



A Cross-Sectional Survey of 505 Postpartum Women to Assess Lifestyle-Related Behaviour, Barriers, and Myths Affecting Postpartum Weight Retention and Its Management

Archana Kumari¹ · Piyush Ranjan² · Wareesha Anwar³ · Divjyot Kaur³ · Ashish Datt Upadhyay⁴ · Anita Malhotra⁵ · Naval Kishore Vikram²

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Abstract

Background/Purpose This study aims to assess lifestyle-related factors such as diet, physical activity and sleep along with common myths, beliefs, and barriers to a healthy lifestyle and resultant postpartum weight retention. It has also explored the association of the aforementioned factors with socio-demographic variables.

Methods A cross-sectional survey was conducted using a comprehensive pre-validated questionnaire on a convenience sample of postpartum women using a telephonic interview schedule.

Results A total of 505 postpartum women were recruited with median postpartum weight retention of 5 kg. More than half of the participants had incorrect dietary practices with less than one-tenth of women indulging in low/moderate-intensity physical activity. Postpartum women had poorer diet ($p < 0.05$) and sleep ($p < 0.01$) in the initial phase postpartum as compared to late postpartum. These women were also less physically active in the initial months and as the postpartum period progressed their physical activity also improved significantly ($p < 0.001$). Socio-demographic variables such as socio-economic status, education, and employment status were significantly associated with unhealthy lifestyle practices. Common barriers were lack of knowledge, time constraints, lack of childcare support and cultural myths and beliefs.

Conclusion The findings of the study will help in developing a comprehensive women-centric weight management module focusing on practical guidelines for lifestyle, breastfeeding and other confounding factors associated with postpartum weight management.

Keywords Postpartum period · Overweight · Obesity · Lifestyle · Weight management

Dr. Archana Kumari (MS) is an Assistant Professor; Dr. Piyush Ranjan (MD) is a Professor; Wareesha Anwar (M.Sc) is a Ph.D. scholar; Divjyot Kaur (M.Sc) is a Ph.D. Scholar; Dr. Ashish Datt Upadhyay (Ph.D.) is a Scientist; Dr. Anita Malhotra (Ph.D.) is a Professor; Dr. Naval Kishore Vikram (MD) is a Professor.

✉ Piyush Ranjan
drpiyushdost@gmail.com

¹ Department of Obstetrics and Gynaecology, AIIMS, New Delhi, India

² Department of Medicine, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, India

³ Scholar, Department of Home Science, University of Delhi, New Delhi, India

⁴ Department of Biostatistics, AIIMS, New Delhi, India

⁵ Department of Home Science, Laxmi Bai College, University of Delhi, New Delhi, India

Introduction

The proportionately high prevalence of obesity among women of the reproductive age group can be attributed to the physiological changes associated with body composition during pregnancy [1]. Postpartum weight retention (PPWR) can be defined as the difference between body weight at pre-pregnancy and after delivery [2]. This weight retention mostly occurs in the form of visceral fat, thus increasing the risk of metabolic complications like diabetes, hypertension, and coronary artery diseases. PPWR is influenced by various non-modifiable and modifiable risk factors [3, 4].

Among these various risk factors, lifestyle-related behaviours play an important role and vary across different cultures and countries [5–7]. In western countries, there is an increased awareness of the consumption of a healthy diet and the initiation of timely physical activity. But, in various

Asian countries including India, unhealthy dietary habits and restrictive physical activity are promoted for healing and recovery following delivery [8]. Such practices do more harm than good and put the postpartum women for an upward weight trajectory in the coming years of their life [9].

There is a paucity of data on the role of lifestyle-related factors and their role in postpartum weight retention in India. This study aims to cohesively assess lifestyle-related factors such as diet, physical activity, and sleep along with common myths, beliefs, and barriers to a healthy lifestyle. It also aims to identify the relation of various socio-demographic variables with the above-mentioned factors.

Methods

Study Design A cross-sectional survey was done using a validated questionnaire to assess the lifestyle-related behaviours, barriers, and myths in the postpartum period.

Locale The study was conducted in the Department of Medicine and Obstetrics and Gynaecology at a tertiary care centre in India.

