

# A Study to Assess the Knowledge on Body Image Changes Due To Pregnancy and Breastfeeding among Primigravidae

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**Abstract**— A study was undertaken to assess the knowledge on body image changes due to pregnancy and breastfeeding among primigravidae at KIMS hospital, Bangalore. The objectives of the study were : To assess the level of knowledge of primigravidae on body image changes due to pregnancy and breastfeeding. To find an association between knowledge of primigravidae on body image changes due to pregnancy and breastfeeding with selected demographic variables. A descriptive research design was used to assess the knowledge on body image changes due to pregnancy and breastfeeding among primigravidae. The target population for the study were selected from primigravida mothers who were attending OBG OPD, KIMS Hospital, Bangalore. This population was selected by convenient sampling technique. The total samples under the study were 60 primigravida mothers. The data collection was made through semi structured questionnaire , was designed to assess the knowledge of primigravida mothers on body image changes due to pregnancy and breastfeeding. The results were described by using descriptive and inferential statistics. The overall findings of the study clearly showed that majority 67% (40) of subjects had moderate knowledge. The results revealed that information to empower mothers with adequate knowledge on body image changes due to pregnancy and breastfeeding.

**Index Terms**— pregnancy and breastfeeding, primigravida.

## I. INTRODUCTION

Pregnancy is a happiest moment for a woman. Throughout pregnancy mother can learn to love and appreciate the changes in body during pregnancy. Pregnancy causes immense changes in a woman's body. As a baby grows inside a mother, a mother's body grows increasingly larger. As pregnancy affects a woman's physique, body image can be altered in positive and negative ways. The woman who is experiencing negative changes in their body image, the joys of pregnancy can be minimized. Women's self esteem and body image are often closely related and maintaining a positive body image is important for a pregnant mother's mental health<sup>1</sup>.

Pregnancy is filled with multiple challenges including emotional and physical changes that can impact a woman's self esteem and body image. Perception of body image during pregnancy is just as important as the way mother perceive her role as mother, wife, partner and person. Unfortunately society has become so obsessed with body image, particularly

that of thin and underweight images of beauty that many pregnant women develop unhealthy body images during pregnancy<sup>2</sup>.

Women's bodies tend to store up fat in order to nourish babies both during pregnancy and while breastfeeding. Breastfeeding mothers tend to lose more weight over the course of the first postpartum year, some women put a high priority on getting back to their size and shape from before pregnancy. They may choose to wean or never nurse at all<sup>3</sup>.

Adjusting to a post-pregnancy shape may be even more difficult than coping with the changes of pregnancy. Pregnancy represents the biggest change in a woman's body since puberty. As in adolescence, during pregnancy, a woman's body seems to be out of control and at the whims of a mysterious hormonal tidal wave. Emotions can run high, as in those uncomfortable teenage years. The tight, growing roundness of pregnancy is replaced by loose skin and a "fat" tummy that does not automatically shrink back into place. Most women want to return to their pre-pregnancy body as quickly as possible and end up disappointed and depressed when the extra weight seems not only to linger, but also remains distributed differently<sup>3</sup>

The basic nature of the breastfeeding relationship however, is inherently sensual -- the touch of skin on skin, the sensations produced as the baby suckles, the feelings associated with the release of milk. This culturally based sexual taboo directly affects the initial infant feeding decision. This patriarchal attitude toward women's bodies can be dangerous to infant health if it leads to lower incidence of breastfeeding. The changes associated with lactation alter the way women perceive a part of themselves, thus, their feeling of attractiveness. The need to redefine the function of breasts based on the changes taking place then shapes the decision made about infant feeding method<sup>4</sup>.

## A. NEED FOR THE STUDY

Pregnancy is usually a happy and joyful time during which mothers are preparing for new arrival, but pregnancy is also a time of changes, both physical and emotional. Many women find it difficult to deal with all the different changes going on in their lives and in their bodies; others seem to relish in these changes. Body image is of particular concern during pregnancy. The way society feels about pregnancy often impacts on body image during pregnancy and society's obsession with thinness also causes some women to hate their

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bodies during pregnancy. Women are constantly struggling to achieve that pre-pregnant body image, which society tells to be in thin and lean<sup>5</sup>.

Breast-feeding is a key public health target but social and cultural factors are often overlooked when encouraging mothers to choose breast-feeding as their method of infant feeding. Historically, there have always been some mothers who have sought alternatives to breast-feeding. Fear of damaging their body shape can prevent some mothers from breast-feeding, while others see breast-feeding as desirable as it can lead to weight loss. The attitudes of partners, relatives and friends can influence mothers to varying degrees in their choice of infant feeding. Knowledge of various influences can assist health professionals in their public health role and help them to give mothers advice relevant to their circumstances<sup>7</sup>.

