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RESEARCH ARTICLE

MATERNAL HEALTH IN EASTERN TERAI, NEPAL: STILL A CHALLENGE AMONG THE DALIT MOTHERS

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ABSTRACT

Background: Maternal death and disability rates prevails the huge differentials that exist between mainstreamed and excluded groups across the country. The low level of Maternal-Child Health service utilization, lack of awareness and education, early age at marriage, and poor nutritional status and more affect the total well being of Dalit mothers. Objective of this is to assess the maternal health care practices and services utilized by the Dalit and Non-Dalit mothers in Eastern Terai, Nepal.

Methods: A cross-sectional study was carried out with 720 Dalit and Non-Dalit mothers during July to December 2011. Direct interview was held by using interview schedule with the selected mothers in three districts of eastern Terai, Nepal. Mothers having at least one live birth 5 year preceding the survey were included. Results were analysed by using SPSS software version 16.

Results: The socio-economic and demographic status of Dalit mothers was comparatively lower than the Non-Dalit mothers. Significant difference in the MCH care and service utilization is also observed. Dalit mothers made less Antenatal Care visits, less pregnancies were checked in health facilities and by health professionals (P<.001). Similar trend are also observed in the institutional delivery and delivery attendance by health professionals (P=<.001). Postnatal Care visits was less among the Dalit mothers (13.4 %) in compared to Non-Dalit (P<.001). Lack of awareness, lack of family support, poverty and lack of transportation facility were key barriers for the utilization of MCH services.

Conclusions: Significant differences in MCH care and service utilization is observed between Dalit and Non-Dalit mothers; hence, a special focus has to be provided for the Dalits by the government as well as other concerned agencies.

INTRODUCTION

Maternal health care signifies the health services received by women during pregnancy, delivery and post-delivery period. Survival and well-being of both the mother and the new-born, by and large, depend upon maternal and child health care. Millennium Development Goals (MDGs) 3 and 5 ensure better health of mother and lay the responsibility upon the state[1]. Maternal death and disability rates prevails the huge differentials that exist between mainstreamed and excluded groups all across the country. The low level of awareness, low opportunity of education, early age at marriage, poor nutritional status, and high rate of fertility, low per capita income and many more affect the total well being of Dalit mothers, which further ensue in mass malnutrition and high maternal death as well (**Demographic and Health Survey 2006**). This study is heading to assess the maternal health care status and service utilization between Dalit and Non-dalit mothers. The objectives of the study is to assess the maternal health care practices and services utilized by the Dalit and Non-Dalit mothers in Eastern Terai, Nepal.

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MATERIALS AND METHODS

A cross-sectional study was carried out in 720 eligible 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 of VDCs. In case the absence of respondents, the replacement was made by selecting eligible mothers from nearby household. To determine the required sample size a pilot study was conducted

involving 50 eligible subjects. In the pilot study, the highest non-utilizers of maternal health care services were approximately 70 percent. Taking this figure into account the estimated sample size was calculated at 10 percent permissible error using the following formulae.

$n = Z^2 \times p \times q \times D/d^2$
$= 3.84 \times 70 \times 30 \times 2/(7)^2$
$= 329.14 \approx 330$
for two groups Dalit and Non Dalit
$= 330 \times 2 = 660$ and considering about 9% non-response
= 720, hence we interviewed 720 study subjects in our study.

The results were analysed 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 was done by using Multivariate Logistic Regression in SPSS version 16. This study has been approved by the Nepal Health Research Council Ethical Review Board (Approval Reg. No. 64/2011).

The purpose and importance of the study described to the participants verbally in local language and a written consent in Nepali language was taken from each participant before including them in this study.