Ethical Statement The study was done as per the Declaration of Helsinki with prior approval from the Institute Ethics Committee with reference no. IEC/236/3/2020.

Survey Questionnaire A pre-designed, validated, and reliable questionnaire was used with a Cronbach's alpha of 0.79 [10]. The survey questionnaire comprehensively assessed the lifestyle-related behaviours, barriers, and myths in the postpartum period. It has three sections. Section one assessed the socio-demographic profile, while section two assessed the obstetric information of the participants. Section three comprised thirty-six items focused on risk factors, facilitators and barriers to a healthy lifestyle in the postpartum period. Among these, questions 1 and 2 assessed the perceptions related to body weight, questions 3–13 assessed the eating behaviour and associated barriers to healthy eating and questions 14–25 assessed the physical activity and associated barriers to it, while questions 26–29 focused on sleep pattern and lastly questions 30–36 assessed the common beliefs/myths associated with the postpartum period. A five-point Likert scale was used to rate the lifestyle practices such as diet, physical and physical activity assuming equal distance between scoring options, while barriers were rated on a 1 (strongly agree) to 5 (strongly disagree) scale based on the difficulty posed by each one of them.

Study Participants The study participants were recruited from the delivery records of the Department of Obstetrics and Gynaecology. Records from 1 January 2021–31 January 2022 were taken into account to formulate a list of participants eligible for data collection.

Data Collection The data were collected by trained investigators (WA and DK) involved in the development and validation of the questionnaire. Postpartum women with known cases of endocrine disorders including Cushing's syndrome or history of long-term steroid intake or multiple pregnancies were excluded from the study. The data were collected in the form of an online telephonic interview from the retrieved list of participants ($n = 956$) from the hospital delivery records. Out of these participants 348 contact numbers were either invalid, unavailable, not reachable, or unanswered. Sixty-four refused to give consent or declined to answer about their personal details such as income and education. Eighteen participants lost their offspring at some time in their postpartum. The remaining ($n = 526$) participants gave informed written consent which was filled in the google forms along with responses to the interview.

Sample Size The sample size was calculated using a single population proportion formula, by considering the following assumption, $P = 75\%$ proportion of postpartum weight retention, $d =$ margin of error taken as 5%, $Z_{\alpha/2} = 2.576$ at 99% confidence level, and the calculated sample size was 500 [4].

Bias The study may have a possibility of recall, response, and social-desirability bias.

Data and Statistical Analysis The sample characteristics, categorical variables and survey responses are presented as frequency and percentages, while the continuous data have been reported as mean and standard deviation and/or median/interquartile range. The comparison of lifestyle-related scores between the groups was done by Wilcoxon rank-sum test (two-groups) and Kruskal–Wallis test followed by multiple comparisons using Dunn's test with the Bonferroni test. The statistical analyses were performed by using STATA/SE version 14.2 (StataCorp LP, College Station, TX, USA). P value ≤ 0.05 was considered statistically significant for the analyses.

Results

Participants

A total of 526 interviews were conducted. After data purification, incomplete or ineligible entries were removed and the data of 505 participants were subjected to final data analysis.

Socio-Demographic and Obstetric Profiles of the Participants

The majority of the participant's ages ranged from the late twenties to early thirties. Three-fourths of the participants were homemakers, belonged to metropolitan areas and were from a middle socio-economic background. There was an

almost equal distribution of vaginal (50.9%), and caesarean deliveries (47.7%) with (58.1%) being primiparous and (41.9%) being multiparous. The detailed socio-demographic and obstetric profile is given in Table 1.

Postpartum Weight Gain and Retention

The proportion of underweight and normal-weight women as per Asian BMI cut-offs (as shown in Table 1) was reduced by almost half in the postpartum period. Such women were shifted to overweight and obese categories, leading to rise in the proportion of obese women in postpartum (52.4%) as compared to pre-conception (29.5%). The median postpartum weight retention was 5 kg, the 25th percentile was 2 kg, and the 75th percentile was 8 kg.

Perception Regarding Weight Status

As depicted in Table 2, there was discordance in the perception of self-reported present weight status and the actual weight status of the postpartum women ($p < 0.001$). This indicates that postpartum women especially from the overweight and obese categories underestimated their weight status.