A study conducted on “body image, maternal-fetal attachment and choice of infant feeding method” in Taiwan. The purpose of this study was to explore the relationships among factors of body image, maternal-fetal attachment, and the choices made by pregnant women about infant feeding method. A sample of 195 pregnant women was selected during their third trimester. The results indicated that the best subset for predicting the variable of breastfeeding intention included higher level of education, primiparity and a higher level of maternal-fetal attachment<sup>9</sup>.

A prospective study conducted on the factors that lead to body dissatisfaction during pregnancy. Healthy pregnant women (n=128) completed questionnaires on three occasions during their pregnancies reporting on a total of four time points: 3 months prior to pregnancy, in the early to mid-second trimester, the late-second/early-third trimester, and the latter part of the third trimester. Women reported adapting to the changes that occurred in their body; however, women were most likely to experience higher levels of body dissatisfaction in early to mid-second trimester. Findings related to predictors of body dissatisfaction revealed that both social and psychological factors contributed to body image changes in pregnancy<sup>10</sup>.

It is important to realize that every woman feels a different way about herself during her pregnancy and breastfeeding, henceforth the investigator felt, “to assess the knowledge on body image changes due to pregnancy and breastfeeding among primigravidae .

## II. REVIEW OF LITERATURE

The literature reviewed related to the present study is organized and presented under the following headings based on the aspects in tool and objectives of the study.

1. Review of Literature related to body image and pregnancy
2. Review of Literature related to body image and postpartum
3. Review of Literature related to body image and breastfeeding

### A. Review of Literature related to body image and pregnancy

A prospective study conducted on “Effects of pregnancy on pelvic floor dysfunction and body image” in Good Samaritan Hospital, USA. Pregnant subjects completed questionnaires in the first (S1) and third trimester (S2) and 6 months postpartum (S3) including: Body Exposure during Sexual Activities Questionnaire, Incontinence Impact Questionnaire, and Fecal Incontinence Quality of Life Scale. Urinary symptoms worsened through pregnancy with improvement postpartum. The results of this study indicated poor body image in the postpartum period<sup>12</sup>.

A study conducted on “effect of body image on pregnancy weight gain” in department of nutrition, Chapel Hill, USA. The Body Image Assessment for Obesity tool was used to measure ideal and current body sizes in 1,192 women participating in the Pregnancy. Descriptive and multivariable techniques were used to assess the effects of ideal body size and discrepancy score (current-ideal body sizes), which reflected the level of body dissatisfaction, on gestational weight gain. Comparing those who preferred thin body silhouettes to those who preferred average size silhouettes, low income women had increased risk of inadequate weight gain [RR = 1.76 (1.08, 2.88)] while those with lower education were at risk of excessive gain [RR = 1.11 (1.00, 1.22)]. The results revealed that body image was associated with gestational weight gain but the relationship is complex<sup>15</sup>.

A cohort study conducted on “misperceived pre-pregnancy body weight status predicts excessive gestational weight gain” in Harvard Medical School and Harvard Pilgrim Health Care, USA. A sample of 1537 women who had either normal or overweight/obese pre-pregnancy BMI. Categorized in to 2 types of pre-pregnancy body weight status misperception: normal weight women who identified themselves as overweight ('overassessors') and overweight/obese women who identified themselves as average or underweight ('underassessors'). The results of the study indicated that 1029 women with normal pre-pregnancy BMI, 898 (87%) accurately perceived and 131 (13%) overassessed their weight status. The study concluded that misperceived pre-pregnancy body weight status was associated with excessive gestational weight gain among both normal weight and overweight/obese women<sup>16</sup>.

A study conducted on “body image change in pregnancy: a comparison of normal weight and overweight primigravidas”. Through a self-administered, free-response questionnaire, 76 primigravidas of at least 30 weeks gestation described their feelings about current appearance and body shape and compared these to pre pregnancy feelings. Respondents also completed the Body Shape Questionnaire to measure current concern with body shape. The result of this study is Women who were overweight before pregnancy were more likely to have had a positive change in body image when they were at more than 30 weeks gestation. Women who were normal weight before pregnancy were more likely to have had a negative change. Despite overweight women's positive

changes, their body shape concerns were more negative than those of normal weight women. Conclusion of this study highlights the relationship between social values, prepregnancy body weight, and body image change during pregnancy<sup>18</sup>.

