

# Risk of maternal condition among obese and non-obese women

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■ **ABSTRACT** : Obesity is a growing global health problem. In India, more than half of the adult women are overweight and almost 30% are obese. The problems which are associated with obesity are Type 2 diabetes, coronary heart disease, high LDL (bad) cholesterol, stroke, hypertension, nonalcoholic fatty liver disease, gallbladder disease, osteoarthritis ( degeneration of cartilage and bone of joints), sleep apnea and other breathing problem, some forms of cancer (breast, colorectal, endometrial and kidney). Obesity represents a major risk factor in pregnant and lactating women and has documented maternal effects on both pregnancy and the fetus. Alarming 35% of the women died from maternal death had a BMI >30. According to the results and discussion of the study following broad conclusion was drawn according to anthropometrics measurement. The majority of maternal women belonging to this phase showed the maternal obesity in obese and non-obese women in the study by using previous WHO criteria and proposed Asian criteria. The anthropometric measurement obese and non-obese problem in Lucknow city was assessed on body mass index, the objective of the study was to know nature and extent of maternal condition during the study, to determine obese and non-obese women according to anthropometry measurement. To assess metabolic aberrations in women through biochemical parameters and investigation of the risk of maternal obesity condition women. The study was carried out in urban area of Lucknow city using retrospective study (case-control study) after applying screening technique to draw the sample size (n=120). For this study, 120 women belonging to reproductive age group (15 to 49 years) in four mohalla of Lucknow city by adopting multistage random sampling procedure. The tools in the study were pre- designed and pre-tested schedule comprising of family and individual schedule, body mass index (BMI), waist circumference/ hip circumference. Metabolic syndrome (MS) 10.00 per cent, metabolically healthy but obese (MHO) 41.67 per cent, metabolically obese normal weight (MONW) 48.33 per cent women and results are given 120 women according to her age (55.81%) women were metabolically normal weight (BMI>18.5) according to (BMI>30).

■ **KEY WORDS**: Maternal condition, Womenhood, Pregnancy, Lactation, Obese, Non-obese

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Confidential enquiries into maternal deaths. the aim of this study was to determine whether morbidly obese women are at increased risk of maternal out comes, compared to women with a normal body mass index (BMI).Overweight and obesity represent a rapidly growing threat to the health of population and an increasing number of countries worldwide (World Health Organization, 1997).The term “OBESE” actually refers to one who is more than 30% over their ideal body weight (Freedman *et al.*, 2008 and Aimukhametova *et al.*, 2012). Obesity can be the result of

many factors, including inactivity, poor diet, and certain health related complication. Many people already know that being overweight or obese can raise a women’s risk of heart disease, diabetes, stroke, hypertension and high cholesterol (Di Renzo *et al.*, 2006 and Krishnaswamy, 2012). New National research now indicates that a women who is overweight before she becomes womanhood, lactation, pregnant also has a higher risk of complications during her pregnancy and health problem for her children (Mattheyse, 2009, Madhukar *et al.*, 2010 and Vnnikrishnan and Menon, 2011). The WHO characterizes

obesity as a pandemic issue, with a higher prevalence in females, especially those of child bearing age, than in males. Many dietary, lifestyle and possibly ethnic factors may prove to be important in determining the magnitude of the complications associated with obesity (Gallagher *et al.*, 1996 and Kurachi *et al.*, 2005). During pregnancy, obese women are at increased risk for several maternal perinatal outcomes, including anesthetic, perioperative, and other maternal and fetal complications (Crowther and Ali, 2009 and Norman *et al.*, 2004). Maternal overweight and obesity is the most common high-risk Maternal condition and is associated gestational diabetes mellitus, hypertensive disorders, and newborn macrosomia, among other perinatal complications. Women who are already over-weight or obese before a first pregnancy tend to retain or gain more weight after pregnancy than average weight women despite larger newborns and wider variability in gestational weight gain (Must and Strauss, 2001; Hoxsey and Rinehart, 1997 and Burrow *et al.*, 1994). Weight gain before, during, and after pregnancy not only affects the current maternal condition but may also be a primary contributor to the future development of obesity in women during midlife and beyond (Watkins and Rasmussen, 2003; Kugyelka *et al.*, 2004 and Hilson *et al.*, 2004).