Lifestyle-Related Behaviours (Diet, Physical Activity, Sleep)

The current lifestyle-related behaviour of the participants is depicted in Table 3. More than half of the participants did not have optimum dietary habits. Even though nine out of ten were participating in daily household chores, only one out of ten were participating in low-intensity in moderate-intensity physical activities. More than three-fourths of the participants were sleeping < 7 h, out of which (18.7%) reported poor quality of sleep and occasional childcare support at night (35.3%).

Barriers to a Healthy Lifestyle

Three-fourths of the participants reported that they have insufficient knowledge about appropriate diet and physical activity to be followed postpartum due to which they could not engage in conscious efforts such as following a diet plan or physical activity prescription (as shown in Table 3). Participants reported lack of time (68.4%) and recommendation of high-calorie foods (41.8%) by family as the major reasons for faulty dietary practices. Apart from this, (63%) reported that they cannot engage in physical activity due to excessive body ache/backache.

Table 1 Socio-demographic profile of participants ($n = 505$)

Characteristics	Values (%)
<i>Age</i>	
18–25 years	102(20.2)
25–35 years	365(72.2)
> 35 years	38(7.52)
<i>Education</i>	
Profession or honours	148(29.4)
Graduate	222(43.9)
Intermediate/diploma	63(12.5)
Up to matriculate	72(14.3)
<i>Occupation</i>	
Housewife	361(71.5)
During COVID, working from home	12(2.4)
Going to work as usual	25(4.9)
Currently taken a break from work	107(21.2)
<i>Residence</i>	
Metropolitan	380(75.2)
City	84(16.6)
Town	31(6.1)
Village	10(1.9)
<i>Type of family</i>	
Nuclear	202(40)
Joint	303(60)
<i>Socio-economic status (SES)</i>	
High SES	61(12.1)
Middle SES	385(76.2)
Low SES	59(11.7)
<i>Parity</i>	
Primiparous	293(58.1)
Multiparous	212(41.9)
<i>Mode of delivery</i>	
Vaginal	257(50.9)
Instrumental	8(1.4)
Caesarean	240(47.7)
<i>Postpartum period</i>	
0–6 Months	437(86.5)
≥ 6 Months	68(13.5)
<i>Pre-Pregnancy BMI</i>	
Underweight	53(10.5)
Normal	206(40.8)
Overweight	97(19.3)
Obese	149(29.5)
<i>Present BMI</i>	
Underweight	22(4.3)
Normal	128(25.3)
Overweight	90(17.8)
Obese	265(52.4)
<i>Postpartum weight retention (PPWR)</i>	
No retention	81(16.03)
0–5 kg	211(41.7)
5–10 kg	148(29.3)

Table 1 (continued)

Characteristics	Values (%)
≥ 10 kg	65(12.8)
<i>Presently breastfeeding</i>	
Yes	469(92.9)
No	36(7.1)
<i>Exclusive breastfeeding</i>	
Yes	332(65.8)
No	173(34.2)
<i>Perception related to weight status</i>	
My weight is less	59(11.6)
My weight is about right	174(34.4)
My weight is slightly more	135(26.7)
My weight is significantly more	137(27.1)
<i>Readiness to initiate weight loss</i>	
Already Initiated	51(10.1)
Planning to initiate in 1–2 weeks	19(3.8)
Planning to initiate in 1–2 months	133(26.3)
Planning to initiate in 3–4 months	62(12.2)
No intention to initiate in near future	240(47.5)

Common Beliefs/Myths Associated with the Postpartum Period

As shown in Table 3, almost half of the participants believed that overeating will help in providing adequate nutrition to the child and reducing calories in the diet will lead to low milk production. Three-quarters of the participants were convinced that excessive galactagogues consumption during the first 40 days post-pregnancy leads to higher milk formation and completing 40-day rest after delivery is essential.

Comparison of Lifestyle-Related Behaviour Across Various Socio-demographic Variates

In the comparison of lifestyle-related behaviour with various socio-demographic variates (Tables 4, 5), it was found that participants residing in rural areas were more physically active as compared to the ones residing in urban areas

($p < 0.05$), and they had a larger number of myths and pre-conceived beliefs about healthy lifestyle behaviour ($p < 0.05$), whereas participants having higher education ($p < 0.001$) and belonging to higher socio-economic status ($p < 0.001$) had a better diet as compared to the ones with lower education and socio-economic status.