RESULTS

Researchers were interested to know the socio-economic status, maternal health status and MCH services utilization of Dalit mothers in comparison to Non-dalit mothers. Table 1 describes the socio-economic and demographic characteristics of the mothers. Though we were aware to minimize the differences regarding the socio-economic and demographic status between Dalits and Non-Dalits, Dalits had lower income (PCI NRs. 1200), poor educational status (1.32 Mean years of schooling), worse occupational status (wage/labourer 47.5%), lower age at marriage (16.9), lower age at first pregnancy (18.5), shorter spacing between children as well as higher Children Ever Born (CEB 2.6). The Chi-Square test and t-test value is significantly

Table 1. Socio-economic and demographic characteristics of Dalit and Non-dalit mothers, Eastern Terai, Nepal 2011

Background Characteristics	Caste			Test of Significance	
	Dalit	Non-Dalit	Total	$\chi 2$ (df)/t-value	P-value
Occupation of Mothers					
Agriculture	106 (29.4)	152 (42.2)	258(35.8)	147.33 (4)	<.01
Service/Job	3 (0.8)	19 (5.3)	22 (3.1)		
Business	6 (1.7)	12 (3.3)	18 (2.5)		
Wage/Labourer	171 (47.5)	29 (8.1)	200 (27.8)		
Housewives	74 (20.6)	148 (41.1)	222 (30.8)		
Decision-Making in Health					
Self	30 (8.3)	39 (10.8)	69 (9.6)	13.83 (4)	<.01
Husband	117 (32.5)	76 (21.1)	193 (26.8)		
Both of Us/Mutually	120 (33.3)	124 (34.4)	244 (33.9)		
Parents in law	87 (24.2)	115 (31.9)	202 (28.1)		
Others	6 (1.7)	6 (1.7)	12 (1.7)		
Per Capita Income (NRs.)	1200±881	2612±2092	1906±1753	-11.80	.00
Demographic Characteristics					
Mean Age of Mothers (yrs)	26.2±4.9	26.3±5.0	26.2±4.9	-1.72	.08
Age at Marriage (yrs)	16.9±2.3	18.6±3.3	17.8±3.0	- 8.08	.00
Age at First Pregnancy (yrs)	18.5±2.4	20.0±3.2	19.2±2.9	- 7.18	.00
Children Ever Born	2.6±1.4	2.0±1.1	2.3±1.3	6.71	.00
Total Pregnancy Experience	2.9±1.7	2.1±1.3	2.5±1.5	4.16	.00
Last Child Spacing (months)	33.0±18.0	45.8±26.4	38.6±22.9	-6.28	.00
Mean years of schooling	1.32±2.8	5.5±4.8	3.4±4.5	-14.21	.00

Table 2. Status of Antenatal Care Services Utilized by the Dalit and Non-Dalit mothers, Eastern Terai, Nepal 2011

Antenatal Care Components	Caste			χ^2 test	
	Dalit	Non-Dalit	Total	Value (df)	P Value
Antenatal Care Visits					
Three and More	202(56.1)	294(81.7)	496(68.9)	63.11 (3)	<.001
Two times	67(18.6)	42(11.7)	109(15.1)		
Once	35(9.7)	13(3.6)	48 (6.7)		
None	56(15.6)	11(3.1)	67(9.3)		
Place of ANC					
Hospital/Nursing Home	27 (7.5)	92 (25.6)	119 (16.5)	72.44 (4)	<.001
PHC Centre	120 (33.3)	124 (34.4)	244 (33.9)		
HP/SHP	143 (39.8)	114 (31.7)	257 (35.7)		
Private/Clinics/Pharmacy	12 (3.3)	19 (5.3)	31 (4.3)		
None	58 (16.1)	11 (3.1)	69 (9.6)		
ANC Providers					
Doctor/Nurse/Midwifes	118(32.8)	210(58.3)	328(45.6)	61.28 (3)	<.001
Health Assistants	183(50.8)	133(36.9)	316(43.9)		
Other Health Workers	6(1.7)	6(1.7)	12 (1.7)		
None	53(14.7)	11(3.1)	64 (8.9)		
TT Utilization					
Full Dose	276(76.7)	322(89.4)	598(83.1)	28.66 (2)	<.001
Partial	42(11.7)	30(8.3)	72(10.0)		
None	42(11.7)	8(2.2)	50(6.9)		
Iron/Folic Utilization					
Required Dose	168 (46.7)	252 (70.2)	420 (58.5)	39.72 (2)	<.001
Partial	116 (32.2)	69 (19.2)	185 (25.7)		
None	76 (21.1)	39 (10.8)	115 (16.0)		

differs in all parameters (P=<.01). Moreover, the decision making power in health also better among the Non-dalit mothers.