### B. Review of Literature related to body image and postpartum

A prospective longitudinal study conducted on “Predictors of mothers’ postpartum body dissatisfaction” by Department of family medicine and Community Health University of Minnesota. A sample of 506 mothers completed surveys at 0-1 and 9 months postpartum. Postpartum changes in body dissatisfaction and weight were evaluated by paired t-tests and predictors of postpartum body dissatisfaction were identified by stepwise multiple regression analysis. Mothers’ body dissatisfaction increased significantly from 0-1 to 9 months postpartum (mean scores of 15.2 and 18.2, respectively,  $p < .001$ ). Although women lost an average of 10.1 pounds (sd = 16.3) or 4.6 kg. (sd = 7.4) between 0-1 and 9 months postpartum ( $p < .001$ ), their weight at 9 months postpartum remained an average of 5.4 pounds (sd = 15.6) or 2.5 kg (sd = 7.1) above their pre-pregnancy weights ( $p < .001$ ). This study concluded that Mothers’ body satisfaction worsened from 1 to 9 months of postpartum period<sup>24</sup>.

A study conducted on “weight related distress in the early months after child birth”, in University of Texas. It reveals the extent of weight-related distress reported by mothers and to explore associations of anthropometric and psychosocial variables with feelings about weight. Mothers' (N = 227) written descriptions of feelings about their weight were categorized using content analysis. More than 40% were somewhat satisfied with their weight, another 40% were mildly dissatisfied, and 8% experienced weight-related distress. Higher prepregnancy body mass index, larger gestational weight gain, higher current postpartum body mass index, less healthy lifestyle, and greater body image dissatisfaction were associated significantly with more dissatisfied/distressed feelings about weight. Results supported the need for greater attention to the psychosocial significance of weight after childbirth<sup>25</sup>.

A study conducted on “Determinants of pregnancy and postpartum depression: prospective influences of depressive symptoms, body image satisfaction and exercise behavior,” at Pennsylvania State University. It reveals the association between the extent to which depressive symptoms, body image and exercise behavior prospectively explained trimester specific and postpartum depression. A sample of 230 pregnant women completed self reported measures midway through their first, second and third trimesters and at 6 weeks postpartum. The study concluded that depressive symptoms and body image satisfaction are important psychological factors for intervention to improve women’s pregnancy and postpartum psychological health<sup>26</sup>.

### C. Review of Literature related to body image and breastfeeding

A study was conducted on “Life style factors related to

postpartum weight gain and body image in bottle and breast feeding women” in south western community. It reveals that, the relationship of lifestyle variables to postpartum weight gain and body image attitudes of bottle and breastfeeding women (4 months postpartum). Samples were 101 bottle-feeding women and 106 breastfeeding mothers. Feeding method (breast or bottle) was not associated with postpartum weight gain in the sample as a whole. Bottle-feeding mothers with higher postpartum gains exercised less, had higher fat intake habits, and were more dissatisfied with body image than mothers with lower gains. Breastfeeding mothers with higher and lower gains did not differ on any lifestyle factors. Overall lifestyle and psychologic skill in managing emotions were related negatively to postpartum body image dissatisfaction in both groups of women<sup>29</sup>.

A study conducted on “postpartum body composition changes in lactating and non lactating primiparas” in University of Utah, Salt Lake City, USA. The non-lactating mothers (n = 6) were younger (21 versus 29 y) and had a lower prepregnancy weight (55 kg versus 63 kg) than the lactating mothers (n = 14). At delivery and 6 wk postpartum, the weights and heights were similar between the two groups. By 12 wk postpartum, the formula-feeding group had a weight loss that was different from delivery, 66 +/- 10 kg to 59 +/- 8 kg,  $P < 0.03$ . There was no significant weight change in the lactating group during the study. The total body bone mineral content did not differ between the two groups during the study. Both groups had reduction in their waist size from delivery to 12 wk postpartum. But only the non-lactating mothers had reductions in their hip and midhigh measurements. Lactating mothers had a higher total daily calories (1974 +/- 318 versus 1464 +/- 178 calories,  $P < 0.002$ ) and fat intake (63 +/- 14 versus 47 +/- 9 g,  $P < 0.02$ ) than the non-lactating mothers. In conclusion, during the first 12 wk postpartum, non-lactating mothers who were younger and weighed less prepregnancy lost body weight<sup>31</sup>.

