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RESEARCH ARTICLE

NUTRITIONAL ASSESSMENT OF DALIT MOTHERS AND ITS DETERMINANTS

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ABSTRACT

Background: The nutritional needs of every women increase during pregnancy and lactation, if the requirements are not met, it affects mothers' own health, birth outcome as well as infant health and the consequences can be serious for women and their infants. The overall nutritional status of pregnant and lactating women is poor in Nepal. Couple of evidences have shown that the nutritional status of Dalit mothers is significantly poorer than the Non-Dalits since history as a result of Dalit women's exclusion in socio-economic and political dimensions. Still there is lack of studies which explores the nutritional status and its determinants related to Dalit mothers.

Objective: To assess and compare the nutritional status of Dalit mothers with Non-Dalit mothers and explore its determinants.

Methods: A cross sectional analytical study was conducted in Eastern Terai ecological sub-belt of Nepal during July to December 2011 among 720 Dalit and Non-dalit mothers having under five years children. To assess the nutritional status of mothers, the height, MUAC and Body Mass Index (BMI) were obtained and compared. Chi-square, t- test and Logistic Regression Analysis were used to analyse the result.

Results: The mean height of the study mothers was 151.2 cm with SD 5.4cm and the mean BMI was observed 19.5 with SD 2.6. Moreover, 15.8 percent Dalit mothers had short height (<145cm), 25.8 percent had thin MUAC (<21.0 cm) and 43.7 percent had low BMI (<18.5) in compared to only 8.1 percent short height, 15 percent thin MUAC and 33.3 percent low BMI among Non-dalit mothers respectively. All three indicators of Dalit mothers were significantly poorer than Non-dalit mothers ($p<0.001$). The age and wealth index was found significant determinants for height, wealth index and age at marriage for MUAC and education, decision-making capacity and numbers of CEB were found as the key determinants for Body Mass Index (BMI).

Conclusion: Nearly half (43.7%) of Dalit mothers were observed with low BMI and one in every six (15.8) mothers had short height. Dalit mothers had significantly poor nutritional status than Non-dalit mothers ($p<0.001$) in both indicators.

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INTRODUCTION

The nutrient needs of women increase during pregnancy and lactation. If the requirements are not met, it affects mothers' own health, birth outcome as well as infant health and the consequences can be serious for women and their infants. During pregnancy all women need more food, a varied diet, and micronutrient supplements. Inadequate weight gain during pregnancy often results in low birth weight of newborn, which increases an infant's risk of dying. Certain nutrients deficiencies are associated with maternal complications and even death, foetal and newborn death, birth defects, and decreased physical and mental potential of the child (USAID, AED 2004). Many evidences have shown under nutrition and poor health from preventable causes affect the well-being of millions of people in the developing world. A combination of individual, family and community factors, may contribute to poor nutrition and health status. Pregnant and Lactating mothers from under developed countries are considered as a nutritionally vulnerable group since long time resulting in an increased risk of maternal and infant deaths and disabilities. In addition, frequent pregnancies followed by lactation increase the health risk of mothers and high maternal mortality. More than 3.5 million women and children under age five in developing countries die each year due to the underlying cause

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of under nutrition (Kiday, 2013). Women are more likely to suffer from nutritional deficiency than men for several reasons, including their reproductive biology, low social status, poverty and lack of education. In addition, socio-cultural traditions and disparities in household work patterns can also increase women's chance of being malnourished. Between 5 to 20 percent of women in various African countries are underweight. Many African women display low weight-for-height as measured by a body mass index of less than 18.5. Adequate nutritional status of women is important for good health and increased work capacity of women themselves as well as for the health of their offspring. Severely malnourished mothers have reduced lactation performance contributing to the increased risk of child mortality (USAID, AED, 2004). Mothers should be counselled about the need for an adequate diet to achieve good health and BMI as well as optimal lactation. Particular attention should pay to take protein, calcium and vitamins. Frequent pregnancies followed by lactation increase the health risk of mothers resulting in a high maternal mortality. The term "Dalit" considered as lowest caste in Hindu caste system and considered as untouchable caste in many South Asian societies mostly in India and Nepal. In past decades, Dalit mothers in Nepal had triple barriers, first being women they had lack access to nutrition and care; second, as Dalits and marginalized group they were mostly in social in exclusion, third they belonged to under-developed country. Due to all these barrers, to maintain a good nutrition was a great challenge for them. Couple of evidences have shown that the nutritional status of Dalit mothers is significantly poorer than the Non-Dalits since history as a result of Dalit women's exclusion in socio-economic and political dimensions. However, research based information regarding maternal nutrition from the study communities is lacking. Therefore, current study has focused to explore the nutritional status and its determinants of Dalit mothers along with comparison to Non-dalits.