Variability in Lifestyle Behaviour Across Postpartum Period

Postpartum women (as depicted in Table 6) had a poorer diet ($p < 0.05$) and sleep ($p < 0.01$) in the initial phase (0–3 months) of postpartum as compared to late postpartum (> 6 months). These women were also less physically active in the initial months and as the postpartum period progressed their physical activity also improved significantly ($p < 0.001$).

Discussion

Pregnancy and postpartum period increase the rates of overweight and obesity in women. These rising trends can be attributed to demographic factors, lifestyle, myths, and various barriers faced by them. Most of these factors are modifiable but are not appropriately addressed [11]. This study was undertaken to comprehensively assess the above-mentioned factors and various insightful findings emerged through it. Firstly, postpartum women had a misperception about their weight status. The women in overweight and obese category were more likely to perceive themselves as normal or just overweight and felt that there was no need to initiate weight loss. As weight perceptions are an important indicator of weight loss-related behaviour (initiation and sustenance of weight loss), thus such perceptions can hinder these women to achieve ideal body weight and may lead to accumulation of weight for later years of life [3]. It is important to note that this retained weight will also affect the metabolic programming and body composition of these women and will further increase the disease risk [1].

Table 2 Difference between actual and perceived weight status

Actual BMI category	Perception about weight			
	My weight is slightly less	My weight is about right	My weight is slightly more	My weight is significantly more
Underweight	12(54.6)	08(36.4)	01(4.5)	01(4.5)
Normal	36(28.1)	71(55.4)	18(14.1)	03(2.4)
Overweight	07(7.8)	43(47.7)	30(33.3)	10(11.2)
Obese	04(1.5)	52(19.6)	36(32.4)	123(47.0)
Marginal homogeneity (Stuart–Maxwell) $\chi^2 = 90.15$, ($P < 0.001$)				

Table 3 Frequency distribution of responses for lifestyle practices of postpartum women