## RESEARCH METHODS

This study was carried out for a period during session 2012- 2013. A cross- sectional design were use in the present study. The sampling techniques used firstly screenings method followed by case and control study (Retrospective) for achieving the 120 sample size during screening No. of subject was out of 120, case (60) and control (60) was selected with in screened number, as critical was maternal condition with obese and non-obese status.

Study subject	Eligible criteria	Screened study subject	With obese/non-obese problem			
			N	%	N	%
Case	Womenhood + pregnant + lactation	392	60	15.31	332	84.69
Control	Womenhood + pregnant + lactation	162	60	37.04	102	62.96

The age group belonging to 15 to 49 years of women (reproductive age) consists of womanhood, pregnancy (only upto 4 month included period as a study subject) and lactation. Women are classified between obese or non-obese on the basis of age, physiological condition, dietary pattern and body mass index (BMI). Using retrospective study (case-control study) after applying screening technique to draw the sample size with the help of tools and techniques maternal condition obese and non-obese

Classification of obesity	Body mass index(kg/m <sup>2</sup> )	
	Proposed Asian criteria	Previous WHO criteria
Under weight	< 18.5	< 18.5
Normal weight	18.5 to < 23	18.5 to < 25
Over weight	23 to < 25	25 to < 30
Obese	>_ 25	>_ 30

Waist circumference/hip circumference-WHR		
	Females	Nutritional status
WHR	Below 0.85	Normal
WHR	0.85 +	Abdominal adiposity

## RESEARCH FINDINGS AND DISCUSSION

The study was carried out among obesity in physiological phase of urban area of Lucknow city. The retrospective study were adopted (case –control) by applying screening method and simple random sampling method to draw the sample. All pathological records was examined and prescribed by registered doctor and were checked. At the time of collection of information of case and control group. The study subject between age groups 15 to 49 in case and control group in obese and non-obese women in different physiological phase but maximum study subjects were in 26 to 33 years respondents belonging to obese and non-obese in case and control group.

Result in Table 1 showed the maternal obesity phase in obese and non-obese women in the study subject by using previous WHO criteria and proposed Asian criteria. The anthropometric measurement obese and non-obese problem

**Table 1 : Distribution on the basis of obese/non-obese – BMI**

Body mass index (kg/m <sup>2</sup> )	Number		Percentage
	Case (60)	Control (60)	
<b>According to proposed Asian criteria</b>			
>16	–	4	3.33
16-16.9	1	6	5.83
17-18.4	3	13	13.34
18.5-22.9	16	28	36.67
23-24.9	30	9	32.50
>25	10	-	8.33
Total	60	60	100.00
<b>According to precious WHO criteria</b>			
>16	–	4	3.33
16-16.9	1	6	5.83
17-18.4	3	30	27.50
18.5-24.9	19	17	30.00
25-29.9	29	3	26.67
>30	8	-	6.67
Total	60	60	100.00

in lucknow city was assessed on body mass index and result are given in Table 1 120 women (55.81%) subject were normal weight (BMI>18.5) according to (BMI>30).

Waist circumference/hip circumference-WHR		
	Females	Nutritional status
WHR	86%	Normal
WHR	17%	Abdominal adiposity

Result in Fig. 1 showed problem starting time as obese wise distribution was 33.33% in case group in womenhood and high weight gain problem starting in pregnancy according to lactation period 53.33 %.

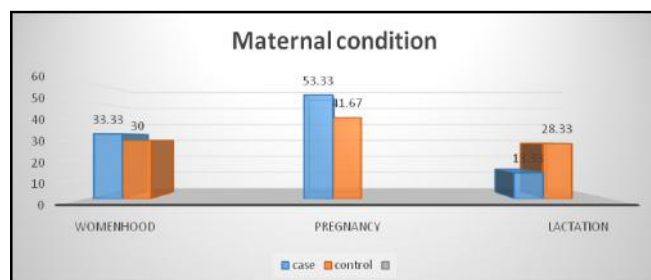


Fig. 1 : Maternal condition during pregnancy/womenhood/ lactation

Result in Fig. 2 showed pregnancy complication distribution was to 9 (45.00%) complication for baby in case group and 8 (40.00%) caesarean section in control group maximum women in study subject.