Objective

To assess and compare the nutritional status of Dalit mothers with Non-Dalit mothers and explore its determinants.

Methodology

A cross-sectional analytical study was carried out in 720 Dalit and Non-Dalit mothers during July to December 2011. Direct interview was conducted by using pre-designed interview schedule in three districts (Jhapa, Sunsari and Saptari) of eastern Terai, Nepal. Only married women of reproductive ages (15-49) years having at least one live birth during the past five year were included in the sample and others were excluded. Multistage sampling technique was applied to select the District and Village Development Committees (VDCs). The desired numbers of study units were selected by using simple random sampling method with the help of the list of eligible mothers available from the Village Development Committee and local Sub-health Post profile. In case the absence of respondents, the replacement was made by selecting eligible mothers from nearby household. Pre-designed interview schedule were used to collect the information and interview was conducted by researchers themselves. Height, weight and Mid-upper Arm Circumference (MUAC) of mothers were measured by using standard tools (height board, weighing machine and std. MUAC tape) and recorded. The results were analyzed first by bi-variate method (Chi-square test and independent sample t-test) in the first phase and if the variables were significant then further analysis were done by using Multivariate Logistic Regression in SPSS version 16. In this study, informed consent were taken from each subjects and also the protocol was approved by the Nepal Health Research Council Ethical Review Board (Approval Reg. No. 64/2011).

RESULTS

Assessment of nutritional status of mothers through recommended anthropometric measurements was done and compared between the two caste groups. In addition, the socio-demographic determinants were also explored. The results of the observation has been given below:

Nutritional Status of Mothers by Caste

The nutritional status of mothers was assessed with three anthropometric measurements: height, body mass index and MUAC. Short height reflects inadequate nutrition during childhood and adolescence. It is a risk factor for poor birth outcomes and obstetric complications for women. The height of women is considered as a risk when it is less than 145 cm. Body Mass Index and MUAC is an indicator to measure the whole nutritional status including under nutrition, overweight and obesity. Table no. 1 displays the nutritional status of mothers: the height, MUAC and body mass index according to the caste group. Among 720 mothers under study, 86 (11.9%) had height below 145 cm, 147 (20.4%) had thin MUAC and 277 (38.5%) had BMI below 18.5 cut off. According to the caste group, Dalit mothers had significantly poor nutritional status in all three indicators in compared to Non-dalits ($p<.001$). About 16 percent Dalit mothers had height below 145 cm, 25.8 percent had thin MUAC and 44 percent had BMI less than 18.5 cut off as compared to 8 percent (short height), 15 percent thin MUAC and 33 percent (<18.5 BMI) for Non-dalit mothers respectively. The mean Height, MUAC and BMI were significantly lower among the Dalit mothers with $p<.001$ in t-test (Table 1).

Height and Its Determinants

To find out the determinants of height of mothers, the caste, age, education and property ownership of mothers, wealth index of family and mother's involvement in decision-making in health were the variables considered under study. The percent distribution of height for mothers and its association with some selected socio-demographic factors has been given in table 2 below. Mothers' age, age at marriage, education, caste and wealth index of family were found significantly associated with the height of mothers ($p<.01$). Higher percent mothers were found with short height (<145 cm) in age group 35 years and above (22.4%), low age at marriage (13.9%), no-education (14.7%) and low wealth index (17.6%) in contrast to mothers of 25-34 years age group (10.1%), higher age at marriage (5.8%), grade 10 & above education (4.1%) and third (9.1%) and highest (4^{th} quartile) wealth index (5.7%). The mean height of mothers was also found varying among various socio-demographic groups.