Lifestyle-related behaviour	Responses on Likert Scale				
	1 (Lowest score)	2	3	4	5 (Highest score)
<i>Dietary habits</i>					
^a Consumption of regular meals (Three major and two–three minor meals)	51(10.1)	39(7.7)	166(26.3)	129(25.5)	120(23.8)
^a Consumption of protein-rich foods in the daily diet	35(6.9)	46(9.2)	173(34.3)	130(25.5)	121(23.9)
^a Consumption of 4–5 servings of fruits and vegetables in daily diet	84(16.6)	78(15.4)	180(35.6)	89(17.6)	74(14.6)
^a Consumption of HFSS (high fat, sugar, and salt) food products	95(18.8)	156(30.9)	118(23.3)	75(14.8)	61(12.08)
<i>Physical activity</i>					
^b Participation in daily household chores	57(11.3)	5(0.9)	26(51.1)	37(7.4)	300(75.3)
^c Participation in low-intensity exercises	360(71.3)	50(9.9)	74(14.7)	11(2.2)	10(1.9)
^c Participation in moderate-intensity exercises	446(88.4)	27(5.4)	22(4.4)	5(0.9)	5(0.9)
^d Time spent in sedentary activities	138(27.4)	115(22.8)	222(24.2)	98(19.5)	32(6.4)
<i>Sleep</i>					
^e Quantity of Sleep	142(28.8)	268 (53.1)	95 (18.9)	–	–
^f Quality of Sleep	13(2.6)	81(16.1)	197(39.1)	193(38.3)	21(4.2)
^g Childcare Support at night	73(14.5)	85(16.9)	178(35.3)	127(25.2)	42(8.4)
<i>Healthy eating barriers</i>					
^h Increased intake due to breastfeeding	195(38.7)	187(37.1)	12(2.4)	99(19.6)	12(2.4)
^h Insufficient knowledge about dietary habits to be followed in postpartum	107(21.2)	236(46.8)	17(5.4)	118(23.4)	17(3.4)
^h Inability to make conscious dietary efforts for weight loss	90(17.9)	272(53.9)	51(9.0)	93(18.5)	23(4.5)
^h Lack of time due to childcare and family responsibilities	138(27.4)	206(40.8)	9(1.8)	117(23.2)	35(6.9)
^h Mismatched eating habits of the family	60(11.9)	184(36.4)	10(1.9)	155(30.6)	96(19.1)
^h Bound to eat high-calorie food due to family advice	75(14.9)	136(26.9)	19(3.8)	192(38.1)	83(16.5)
^h Overeating due to stress, anxiety or to just feel better	62(12.3)	65(12.9)	15(2.9)	26.5(52.5)	98(19.5)
<i>Physical activity barriers</i>					
^h Insufficient knowledge about physical activities to be done in this period	167(33.1)	239(47.4)	9(1.8)	76(15.0)	14(2)
^h Inability to make conscious efforts for physical activity	114(22.6)	279(55.3)	26(5.2)	67(13.3)	19(3.8)
^h Unable to engage due to body pain/ backache, etc.	91(18.1)	225(44.6)	17(3.4)	118(23.4)	54(10.7)
^h Lack of time due to childcare and family responsibilities	146(28.9)	244(48.4)	10(1.9)	75(14.9)	30(5.1)
^h Lack of social support for physical activity	39(7.8)	51(10.1)	8(1.6)	286(56.7)	121(23.9)
^h Lack of parks or gyms	36(7.2)	26(5.6)	6(1.2)	289(57.3)	148(29.4)
<i>Myths</i>					
^h Overeating helps in providing adequate nutrition to child	124(24.6)	124(24.6)	16(3.1)	215(42.5)	26(5.2)
^h Excessive galactagogue consumption during the first 40 days post-pregnancy leads to higher milk formation	164(32.5)	195(38.6)	29(5.8)	104(20.6)	13(2.6)
^h Reducing calories in diet may lead to reduced milk production	133(26.4)	228(45.2)	40(7.9)	86(17.1)	18(3.5)
^h Consumption of excessive ghee in the last trimester of pregnancy	119(23.6)	99(19.6)	14(2.8)	231(45.9)	42(8.4)
^h Physical activity may affect the breast milk composition	85(16.9)	31(6.2)	75(14.9)	231(45.8)	83(16.5)
^h Breastfeeding will automatically help in weight loss	146(28.9)	152(30.2)	50(18)	137(27.2)	20(3.9)
^h 40-day rest after delivery is essential	213(42.2)	156(30.8)	18(3.6)	112(22.2)	6(1.3)

^a 1(not routinely), 2(one to two times per week), 3(three to four times a week), 4(five to six times a week), 5(daily)

^b 1(not routinely), 2(1–2 days a week), 3(3–4 days a week), 4(5–6 days a week), 5(almost daily)

^c 1(not at all), 2(up to 15 min), 3(15–30 min), 3(30–45 min), 4(45 min or more)

^d 1(less than 2 h), 2(2–4 h), 3(4–6 h), 4(6–8 h), 5(more than 8 h)

^e 1(< 5 h), 2(5–7 h), 3(> 7 h)

^f 1(excellent), 2(good), 3(average), 4(poor), 5(very poor)

^g 1(always), 2(mostly), 3(sometimes), 4(rarely), 5(never)

^h 1(strongly agree), 2(agree), 3(neither agree nor disagree), 4(disagree), 5(strongly disagree)

Table 4 Comparison of lifestyle-related behaviour with socio-demographic in the postpartum period