A study conducted on “Effect of infant feeding on maternal body composition” in department of Foods and Nutrition, University of Georgia, USA. A sample of 24 mothers aged 19 - 42 years was studied. At 12 weeks postpartum, exclusively breastfeeding mothers had lost more total body weight than mixed feeding mothers (4.41 +/- 4.10 kg versus 2.79 +/- 3.09 kg;  $p = 0.072$ ). This study concluded that exclusive breastfeeding promotes greater weight loss than mixed feeding among mothers even in the early postpartum period. This suggests that there is the need to encourage mothers to exclusively breastfeed as a means of overweight and obesity prevention<sup>33</sup>.

A study conducted on “Exclusive breastfeeding and postnatal changes in maternal anthropometry” in Department of Paediatrics, University of Abuja Teaching Hospital, Gwagwalada. A sample of 322 women practicing EBFing and 205 in the non-EBFing group. Weight loss was significantly higher among the EBFing group than in the non-EBFing ones during the first six months of EBFing

practice (4.13 Vs 1.06kg),  $p < 0.05$ . This was primarily due to average weight loss of 3.43kg in EBFing mothers in the last 3-6 months of EBFing practice. Whereas the non-EBFing group experienced an increase in their Triceps Skin fold Thickness (2.12mm), the EBFing mothers had a mean net loss of -1.03mm, ( $p < 0.05$ ). A positive correlation was seen between the frequency of breastfeeding and maternal weight changes in the EBFing group ( $r = 0.56$ ,  $p < 0.05$ ), same was also seen between frequency of breastfeeding and maternal changes in TST and MAC losses in the same group of mothers, ( $r = 0.08$  for TST, and  $0.28$  for the MAC,  $p < 0.05$ )<sup>35</sup>.

A retrospective study conducted on, “Breastfeeding and perceived changes in the appearance of the breasts,” in Italy reveals the association between breastfeeding and perception that women have of changes in the appearance of their breasts. A sample of 496 women was interviewed (SD 3.4 mo, range 12.6–23.1 mo) after the birth of their first baby. Information was collected on pregnancy, infant feeding and breast size before pregnancy. The main outcome measures were self-reported changes in the appearance of the breasts (enlargement or reduction in breast size and loss of firmness). The results of this study indicated Seventy-three percent of the mothers reported that their breasts were different compared with before pregnancy; enlargement and loss of firmness representing the most common changes<sup>36</sup>.

A study conducted on “Postpartum weight loss and body changes in lactating vs. formula feeding primiparas” by Department of Pediatrics, University of Utah, Salt Lake City, Utah. A sample of 20 mothers were divided into 3 groups according to age and feeding selection (Formula feeder, FF,  $n = 6$ , age 17-25; young breast-feeders, YBF,  $n = 6$ , age 20-29; mature breast-feeders, MBF,  $n = 8$ , age 30-36). 14 nulliparous

females (age 19-36) served as controls. Results showed that FF and MBF groups had decreases in body weight over the 12 weeks ( $p < .03$ ). All study groups experienced a loss in waist size, but only FF and MBF mothers had a decrease in hip circumference. MBF had higher calorie ( $p < .005$ ), fat ( $p < .04$ ) and protein intake ( $p < .008$ ) than FF mothers. The study concluded that maternal age and type of feeding will affect postpartum weight loss and body changes in primiparas during the first 12 weeks<sup>38</sup>

A study conducted on “mother’s perceptions of their body image and satisfaction of their body appearance and the choice of infant feeding method,” in University of Texas, Austin. A convenient sample of 10 mothers who had given birth between 2 months to 18 months was selected. This small-scale study concluded that they worried about the weight they had gained and the speed with which this could be lost. A few of the women dislike the stretch marks due to the pregnancy while others don't like the lack of muscle tone in the abdominal areas. They also try to find time to improve their general appearance mostly by walking and controlling their food<sup>39</sup>.

### III. ANALYSIS AND INTERPRETATION

Analysis is a process of organizing and consolidating data in such a way that research questions can be answered.

The data was collected on the basis of objectives formulated for the study.