Table 1. Percent Distribution of Height, MUAC and Body Mass Index (BMI) of Mothers by Caste

Measurements	Caste				χ^2 Test
Height	Dalit (360)	Non-Dalit (360)	Total (720)	N	(P Value)
<145 cm	15.8	8.1	11.9	86	χ^2=10.35
≥145 cm	84.2	91.9	88.1	634	P≤.001
Mean±SD	150.1±5.3	152.21±5.4	151.2±5.4	720	t= -5.23, p<.001
MUAC					
<21.0 cm	25.8	15.0	20.4	147	χ^2=13.001
≥21.0 cm	74.2	85.0	79.6	573	P<.001
Mean	22.3±2.1	23.3±2.4	22.8±2.3	720	t=-6.36, p<.001
BMI					
< 18.5	43.7	33.3	38.5	277	χ^2=9.9
18.5 - 24.9	54.3	62.5	58.4	420	P<.001
25 +	1.9	4.2	3.1	22	
Mean±SD	19.0±2.3	19.9±2.7	19.5±2.6	720	t= -6.57, p<.001

Table 2. Percent Distribution of Mothers according to Height and Socio-demographic Characteristics

Socio-Economic Variables	Height of mothers		
	< 145 cm	≥ 145 cm	N
Caste			
Dalit	15.8	84.2	86
Non-dalit	8.1	91.9	634
Significance Test		χ2=10.35	P≤.001
Mother's Age			
15 - 24 years	12.6	87.4	286
25-34 years	10.1	89.9	385
35+ years	22.4	77.6	49
Significance Test		X^2=6.46	P<.05
Decision-Making			
No	12.8	87.2	407
Yes	10.9	89.1	313
Significance Test		X^2=0.62	P>.05
Education			
No Education	14.7	85.3	416
Primary/Secondary	11.9	88.1	159
Grade 10 +	4.1	95.9	145
Significance Test		χ2=11.33	P<.01
Wealth Index Quartiles			
First	17.6	82.4	176
Second	13.7	86.3	164
Third	9.1	90.9	153
Forth	5.7	94.3	227
Significance Test		χ2=15.20	P<.01
Property Ownership			
No	13.7	86.3	372
Yes	10.1	89.9	348
Significance Test		X^2=2.28	P>.05
Total	10.9	88.1	720

Table 3. Logistic Regression Analysis on Determinants of Height (Nutritional Status) of Mothers

Determinants	N	OR	Weight for age	
			AOR	CI
Caste				
Dalit	360	1.00	1.00	Ref#
Non-Dalit	360	2.15	1.36	0.77 – 2.40
Age of Mothers				
< 20	33	3.20	5.37	0.90– 32.10
20-29	502	4.74	6.90	1.64 – 28.94**
30-39	174	3.75	4.79	1.18 – 19.43*
40+	11	1.00	1.00	Ref#
Wealth Index				
1	227	1.00	1.00	Ref#
2	153	1.35	1.40	0.77 -2.55
3	164	2.13	1.88	0.92 – 3.85
4+	176	3.55	2.50	1.00 – 6.30*
Education				
No Education	416	1.00	1.00	Ref#
Primary/Secondary	159	1.27	0.86	0.46 – 1.63
Grade 10+	145	3.98	2.01	0.74 – 5.50
Decision-Making				
No	407	1.00	1.00	Ref#
Yes	313	1.20	1.37	0.84 – 1.23

* Significant (P<0.05) ** highly significant (p<0.01)

Table 4. Percent Distribution of Mothers according to MUAC and Socio-demographic Characteristics

Socio-Economic Variables	MUAC of mothers		
	< 21.0 cm	≥ 21.0 cm	N
Caste			
Dalit	25.8	74.2	360
Non-dalit	15.0	85.0	360
Significance Test	$\chi2$=13.001	P≤.001	
Age at marriage			
<20 years	23.6	76.4	173
20 + years	10.4	89.6	547
Significance Test	$\chi2$=14.04	P<.001	
Education			
No Education	26.4	73.6	416
Primary/Secondary	12.6	87.4	159
Grade 10 +	11.7	88.3	145
Significance Test	$\chi2$=22.05	P<.001	
PCI Quartiles			
Lowest	29.3	70.7	176
Second	23.5	76.5	164
Third	15.0	85.0	153
Forth	13.3	86.7	227
Significance Test	$\chi2$=19.33	P<.001	
Wealth Index Quartiles			
Lowest	33.5	66.5	176
Second	19.0	81.0	164
Third	12.8	87.2	153
Forth	11.9	88.1	227
Significance Test	$\chi2$=37.69	P<.001	
Property Ownership			
No	26.1	73.9	372
Yes	14.4	85.6	348
Significance Test		$\chi2$=15.17	P<.001
Total	20.4	79.6	720