	Residence				Overall and pairwise variance**	Education				Overall and pairwise variance**
	(1) Metropolitan*	(2) City*	(3) Town*	(4) Village*		(1) Profession or honours*	(2) Graduate*	(3) Intermediate or diploma*	(4) High school certificate*	
Dietary habits	31 (16–51)	31 (15–47)	30 (24–48)	31 (26–37)	N.S [#]	32 (15–51)	31 (16–48)	30 (16–44)	30 (21–40)	($P < 0.001$) and 1 versus 2 ($P < 0.05$), 1 versus 3 ($P < 0.01$), 1 versus 4 ($P < 0.001$), 2 versus 4 ($P < 0.001$)
Physical Activity	31 (14–53)	31.5 (19–45)	32 (22–44)	34.5 (26–47)	($P < 0.05$ and 1 versus 4 ($P < 0.05$)) 2 versus 4 ($P < 0.05$) 3 versus 4 ($P < 0.05$)		31 (15–53)	31 (18–45)	31 (14–46)	N.S
Sleep	10 (4–15)	10 (4–14)	11 (6–16)	9 (8–12)	N.S	10 (6–16)	10 (4–15)	10 (5–14)	10 (6–14)	($P < 0.05$) and 2 versus 3 ($P < 0.05$)
Myths	19 (7–35)	19 (7–29)	10 (11–28)	22 (11–27)	($P < 0.05$) and 1 versus 4 ($P < 0.01$) 2 versus 4 ($P < 0.05$)	19 (7–30)	20 (7–35)	19 (7–25)	17.5 (7–28)	N.S

*Median (minimum–maximum)

**Kruskal–Wallis test followed by Dunn's pairwise comparison with Bonferroni test

#N.S Not significant

Table 5 Comparison of lifestyle-related behaviour with socio-demographic in the postpartum period

	Socio-economic status			Overall and Pairwise Variance**	occupation				Overall and pairwise variance**
	(1) High*	(2) Middle*	(3) Low*		(1) Housewife*	(2) During COVID, working from home*	(3) Going to work as usual*	(4) Currently taking a break from work*	
Dietary habits	35 (18–50)	31 (15–51)	29 (20–39)	$P < 0.001$ and 1 versus 2 ($P < 0.001$), 1 versus 3 ($P < 0.001$), 2 versus 3 ($P < 0.001$)	31 (16–48)	33 (23–48)	31.5 (15–48)	33 (19–51)	$P < 0.001$ and 1 versus 4 ($P < 0.001$)
Physical activity	31 (14–53)	31 (15–53)	32 (20–46)	N.S [#]	31 (14–53)	32 (19–45)	31 (23–44)	31 (15–53)	N.S
Sleep	10 (4–16)	10 (5–16)	10 (4–14)	N.S	10 (4–16)	10.5 (6–13)	9 (6–13)	11 (6–15)	$P < 0.05$ and 1 versus 4 ($P < 0.01$) 3 versus 4 ($P < 0.05$)
Myths	18 (7–30)	19 (7–35)	20 (7–28)	N.S	19 (7–35)	21 (7–28)	18 (7–26)	21 (7–30)	$P < 0.05$ and 1 versus 4 ($P < 0.05$) 3 versus 4 ($P < 0.05$)

*Median (minimum–maximum)

**Kruskal–Wallis test followed by Dunn’s pairwise comparison with Bonferroni test

[#]N.S Not significant

Table 6 Variability in lifestyle-related behaviour across postpartum period

Lifestyle-related behaviour	Postpartum Months			Overall and pairwise variance**
	(1) 0–3 months*	(2) 3–6 months*	(3) > 6 months*	
Dietary habits	30 (16–50)	32 (16–51)	32(15–48)	$P < 0.05$ and 1 versus 2 ($P < 0.05$) 1 versus 3 ($P < 0.05$)
Physical Activity	29 (14–44)	32(15–53)	33.5(21–49)	$P < 0.001$ and 1 versus 2 ($P < 0.001$) 1 versus 3 ($P < 0.001$) 2 versus 3 ($P < 0.05$)
Sleep	10 (4–15)	10 (5–16)	09 (4–14)	$P < 0.01$ and 1 versus 2 ($P < 0.05$) 1 versus 3 ($P < 0.01$) 2 versus 3 ($P < 0.01$)

*Median (minimum–maximum)

