excessive food intake, generally double or triple the quantity of their pre-pregnancy diet^a. In addition, the consumption of energy-loaded foods including high amounts of *ghee* was reported with the perception that this improves quality and quantity of breast milk produced^b. Galactagogues (fat- and sugar-rich foods considered to increase milk production) were reportedly consumed by many participants mainly in the form of *laddoos*^{c,d}. Physical inactivity during this period due to cultural and traditional beliefs of families was also reported by the majority of the participants^e. Despite their own reservations about consuming high-calorie diets and having restrictions on their physical activity, many mothers reportedly abided by the family's advice^f. Mothers shared their perception that breastfeeding increases their appetite, hence the higher food intake and weight gain^g. They believed the notion that a caesarean delivery leads to retention of pregnancy weight^{h,i}. Apart from this, sleep deprivation was also cited as one of the factors for weight gain^j.

Perceived motivators of weight loss: Some participants were apparently motivated to lose weight by factors such as eagerness to look good^k and get fit in old clothes^l. Besides, general well-being such as staying fit and energetic^{m,n,o} and prevention of development of lifestyle-related complications^p also motivated some participants to achieve ideal body weight.

Perceived deterrents of weight loss: Some participants reported no intention of initiating weight loss. The main factors were the current breastfeeding status, satisfaction with one's body image and a recent episode of motherhood. The participants who were presently breastfeeding their infants expressed concern that efforts to lose weight might reduce their breast milk formation^{q,r}. The mothers satisfied with their body weight and body image were not interested in losing weight^s. Some participants, especially the primiparous mothers, did not desire to lose weight as they wished to cherish their recent motherhood phase avoiding any hustle in weight loss attempts^t.

Perceived facilitators of weight loss: The weight loss facilitators can be classified into intrinsic and extrinsic factors. Intrinsic factors are related to the mother's own self including her knowledge about the diet and physical activity. Mothers who had information about the diet (quality and quantity)^u and physical activity (initiation and exercise regime)^{v,w} to be followed were able to initiate and make weight loss attempts. Extrinsic factors are related to the mother's environment such as her family. Family support either in the form of sharing household responsibilities^x or sharing the baby's responsibilities^y so that the mother gets time for herself were reported as perceived facilitators

by many participants. Moreover, participants reported that their family's encouragement to consume healthy foods^z and indulge in physical activity^{aa} assisted them in making weight loss efforts.

Perceived barriers to weight loss: Nearly all mothers reported lack of knowledge about the type of diet to be followed specifically in the postpartum period^{ab, ac}. Moreover, lack of information about the time of initiation and the exercise regime to be followed specifically in this period was reported as the major barrier in initiating weight loss attempts^{ad, ae}. Lack of time was another barrier as most of the mothers reported that the majority of their time was spent in infant care^{af}. The remaining time was spent doing household chores by the homemakers^{ag} and going to work by working mothers^{ah}. Mothers reported lack of energy, and tiredness that they barely have the strength and motivation to engage in weight loss attempts^{ai, aj, ak, al}. Participants living in a nuclear family expressed deprivation of family support in sharing infant's as well as household responsibilities^{am, an}. Moreover, some participants living in a joint family stated that despite staying with their family, they lacked the support of significant others in meeting high infant's needs, especially at night-time and fulfilling household responsibilities^{ao, ap}. Many mothers expressed the lack of constructive advice from a healthcare professional (doctor/dietician) at the time of discharge from the hospital that would otherwise have assisted in weight loss^{aq}. Caesarean delivery was yet another concerning barrier explored in weight loss attempts^{ar}. Besides, multiparous participants also reported time spent taking care of the other child/children^{as, at}. Apart from this, the stress associated with body image concerns, meeting high infant's demands, family responsibilities and other responsibilities has often led some of the mothers to resort to emotional eating where they end up eating high-calorie foods to overcome the stress^{au, av, aw}.