Table 2 describes the Antenatal Care services utilized by the mothers in the both groups Dalit and Non-Dalits. The Status of Dalit mothers was quite behind the Non-Dalit mothers in all parameters; Antenatal Care visits three times and more (Dalits 56.1% and Non-Dalit 81.7%; p-value <.001), pregnancy checked in Hospital/Nursing Home and PHC Centre (Dalits 40.8% and Non-Dalits 60.0%, p-value <.001), ANC provided by health professionals (Dalits 32.8% and Non-Dalits 58.3%; p-value <.001). The required dose of TT and Iron/Folic taken were 76.7 per cent and 46.7 per cent respectively among Dalit and 89.4 per cent and 70.2 per cent were among Non-Dalit mothers (P-value <.001).

Table 3 shows the Delivery Care services utilized by the mothers. Only 31.2 per cent Dalit mothers delivered their last baby at health facility compared to 55.3 per cent Non-Dalit mothers (Chi-square test df=6, p-value <.001); more than 60 percent Dalit and 37.5 percent Non-Dalit mothers had delivered their babies at home. The delivery assisted by health professionals (Doctor/Nurse/Midwifes) was also better among the Non-Dalits (Dalits 29.7% and Non-Dalits 55.0%; Chi-square value 52.11, df=5, p-value <.001). Among the home delivered babies, 20.6 percent Dalit and 37.3 percent Non-dalit mothers used safe delivery kit for the safety of mothers and newborn, still there is significant difference (Chi-square test P=<.01, Table 3).

Though there is a considerable percentage of institutional delivery among the both castes the first post-natal check-up (within 48 hrs) by health professionals was found poor among both castes (Dalits 18.3% and Non-dalits 45.8%). The first post-natal check-up made mostly by the mothers who delivered their babies at health facility. Who delivered at home, rarely went for check-up (Table 4). However, the check-up status is found better among Non-dalits compared to their counterparts (P-value <.001). Similarly, only 13.4 percent Dalit and 25.6 percent Non-dalit mothers made postnatal visits within 6 weeks of delivery and 86.7 percent Dalit and 74.4 percent Non-dalit mothers did not make any postnatal check-up and the status is found better among the Non-dalits(P<.001, Table 4).

Table 3. Status of Delivery Care services Utilized by the Dalit and Non-Dalit mothers, Eastern Terai, Nepal 2011

Delivery Care Components	Caste			χ^2 test	
	Dalit	Non-Dalit	Total	Value(df)	P Value
Place of Delivery					
Hospital/Nursing Home	83 (23.1)	173 (48.1)	256 (35.6)	51.90 (3)	<.001
PHC Centre	29 (8.1)	26 (7.2)	55 (7.6)		
HP/SHP/ Pharmacy	29 (8.1)	26 (7.2)	55 (7.6)		
Home	219 (60.8)	135 (37.5)	354 (49.2)		
Delivery Assistance					
Doctors/Nurse/Midwifes	107 (29.7)	198 (55.0)	305 (42.4)	52.11 (5)	<.001
Health Assistants	52 (14.4)	47 (13.1)	99 (13.8)		
Non-Pro Health workers	16 (4.4)	13 (3.7)	29 (4.0)		
TBA	46 (12.8)	25 (6.9)	71 (9.9)		
Relatives & Others	125 (34.7)	67 (18.6)	192 (26.6)		
None	14 (3.9)	10 (2.8)	24 (3.3)		
Safe Del Kit Used					
Yes	45 (20.6)	50 (37.3)	95 (27.0)	11.71 (1)	<.01
No	173 (79.4)	84 (62.7)	257 (73.0)		