Table 5. Logistic Regression Analysis on Determinants of MUAC (Nutritional Status) of Mothers

Determinants	**N**	**OR**	**Weight for age**	
			AOR	CI
Wealth Index				
First	227	1.00	1.00	Ref#
Second	153	2.15	2.06	1.26 – 3.37*
Third	164	3.43	3.12	1.82 – 5.35**
Forth	176	3.72	3.05	1.75 – 5.29**
Age at Marriage				
<20 years		1.00	1.00	Ref#
20 Years +		2.66	1.96	1.13 – 3.40*

* Significant (P<0.05) ** Highly significant (p<0.01)

Table 6. Percent Distribution of Mothers' Body Mass Index by Socio-demographic Characteristics

Socio-Economic Variables	Body Mass Index (N=240)			N
	< 18.5	18.5 – 24.9	25 & Above	
Age of Mothers				
< 20 years	48.5	51.5	0.0	33
20-29 years	39.8	58.0	2.2	502
30-40 years	32.2	62.1	5.7	174
40 & Above	45.5	45.5	9.1	11
Significance test		$\chi2$=11.70	P<.10	-
Caste				
Dalit	43.7	54.3	1.9	360
Non-dalit	33.3	62.5	4.2	360
Significance test		$\chi2$=9.9	P<.001	-
Education				
No Education	45.1	54.0	1.0	416
Primary-Secondary	34.0	61.0	5.0	159
Metric/SCL & Above	24.8	68.3	6.9	145
Significance test		$\chi2$=31.47	P<.001	-
Wealth Index				
Low	44.9	53.7	1.3	227
Lower-middle	41.2	56.9	2.0	153
Upper-middle	39.0	57.9	3.0	164
High	27.3	66.5	6.2	176
Significance test		$\chi2$=20.09	p<.01	-
Property Ownership				
No	44.7	53.9	1.3	372
Yes	31.9	63.2	4.9	348
Significance test		$\chi2$=17.70	P<.001	-
Decision Making				
No	42.6	54.9	2.5	407
Yes	33.2	62.9	3.8	313
Significance test		$\chi2$=6.95	p<.05	-
Total	38.5	58.4	3.1	720

In an average, not educated mothers were about 2 cm shorter (151 cm) than educated (153 cm) and mothers from lowest (first quartile) wealth index were about 4.5 cm shorter (149.3 cm) than the mothers from highest wealth Index quartiles (153.8 cm). Dalit mothers were 2 cm shorter than Non-dalits and almost same pattern was observed with property and without property ownership of mothers (Table 2).

Caste, mothers' age, education, property ownership, decision-making, wealth index and numbers of CEB were adjusted to explore the determinants of height in multivariate analysis. Among seven variables only two: age of mothers and wealth index were found significant determinants for the height (table 3). Mothers of younger ages (below 40 years) had better height than the older mothers (40 years and above). The odds of below 20 years mothers was 5.37 (CI: 0.90 – 32.10) times higher, 20-29 years mothers was 6.9 (CI: 1.64 – 28.94) times higher and 30-39 years mothers was 4.79 (CI: 1.18 -19.43) times higher in reference to the height of 40 years and above ages mothers. The height was much better among the mothers of 20-29 years (Table 3). Though, caste, numbers of CEB, decision-making and education were found insignificant; caste, education and decision-making had some influences in acquiring the height of mothers.

MUAC of Mothers and Its determinants

To find the determinants of MUAC of mothers, the caste, age, education, property ownership of mothers, per capita income and wealth index of family and mother's involvement in decision-making in health were the variables considered under study. Caste, age at marriage, education, property ownership of mother, per capita income and wealth index of family were found significantly associated with the MUAC of mothers (p<.001). The Dalit caste, age at marriage below 20 years, mother with no education, lowest and second quartile per capita income and wealth index group as well as mothers without property ownership were associated with thin MUAC (<21.0 cm) in bi-variate analysis (Table 4).