Discussion

Postpartum obesity is a public health issue. It is a matter of serious concern as it can impact various aspects of maternity care [16]. The management of obesity is highly dependent on an individual's willingness to bring about a behaviour change. This behaviour change depends on the knowledge, attitude and practices which is further guided by the source of information and socio-cultural myths and practices [17]. While exploring the knowledge, attitude, beliefs and perspectives of mothers regarding their weight status in the postpartum period, this study revealed certain noteworthy facts.

Indian mothers usually lack awareness about postpartum weight management [10]. New mothers are so much concerned about infant care that they blindly follow various

socio-cultural practices that might lead to their own weight gain and associated complications. A common socio-cultural practice of “period of confinement” involving high energy intake and restricted physical activity is widely followed. Similar findings have been reported in the studies conducted in other Asian countries [9, 18] where the period of confinement is followed earnestly. The study further unravelled that even if few women have awareness about their weight status in the post-pregnancy period, they do not make serious efforts for weight loss till six months after delivery as they are deeply involved in their baby’s care and nutrition. Only after six months, they initiate some inconsistent dietary and physical activity measures and this might cost them their health in the future, sooner or later.

The postpartum period is one of the neglected stages of a woman’s life. The weight loss attempts during this period are driven by various barriers and facilitators. There is not only a lack of information regarding the diet and exercise regime to be followed specifically during this period but also an absence of evidence-based counselling from healthcare professionals to these women. In the absence of structured professional advice, women are left with no other option than to follow the advice of their elders and land up consuming calorie-dense foods and restricting their physical activity. Similar findings have been reported by some other studies [10, 11]. Besides, there are a few mothers who have some knowledge related to diet and physical activity, but are confronted with challenges such as lack of time, energy and support specifically required during this period [10, 11]. On the other hand, their own willingness, appropriate knowledge, efficient time management skills and family support can act as supporting pillars for effective weight loss among these women.

Implications for Practice and/or Policy

The findings of this study reveal that this crucial phase in women’s lives (postpartum period) is accompanied by various unique challenges. Hence, healthcare professionals and policymakers should look at the antenatal period as an opportune time to raise awareness and information among women about their postpartum weight management. Second, the counselling team should be expertly trained to effectively counsel these women and possibly their family members, especially in an Indian setting where family values are deeply rooted and opinions (and myths) of elders are difficult to ignore. Third, individual counselling, group counselling as well as mass media campaigns should be organised to disseminate evidence-based information about postpartum weight management to women along with their families. Furthermore, policymakers and healthcare professionals should use various Indian guidelines [5–7, 19, 20] available to design a realistic weight management module

specifically for postpartum mothers addressing the lack of information and unique challenges markedly associated with this period.

Strengths and Limitations

The strength of the study lies in its attempt to explore realistic information about the beliefs and perspectives of Indian postpartum women from different socio-economic, educational and occupational backgrounds regarding their postpartum weight retention and/or weight gain. The findings of this study can be used to develop questionnaires to further carry out cross-sectional surveys to assess risk factors, facilitators and barriers of postpartum weight retention. However, the study has certain limitations such as participants are mostly from the North Indian region and higher recruitment of educated and working women from metropolitan cities, probably due to COVID-19 restrictions. Therefore, the observations may not be generalised. Future studies can be conducted recruiting participants of varied educational, occupational and socio-economic backgrounds from various other regions of the country to provide a holistic view of beliefs and perspectives of postpartum women regarding risk factors, facilitators and barriers associated with postpartum weight.

Conclusion

Weight management in the postpartum period has unique challenges. Individualised weight management modules should be developed considering various barriers and facilitators associated with this period for effective postpartum weight management.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s13224-022-01644-9>.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Research Involving Human Participants and/or Animals The study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Institute Ethics Committee with the reference number (IEC/236/3/2020). The study involving human participants was carried out in accordance with the ethical standards of the institutional research committee.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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