#### A. ORGANIZATION & PRESENTATION OF DATA

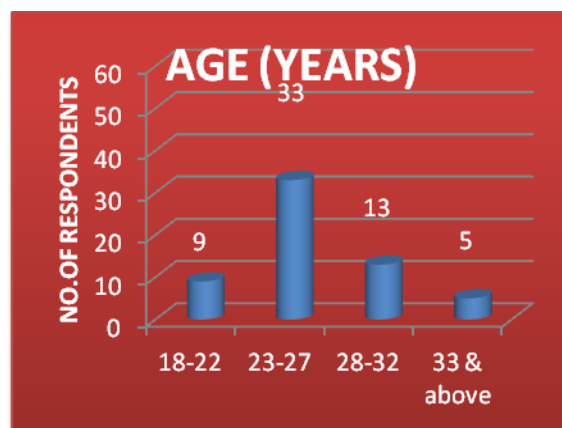
The analysis of the data is organized and presented under the following sections:

#### Section I: Distribution of respondents by demographic variables

**Table 3.1: Distribution of Respondents by Age**

Characteristics	Category	Respondents	
		Number	Percentage (%)
Age (years)	18-22	09	15.00
	23-27	33	55.00
	28-32	13	21.67
	33 & above	5	8.33
<b>Total</b>		<b>60</b>	<b>100.00</b>

**Table 3.1 and fig 3.1** depicts the distribution of respondents by age. Out of 60 respondents 15% (09) of the respondents were in the age group of 18-22 years, 55% (33) of the respondents were in the age group of 23-27 years, 21.67% (13) of the respondents were in the age group of 28-32 years and remaining 8.33% (05) of the respondents were in the age group of more than 33 years.

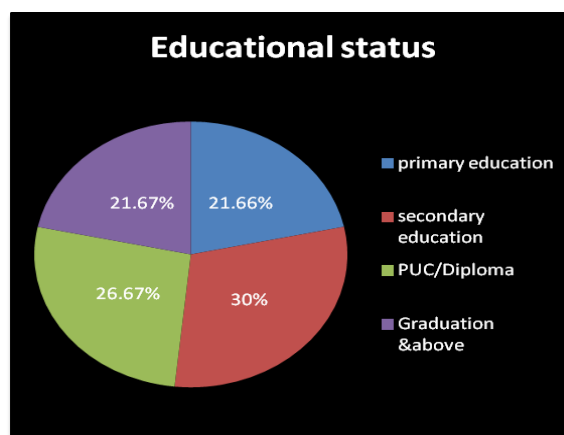


**Figure 3.1: Distribution of Respondents by Age**

**Table 3.2 and Fig 3.2** depicts the distribution of respondents by educational status. Out of 60 respondents 21.67% (13) of the respondents were educated up to graduation and above, 26.67% (16) of the respondents were educated up to PUC/Diploma, 30% (18) of the respondents were educated up to Secondary school, and remaining 21.66% (13) of respondents were educated up to primary education.

**Table 3.2: Distribution of Respondents by Educational status N=60**

Characteristics	Category	Respondents	
		Number	Percentage (%)
Educational status	No formal	00	00.00
	Primary education	13	21.66
	Secondary education	18	30.00
	PUC/ Diploma	16	26.67
	Graduation & above	13	21.67
<b>Total</b>		<b>60</b>	<b>100.00</b>



**Figure 3.2: Distribution of Respondents by Educational status N=60**

**Table 3.3: Distribution of Respondents by Occupation N=60**

Characteristics	Category	Respondents	
		Number	Percentage (%)
Occupation	House wife	29	48.33
	Coolie	09	15.00
	Employee	22	36.67
<b>Total</b>		<b>60</b>	<b>100.00</b>

**Table 3.3 and Fig 3.3** shows that, 48.33% (29) of the respondents were house wives, 15% (09) of the respondents were coolie workers and remaining 36.67% (22) of the respondents were employees.

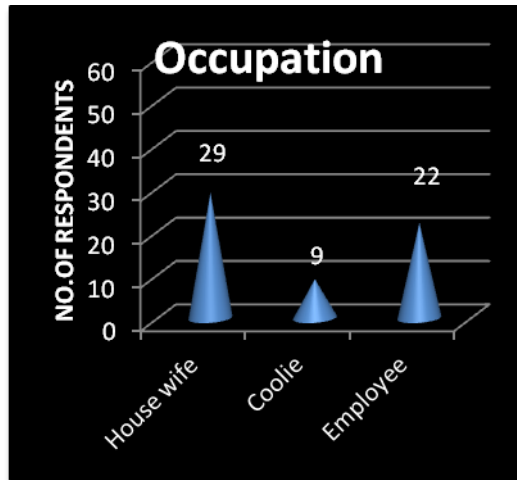


Figure 3.3: Distribution of Respondents by occupation

Table 3.4: Distribution of Respondents by Period of gestation N=60

Characteristics	Category	Respondents	
		Number	Percentage (%)
Period of Gestation	1 <sup>st</sup> trimester	16	26.67
	2 <sup>nd</sup> trimester	29	48.33
	3 <sup>rd</sup> trimester	15	25.00
<b>Total</b>		<b>60</b>	<b>100.00</b>

Table 3.4 Fig 3.4 depicts the information about distribution of respondents by period of gestation. Among 60 respondents, 26.67% (16) of the respondents were in 1<sup>st</sup> trimester, 48.33% (29) of the respondents were in 2<sup>nd</sup> trimester and remaining 25% (15) of the respondents were in 3<sup>rd</sup> trimester of pregnancy.