** Kruskal–Wallis test followed by Dunn’s pairwise comparison with Bonferroni test

Secondly, more than half of the study sample had an inadequate diet, with irregular meal patterns and low dietary diversity. They had lower consumption of fruits and vegetables and protein-rich foods. The plausible reason for this could be the notion of avoiding fruits and vegetables due to perceiving them as cold foods [13, 14]. Also, India has relatively lower consumption of protein-rich foods owing to the predominance of a cereal-based diet and consumption

of vegetarian sources of protein [15, 16]. Moreover, factors like lack of adequate knowledge, lack of time and the postpartum norms prevalent in society also served as major barriers to a healthy diet in the postpartum period [17, 18]. Apart from this, postpartum women have been observed to be more physically inactive as they are unlikely to indulge in any sort of physical activity apart from household chores. They avoid doing any sort of exercise for at least six months

postpartum. This behaviour is ascribed to the practice of resting and healing, lack of knowledge, lack of time, and limited mobility due to complaints of excessive aches in the body, especially in the back region [19]. The decreased quality and quantity of sleep in postpartum can be related to the lack of support in childcare, body pain, etc. Thus, it can cause impatience, exhaustion, and poor quality of life that may lead to an increased risk for postpartum depression [11].

Thirdly, in India, there are various myths and beliefs associated with the postpartum period which can be a major reason for an unhealthy lifestyle leading to postpartum weight retention [14]. In our study, almost half of the women have consumed excessive ghee (clarified butter) in their last trimester. This practice is promoted with the belief of providing laxation or ease in delivery. Also, the practice of complete rest in the first forty days is also widely prevalent and acceptable similar to other Asian countries [13, 20, 21]. Apart from this, consumption of excessive fat and sugar-laden galactagogues is also promoted with the belief of fostering breastfeeding. Women believe that reducing the calories in their diet will affect their breastmilk output [14, 18].

Fourthly, we also observed that demographics also influence lifestyle-related behaviours in the postpartum period. Women with higher education and socio-economic status had a relatively healthy diet this can be due to their access to authentic sources of knowledge for guidance such as qualified nutritionists and wellness coaches. Also, working women were more likely to indulge in light- or moderate-intensity exercise to lose their excessive weight [22]. It can be attributed to their desire to look fit or get back in shape before the commencement of their regular work. Apart from this, women residing in rural areas are more likely to believe in myths related to the postpartum period, and this is worrisome as almost 70% of the Indian population resides in rural areas [23]. Lastly, we also observed that an unhealthy lifestyle including poor diet and low physical activity is more prevalent in the initial months of postpartum. The major reasons for this can be the myths and beliefs embedded with the postpartum lifestyle. This includes reducing diet, and increasing physical activity will reduce breast milk output as the first six months are meant for exclusive breast-feeding. Also, more focus is given to childcare in the initial months, as women are navigating their way to the new phase of motherhood [24, 25].

This study has various implications as it highlights the service delivery gap in the postpartum period and emphasises the need for change from individual to policy level. There is a need to bridge the gap of lifestyle-related counselling to increase the awareness and knowledge of postpartum women about healthy lifestyles and burst associated myths and hoaxes. This can be done by developing specific guidelines for the group and training

gynaecologists, physicians, and nutritionists, and advocating for women-centric weight management clinics even in the peripheries of the country.

The study has various strengths like larger sample size, novelty, and the number of study parameters aiding in a comprehensive assessment of lifestyle-related behaviours, barriers, and myths of postpartum women. However, the following limitations should be considered before drawing conclusions. (i) The sample was based on convenience sampling, even though efforts were made to ensure representativeness, and thus, the findings cannot be generalised. (ii) The study may have recall and social-desirability bias even though participants were motivated to give honest responses. (iii) Inability to capture data from all the participants due to incorrect contact details, unavailability, refusal to share information. (iv) Prospective cohorts can be done to better understand the causal relationships.

Conclusion

The findings of this study provide a better understanding of the lifestyle practices, barriers, and myths/beliefs of postpartum women in India. This will help in developing a comprehensive women-centric weight management module focusing on practical guidelines for lifestyle, breastfeeding, and other confounding factors associated with postpartum weight management. These guidelines can be disseminated to public health professionals, gynaecologists, physicians, and nutritionists who can publicise and advocate these in their daily practice.

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Declarations

Conflict of interest The authors declare that they have no competing interests.

Ethical approval The study was done as per the Declaration of Helsinki with prior approval from the Institute Ethics Committee with reference no. IEC/236/3/2020. We, the authors, approve that the requirement for the authorship as stated has been met and we believe that the manuscript represents honest work.

Informed Written Consent Yes

Study of Human Participants Yes.

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