Table 4. Status of Post-Delivery Care Services Utilized by Dalit and Non-Dalit mothers, Eastern Terai, Nepal 2011

Components	Caste			χ^2 test	
	Dalit	Non-Dalit	Total	Value (df)	P-Value
Check-up after Delivery (48 hrs)					
Doctors/Nurse/Midwifes	66 (18.3)	165 (45.8)	231(32.1)	68.36 (4)	<.001
Health Assistants	85 (23.6)	74 (20.6)	159 (22.1)		
Other Health workers	23 (6.4)	10 (2.8)	33 (4.6)		
TBA	10 (2.8)	3 (0.8)	13 (1.8)		
No Check-up	176 (48.9)	108 (30.0)	284 (39.4)		
Post-Delivery visit (≤6 weeks)					
Doctors/Nurse/Midwifes	24 (6.7)	53 (14.7)	77(10.7)	19.60 (2)	<.001
Health Assistants	20 (5.6)	37 (10.3)	57 (7.9)		
Other Health workers	4 (1.1)	2 (0.6)	6 (0.8)		
No Check-up	312 (86.7)	268 (74.4)	580 (80.6)		
Vitamin A Intake					
Yes	213 (59.2)	243 (67.5)	456 (63.3)	5.92 (2)	<.001
Don't Remember	32 (8.9)	30 (8.4)	62 (8.6)		
No	115 (31.9)	87 (24.2)	202 (28.1)		
Iron Intake during PP*					
Yes	100 (27.8)	166 (46.5)	266 (37.1)	34.93 (2)	<.001
Partial	34 (9.4)	29 (8.1)	63 (8.8)		
No	226 (62.8)	162 (45.4)	388 (54.1)		

Vitamin A intake is considered another important component for the postnatal heath care and it is supplemented by government to the newly delivered mothers. In this study 59.2 percent Dalit and 67.5 percent Non-dalit mothers had taken this dose within 6 weeks of delivery. About 28 percent had not taken the supplementation and rest 8.6 percent mothers did not remember whether they take or not. Similarly iron/folic intake also made continued for additional 6 weeks following delivery in the MCH program. Some 27.8 percent Dalit and 46.5 percent Non-dalit mothers had taken the supplementation as recommended by the program and rest 8.8 percent took partially and 54.1 percent had not taken. Though the supplementation status was not very good, Non-Dalit mothers had utilized better Vitamin A and Iron/folic intake (P <.001; Table 4).

When the differences of socio-economic and demographic as well as MCH service utilization variables among Dalit and Non-dalit were found significant in bi-variant analysis, multivariate analysis was carried out to examine the effect of variables. Almost all variables were significant in bi-variate analysis, but only few were significant in the multivariate analysis. In the multivariate analysis the forward stepwise logistic regression method is used to determine the model.

The variables with significant effect on socio-economic and demographic status among Dalit and Non-dalit mothers from the logistic regression include: educational status of mothers, occupation of mothers, per capita income of family and main occupation of the family (P<.01: Table 5).

The variables with significant effect of logistic regression on MCH service utilization include: Place of antenatal care, iron/folic intake, TT intake, delivery attendants and post-delivery check-up within 48 hours. The logistic regression confirms that antenatal care in hospital/nursing home are more utilised by Non-dalit mothers than the Dalit mothers (P-value <.01; odds ratio 3.691) which further results on better maternal child health status. It suggests that Dalit mothers should be encouraged taking services from the hospital/nursing homes to improve their maternal and child health status. Non-dalit mothers also had better utilization of iron/folic supplementation, TT vaccination completed, delivery attended by health professionals and health assistants as well as post-delivery check-up by doctors (P<0.01). The better utilization of these services indicates better maternal and child health status among the Non-dalit mothers than the Dalit mothers (Table 6). To see the barriers on MCH service utilization some key bottlenecks are assessed.