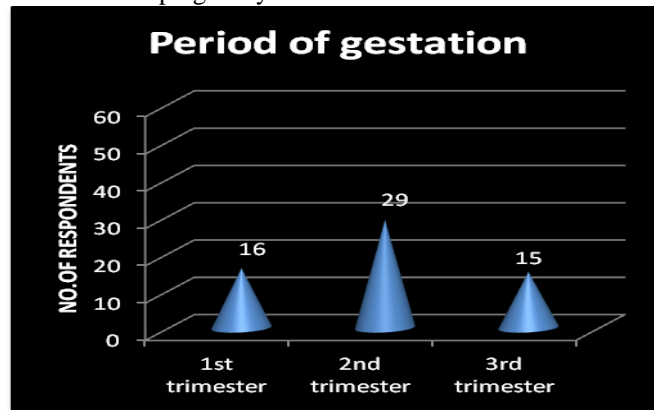


Figure 3.4: Distribution of Respondents by Period of gestation

Table 3.5: Distribution of Respondents by No. Of antenatal visits attended N=60

Characteristics	Category	Respondents	
		Number	Percentage (%)
No. Antenatal visits attended	One time	15	25.00
	Two times	24	40.00
	Three times	15	25.00
	Four times & more	06	10.00
<b>Total</b>		<b>60</b>	<b>100.00</b>

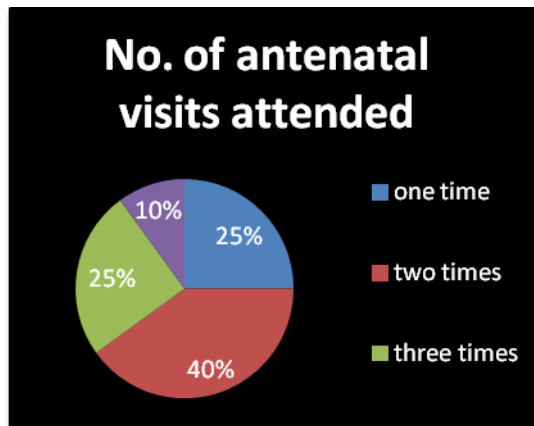


Figure 3.5: Distribution of Respondents by No. Of antenatal visits

Table 3.6: Aspect wise mean knowledge scores of respondents on body image changes due to pregnancy and breastfeeding

No.	Knowledge Aspects	Statements	Max. Score	Respondent's Knowledge		
				Mean	Mean (%)	SD
I	Body image and pregnancy	15	15	7.90	52.67	1.59
II	Body image and breastfeeding	15	15	8.66	57.33	1.99
	<b>Combined</b>	<b>30</b>	<b>30</b>	<b>16.6</b>	<b>55.2</b>	<b>3.19</b>

one time, 40% (24) of the respondents visited two times, 25% (15) of the respondents visited three times and remaining 10% (06) of the respondents visited four or more times for antenatal checkup

Table 3.5 and Fig 3.5 depicts distribution of respondents by number of antenatal visits attended. 25% (15) of the respondents visited only

Table 3.7: Association between age and knowledge score of respondents regarding body image changes due to pregnancy and breastfeeding, N=60

Age group (in years)	Respondents Knowledge level								X <sup>2</sup> VALUE
	Inadequate		Moderate		Adequate		Total		
	N	%	N	%	N	%	N	%	
18-22	03	33.33	05	55.56	01	11.11	09	100	8.40 <sup>NS</sup>
23-27	01	3.0	22	66.67	10	30.33	33	100	
28-32	03	23.0	08	61.53	02	15.38	13	100	
33 & above	00	00	05	100.0	00	00	05	100	
<b>Total</b>	<b>07</b>	<b>11.6</b>	<b>40</b>	<b>66.67</b>	<b>13</b>	<b>21.67</b>	<b>60</b>	<b>100</b>	

**Section II : Aspect wise knowledge scores of respondents on body image changes due to pregnancy and breastfeeding N=60**

Table 3.6 shows, the Aspect wise Mean Knowledge scores of Respondents on body image changes due to pregnancy and breastfeeding.