Caste, age at marriage, education, per capita income, and wealth index as well as property ownership of mothers were adjusted to explore the determinants of MUAC of mothers in multivariate analysis. Among six variables only two: wealth index and age at marriage were found significant determinants for the MUAC of mothers (Table 4). The odds of mothers with age at marriage 20 years and above was 1.96 (CI: 1.13 – 3.40) times higher than mothers with age at marriage below 20 years in acquiring normal MUAC. Similarly, mothers from highest wealth Index group had 3.05 (CI: 1.75 – 5.29) times higher and mothers from second highest wealth Index group had 3.12 (CI: 1.82 – 5.35) times higher chance of getting normal MUAC than the mothers from lowest wealth index group.

The influences of caste, education, property ownership, per capita income were not found significant.

BMI of Mothers and Its determinants

In table 6, the body mass index (BMI) has been given according to the various socio-demographic background of the mothers. Caste, education, wealth index, property ownership and decision-making capacity of mothers were significantly associated with normal BMI status of mothers (p<.001).

Table 7. Logistic Regression Analysis on Determinants of Body Mass Index of mothers

Determinants	N	OR	BMI	
			AOR	CI
Caste				
Dalit	360	1.00	1.00	Ref#
Non-Dalit	360	1.55	1.01	0.69 – 1.47
No. of CEB				
1	240	1.52	1.58	0.88 – 2.85
2	232	1.68	1.76	1.02 – 3.01*
3	136	1.13	1.12	0.65 – 1.93
4+	112	1.00	1.00	Ref#
Education				
No Education	416	1.00	1.00	Ref#
Primary/Secondary	159	1.59	1.45	0.94 – 2.24
Grade 10+	145	2.47	1.86	1.08 – 3.19*
Property Ownership				
No	372	1.00	1.00	Ref#
Yes	348	1.72	1.37	0.96 -1.95
Decision-Making				
No	407	1.00	1.00	Ref#
Yes	313	1.49	1.47	1.07 – 2.04*

* significant

In addition, wealth index of family and age of mothers were also found associated with BMI (p<.01). Nearly half (48.5%) of the teenage mothers and mothers of 40 years and above ages (45.5%) had BMI less than 18.5 (malnourished) but the BMI of mothers in age group 30 - 39 was slightly better (only 32.2% had BMI below 18.5). Non-educated mothers were about 2 times (45.1%) under nourished in compared to grade 10 & above educated and mothers with lowest wealth index (44.9%) were more than one and half times under nourished than the highest wealth index quartile (27%). Obesity was also associated with the socio-demographic status of mothers especially with mothers' age 40 years & above, higher wealth index of family and grade 10 & above education as well as property ownership of mothers. Similarly, Dalit mothers (43.7%) were nearly one and half times malnourished than the Non-Dalits (33.3%), (Table 6). The multivariate analysis on mothers' BMI status has been given in Table 7. Numbers of children ever born, education and decision making were found significant determinants of mothers normal BMI. The odds of having BMI among mothers with two live births was 1.76 (CI: 1.02 – 3.01) times higher and with single live births was 1.58 (CI: 0.88 – 2.85) times higher in reference to the mothers with four & above live births. Mothers with grade 10 and above education had 1.86 (CI: 1.08 – 3.19) times higher chances to have normal BMI than the non-educated mothers. Mothers with decision making capacity in health had 1.47 (CI: 1.07 – 2.04) times higher chances to have normal BMI than their counterparts. Mothers' property ownership also had some influence on mothers' BMI as well as wealth index but age of mothers and caste had no significant influence (Table 7).

DISCUSSION

Nutritional status of mothers was assessed by three anthropometric measurements: height, mid-upper arm circumference and body mass index. In general, short height