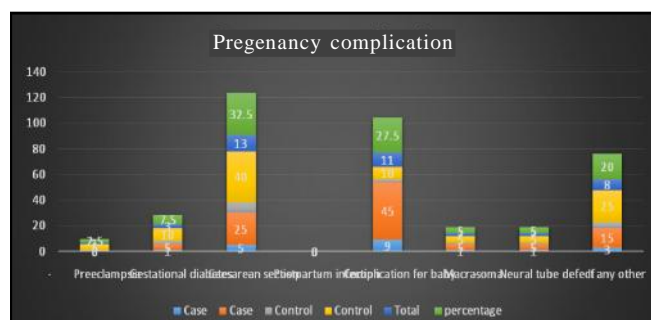


Fig. 2 : Distribution on the basis of risk of maternal condition

Result in Fig. 3 showed lactation phase morbidity belonging to obese or non-obese lactation disease, majority of 9 (45.00%) responded face obesity problem according to 20 obese women in case group, non-obese lactation phase women face caesarean birth problem in 9 (45.00%) in control group. The majority show that the (32.50%) caesarean birth problem face according 40 women in lactation phase.

Result in Fig. 4 showed women hood disease wise distribution was 80.00% (16) women with any other problem in case group and 90.00% (18) also belonging with any other womenhood disease in control group. The majority is 85.00%

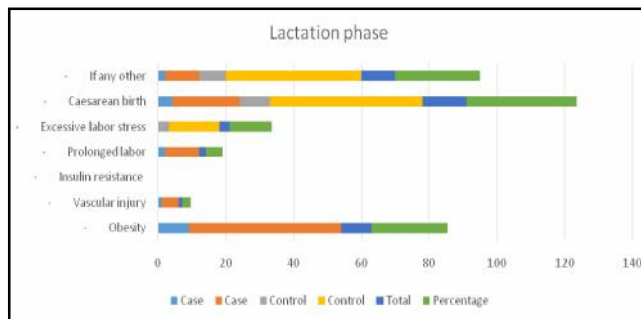


Fig. 3 : Distribution on the basis of lactation risk

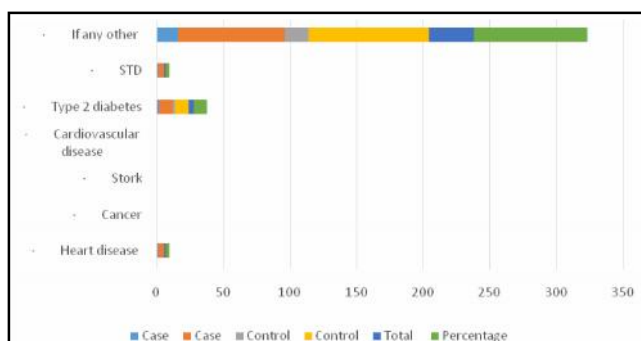


Fig. 4 : Distribution on the basis of womanhood risk

in study subject.

Result in Table 2 showed problem starting time as obese wise distribution was belonging to 35.83% in post pregnancy 31.67% in womenhood, 18.33% in lactation and 14.17% in pre pregnancy are case and control group in study subject (Similar work related to the present investigation was also done by Roos *et al.* (2000) and Wang *et al.* (2002).

Table 2 : Distribution on the basics of Problem Starting time as obesity

Sr. No.	Problem starting time as obese	Case (n=60)		Control (n=60)		Total	Percentage
		N	%	N	%		
1.	Womanhood	20	33.33	18	30.00	38	31.67
2.	Pre pregnancy	4	6.67	13	21.67	17	14.17
3.	Post pregnancy	31	51.67	12	20.00	43	35.83
4.	Lactation	5	8.33	17	28.33	22	18.33
	Total	60	100.00	60	100.00	120	100.00

**Conclusion :**

On the whole it can be concluded that, the study subject obese and non-obese women in maternal phase was concerned with the help of according to anthropometrics measurement, pregnancy complication, womenhood risk and lactation risk affect entire body part of the women in any phases maternal disease increase in women's. overweight obese women face in many problem in pregnancy time like high birth weight babies, which increases the likelihood of caesarean deliveries

and increases the babies will be born with low blood sugar, which can be associated with brain damage and seizures, early infant death, large birth weight infants .but in the hole study's of obese and non-obese the result shows that the Indian women of Lucknow city is not more than suffering in this types of diseases only pregnancy time women gain more weight and some women weight gain in womenhood period. In this study in Lucknow city (Body Mass Index) of women's with the help of previous WHO criteria and Proposed Asian Criteria the Anthropometric measurement obese and non-obese problem only 120 women's study conducted the result is show 55.81% women is normal weight and other maternal phase women's is only over weight she is not suffering in any danger diseases .

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