The overall mean knowledge score was found to be 55.2% with SD of 3.19 on body image changes due to pregnancy and breastfeeding.

The highest (57.33%) mean knowledge score was found in the aspect of body image and breastfeeding followed by 52.67% in body image and pregnancy.

The data presented in **Table 3.7** indicates the association between age and knowledge level of respondents on body image changes due to pregnancy and breastfeeding. It shows that among 09 respondents in the age group of 18-22 years, 03 (33.33 %) had inadequate, 05 (55.56 %) had moderate and 01 (11.11 %) had adequate

knowledge level. Further among 33 respondents between the age group of 23-27 years, 01 (3 %) had inadequate, 22 (66.67%) had moderate and 10 (33.33%) had adequate knowledge level. It also indicates that among 13 respondents between

the age group of 28-32 years, 3 (23%) had inadequate, 8 (61.53%) had moderate and 2 (15.38%) had adequate knowledge level. Further among 5 respondents are aged about 33 and more than that. Hence the value  $X^2$  is found to be non significant at 5% level ( $X^2=8.40$ ,  $P> 0.05$ ). It indicates that there is no significant association between knowledge and the respondents age.

**Table 3.8: Association between educational status and knowledge score of respondents regarding body image changes due to pregnancy and breastfeeding.**

Educational status	Respondents Knowledge level								$X^2$ VALUE
	Inadequate		Moderate		Adequate		Total		
	N	%	N	%	N	%	N	%	
Primary education	06	46.15	06	46.15	01	7.7	13	100	12.24 <sup>NS</sup>
Secondary education	06	33.33	11	61.11	01	5.6	18	100	
PUC/Diploma	02	12.5	14	87.5	00	00	16	100	
Graduation and above	01	7.7	09	69.2	03	23.1	13	100	
<b>Total</b>	<b>15</b>	<b>25</b>	<b>40</b>	<b>66.7</b>	<b>05</b>	<b>8.3</b>	<b>60</b>	<b>100</b>	

N=60

**Table 3.8** depicts the association between the education and knowledge level of respondents on body image changes due to pregnancy and breastfeeding.

Among 13 respondents with primary education, 7.7% (01) had adequate, 46.15% (06) had moderate and 46.15% (06) had inadequate knowledge level. Among 18 respondents with secondary education, 5.6% (01) had adequate and 61.1% (11) had moderate and 33.33% (06) had inadequate knowledge level.

Among 16 respondents with PUC/ Diploma education, 87.5% (14) had moderate knowledge and 12.5% (02) had inadequate knowledge. Further, among 13 respondents with graduation and above education level 23.1% (03) had adequate and 69.2% (09) had moderate and 7.7% (01) had inadequate knowledge.

**Table 3.9: Association between occupation and knowledge score of respondents regarding body image changes due to pregnancy and breastfeeding**

Occupation	Respondents Knowledge level								$X^2$ VALUE
	Inadequate		Moderate		Adequate		Total		
	N	%	N	%	N	%	N	%	
House wife	10	34.5	18	62.1	01	3.4	29	100	5.80 <sup>NS</sup>
Coolie	03	33.3	05	55.6	01	11.1	09	100	
employee	02	9.1	17	77.3	03	13.6	22	100	
<b>Total</b>	<b>15</b>	<b>25</b>	<b>40</b>	<b>66.7</b>	<b>05</b>	<b>8.3</b>	<b>60</b>	<b>100</b>	



The data subjected for statistical test, indicates that the association is statistically non significant ( $X^2=12.24^{NS}$  at  $P>0.05$  level). It indicates there is no association between the knowledge and educational status of the respondents.

**Table 3.9** shows the association between the occupation and knowledge scores on body image changes due to pregnancy and breastfeeding.

It indicates that among 29 house wives, 01(03.4%) had adequate knowledge, 18(62.1%) had moderate knowledge and 10 (34.5%) had inadequate knowledge. Among 09 coolie workers, 01 (11.1%) had adequate knowledge, 05 (55.6%) had moderate knowledge and 03 (33.3%) had inadequate knowledge. Among 22 employees, 03 (13.6%) had adequate knowledge, 17(77.3%) had moderate knowledge and 02 (9.1%) had inadequate knowledge.

However, the  $X^2$  value is found to be non significant. It indicates that there is no significant association between knowledge level and occupation of the respondents ( $X^2=5.80^{NS}$ ,  $P>0.05$ ).