reflects inadequate nutrition during childhood and adolescence. However, it could be genetic also. Scientifically, the height of women is considered as a risk factor for safe delivery when it is less than 145 cm. MUAC and Body Mass Index is mostly associated with whole nutritional status. The mean height of the mothers was found 151.2 cm (SD 5.4). In total, 12 percent mothers had height below 145 cm (stunted), 20 percent had thin MUAC and 39 percent were undernourished according to BMI (<18.5 cut off). According to the caste group, Dalit mothers had significantly poor nutritional status as compared to the figure of Non-dalits. About 16 percent Dalit mothers had short height (<145 cm), about 26 percent had thin MUAC and 44 percent had low BMI as compared to 8, 15 and 33 percent Non-dalit mothers, respectively. While observing according to socio-demographic background, mother's age, education, per capita income and wealth index were significantly associated with Height and BMI both. In addition, mother's decision-making and property ownership was also found significantly associated with BMI but not with height. Similarly, mother's age at marriage, education, per capita income and wealth index were significantly associated with MUAC. Non-educated mothers had about double (45.1 vs. 24.8%) low BMI and three times (14.7 vs. 4.1%) more stunting as compared to grade 10 & above educated mothers. Likewise, mothers with lowest wealth quartile were three fold (17.6% vs. 5.7%) likely to be stunted and significantly underweight than the mothers with highest quartile. Obesity was also mainly associated with mothers' age 40 years & above (9.1%), higher wealth index (6.2%) and grade 10 & above education (6.9%) as well as property ownership of mothers in univariate analysis (Table 1, 2 and 4). When caste, age of mothers, numbers of CEB, education, wealth index of family and mother's involvement in decision-making were adjusted in multivariate analysis, only age and wealth index were found significant determinants for the height of mothers. The odds of getting normal height among below 20 years was 5.37 (CI: 0.90 – 32.10) times, 20-29 years was 6.9 (CI: 1.64 – 28.94) times and 30-39 years was 4.79 (CI: 1.18 -19.43) times higher in reference to 40 years and above mothers. Mothers' age at marriage and wealth index were found key determinants of MUAC of mothers. Numbers of children ever born, education and decision making were found significant determinants of mothers BMI. The odds of having normal BMI among mothers with two live births was 1.76 (CI: 1.02 – 3.01) times and with single live births was 1.58 (CI: 0.88 – 2.85) times higher in reference to the mothers with four & above live births. Mothers with grade 10 and above education had 1.86 (CI: 1.08 – 3.19) times and mothers with decision making capacity had 1.47 (CI: 1.07 – 2.04) times better chances to have normal BMI than the non-educated mothers (Table 3, 5 and 7).

Findings suggest us that though there was high difference in nutritional status of Dalit and Non-dalit mothers, it was not only due to caste but due to some other variables like education, wealth index and mothers' decision making capacity in the household. The NDHS 2011 showed that more than 18 percent mothers were found with BMI below 18.5 and 11.6 had height below 145 cm. The data was analyzed further by Panday et al. (2013) and found similar results that caste/ethnicity, age, education, number of children ever born, media exposure and tobacco use were significant determinants of BMI of mothers. Though, Dalit mothers had poor BMI, Muslim mothers were poorest among all. Bennet et al. (2008) in a further analysis of NDHS 2006 data found that Terai/Madhesi Dalit and Muslim women had the poorest nutritional status.

In 2006 they were among the groups with the highest proportion of women who were considered moderately or severely thin. Further analysis of DHS 2000 data in Ethiopia was done by Girma et al. (2002) and in multivariate analysis they found slight contradictory results. While adjusting for different 9 socio-demographic variables place of resident, religion, economic status of household, employment of women, decision making capacity and age were found as predictor variables of nutritional status of women. Surprisingly, education was found insignificant but in this study finding, education had one of the major impact.

Limitation

The nutritional assessment of mothers was done based on only anthropometric measurements, other aspect of nutritional status is not covered in this study.

Conclusion

- Twelve percent mothers had height below 145 cm, and 38.5% had low BMI (<18.5 cm). About 16% Dalit mothers had height below 145 cm and 44% had low BMI as compared to 8% and 33% for Non-dalits, respectively. The mean height of mothers was observed as 151.17 cm.
- Mothers' age, age at marriage, education, caste and wealth index of family were found significantly associated with the height of mothers in bi-variate analysis. In multivariate analysis, age of mothers and wealth index were found significant determinants for height. Mothers of younger ages (below 40 years) had better height than the older women (40 years and above).
- Caste, education, wealth index, property ownership, wealth index of family, age of mothers and decision-making capacity were significantly associated with mothers' BMI in bi-variate analysis. The numbers of CEB, education and decision making capacity were found significant determinants of mothers BMI in multivariate analysis.
- Younger mothers, mothers without education and decision making capacity in health had lower chances to have normal BMI.

Hence it could be concluded that though there was significant association on nutritional status of Dalit and Non-dalit mothers, it was not only due to caste system but mostly due to other socio-economic status of mothers.

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