**Table 3.10** shows the information about the association between the period of gestation and knowledge score of the respondents on body image changes due to pregnancy and breastfeeding. Among 16 mothers in 1<sup>st</sup> trimester, 01 (06.3%) had adequate knowledge, 08 (50%) had moderate knowledge, 07 (43.7%) had inadequate knowledge.

**Table 3.10: Association between period of gestation and knowledge score of respondents regarding body image changes due to pregnancy and breastfeeding.**

No. of Antenatal visits	Respondents Knowledge level								X <sup>2</sup> VALUE
	Inadequate		Moderate		Adequate		Total		
	N	%	N	%	N	%	N	%	
One time	06	40	08	53.3	01	6.7	15	100	3.73 <sup>NS</sup>
Two times	06	25	16	66.7	02	8.3	24	100	
Three times	02	13.3	12	80	01	6.7	15	100	
Four times & more	01	16.7	04	66.6	01	16.7	06	100	
<b>Total</b>	<b>15</b>	<b>25</b>	<b>40</b>	<b>66.7</b>	<b>05</b>	<b>8.3</b>	<b>60</b>	<b>100</b>	

NS- Non Significant  $X^2$  (0.05, 4df) = 9.49

Among 29 mothers in 2<sup>nd</sup> trimester, 03 (10.3%) had adequate knowledge, 20 (69%) had moderate knowledge and 06 (20.7%) had inadequate knowledge. Among 15 mothers in 3<sup>rd</sup> trimester, 01 (06.7%) had adequate knowledge, 12 (80%) had moderate knowledge and 02 (13.3%) had inadequate knowledge.

However, the  $X^2$  value is found to be non significant. It indicates that there is no significant association between knowledge level and period of gestation of the respondents ( $X^2=4.64^{NS}$ ,  $P>0.05$ ).

**Table 3.11** shows the association between number of antenatal visits attended and knowledge score of respondents on body image changes due to pregnancy and breastfeeding.

Among 15 mothers who visited first time, 01 (6.7%) had

**Table 3.11: Association between antenatal visits attended and knowledge score of respondents regarding body image changes due to pregnancy and breastfeeding**

Period of gestation	Respondents Knowledge level								X <sup>2</sup> VALUE
	Inadequate		Moderate		Adequate		Total		
	N	%	N	%	N	%	N	%	
One time	01	6.7	04	66.6	01	16.7	06	100	3.73 <sup>NS</sup>
Two times	02	13.3	12	80	01	6.7	15	100	
Three times	06	40	08	53.3	01	6.7	15	100	
Four times & more	06	40	08	53.3	01	6.7	15	100	
<b>Total</b>	<b>15</b>	<b>25</b>	<b>40</b>	<b>66.7</b>	<b>05</b>	<b>8.3</b>	<b>60</b>	<b>100</b>	

adequate knowledge, 08(53.3%) had moderate knowledge and 06 (40%) had inadequate Knowledge.

Among 24 mothers who visited two times, 02 (8.3%) had adequate knowledge, 16 (66.7%) had moderate knowledge and 06 (25%) had inadequate knowledge. Among 15 mothers who visited three times, 01 (16.7%) had adequate knowledge, 12 (80%) had moderate knowledge and 02 (13.3%) had inadequate knowledge. Among 06 mothers who visited four times & more times, 01 (16.7%) had adequate knowledge, 04 (66.6%) had moderate knowledge and 01(16.7%) had inadequate knowledge.

1 <sup>st</sup> trimester	07	43.7	8	50	01	6.3	16	100	4.64 <sup>NS</sup>
2 <sup>nd</sup> trimester	06	20.7	20	69	03	10.3	29	100	
3 <sup>rd</sup> trimester	02	13.3	12	80	01	6.7	15	100	
<b>Total</b>	<b>15</b>	<b>25</b>	<b>40</b>	<b>66.7</b>	<b>05</b>	<b>8.3</b>	<b>60</b>	<b>100</b>	

Hence, the value of  $X^2$  is found to be non significant at 5% level ( $X^2=3.73^{NS}$ ,  $P>0.05$ ). It indicates that there is no significant association between knowledge and number of antenatal visits attended.

#### IV. CONCLUSION

The conclusions drawn from the analysis, implications, limitations, suggestions and recommendations.

The focus of this study was to assess the knowledge of primigravida mothers on body image changes due to pregnancy and breastfeeding. The data was collected from 60 samples and the conclusions drawn from the study were as follows:

The overall mean and mean percentage of knowledge scores on body image changes due to pregnancy and breastfeeding was found to be 16.66 and 55.2% respectively. It indicates that the majority of the respondents are having moderate knowledge on body image changes due to pregnancy and breastfeeding.

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