Table 5. Logistic Regression Results on Socio-economic Characteristic of the Dalit and Non-dalit Mothers, Eastern Terai, Nepal 2011

Determinants	β estimated (SE)	df	P- value	AOR	CI (95.0%)
Main Occupation		5	.006		
Agriculture	0.317 (0.269)	1	.23	1.373	0.811-2.323
Service	0.455 (0.479)	1	.34	1.575	0.616-4.027
Business	-0.610 (0.403)	1	.13	0.543	0.246- 1.198
Foreign Employment	-0.812 (0.299)	1	.00	0.444	0.247- 0.798
Domestic profession & Others	-0.658 (0.574)	1	.25	0.518	0.168- 1.594
Wage/Labourer	1.000	-	-	1.000	000
Education of Mothers	0.119 (0.26)	1	.00	1.126	1.070- 1.186
Occupation of Mothers		4	.00		
Agriculture	1.481 (0.284)	1	.00	4.397	2.522 – 7.666
Service	2.384 (0.800)	1	.00	10.844	2.258- 52.068
Business	2.117 (0.631)	1	.00	8.304	2.413- 28.576
Housewives/Others	1.619 (0.286)	1	.00	5.047	2.883- 8.833
Wage/Labourer	1.000	-	-	1.000	000
Per Capita Income	0.001 (0.000)	1	.00	1.001	1.001-1.001

Table 6. Logistic Regression Results on Maternal Health Service Utilization among the Dalit and Non-dalit Mothers, Eastern Terai, Nepal 2011

Determinants	β estimated (SE)	Df	P- value	AOR	CI (95.0%)
Place of ANC		4	.00		
Hospital/Nursing Home	1.306 (0.395)	1	.00	3.691	1.702-8.003
PHC Centre	0.252 (0.339)	1	.45	1.286	0.662-2.499
HP/SHP	0.019 (0.343)	1	.95	1.019	0.520-1.995
Private Clinics	0.667 (0.503)	1	.18	1.949	0.728-5.219
None/Other	1.000	-	-	1.000	1.000
Iron/Folic Intake	0.008 (.002)	1	.00	1.008	1.005-1.011
TT Intake		2	.03		
Completed	-1.099 (0.455)	1	.01	0.33	0.137-0.812
Partially	0.051 (0.256)	1	.84	1.05	0.637-1.740
Not Taken	1.000	-	-	1.000	1.000
Delivery Attendants		5	.00		
Doctor/Nurse/Midwifes	-1.198 (0.418)	1	.00	.30	0.133-0.685
Health Assistants	-1.205 (0.445)	1	.00	.30	0.125-0.716
Other Health workers	-0.806 (0.541)	1	.13	.46	.155-1.289
TBA	-1.602 (0.440)	1	.00	.20	.085-.477
Relatives & Other	-1.469 (0.356)	1	.00	.23	.115-.462
None	1.000	-	-	1.000	1.000
Check-up after Delivery (within 48 hrs)		4	.01		
Doctors/Nurse/Midwifes	0.723 (0.313)	1	.02	2.06	1.115-3.807
Health Assistants	0.061 (0.286)	1	.83	1.06	0.606-1.862
Other Health workers	-0.970 (0.470)	1	.03	0.38	0.151-0.953
TBA	-0.733 (0.750)	1	.32	0.48	0.111-2.091
None	1.000	-	-	1.000	1.000

The major barriers for not utilizing ANC services were reported as feel no need/ no idea on its importance, family does not support/far and Poverty and others ((Dalit 8.4%, 4.2% and 2.8% respectively). The difference between Dalit and Non-dalit is still significant (p<0.1). In performing an institutional and safe delivery, lack of adequate awareness, far/lack of transportation facility, family does not support and poverty were the major barriers. Among them awareness lack was the key barrier (25.6% for all). Though both the caste have affected by the various bottlenecks to utilize the MCH services, Dalit are much affected than the Non-dalits where the chi-square test performed and the p-value is <.01. The major reasons behind not taking nutritious food were poverty, lack of family support, not accessible and traditional beliefs. Sickness during pregnancy and lack of awareness were also some other additional bottlenecks (Table 7).

All the factors (bottlenecks) were found significant between Dalit and Non-dalits in bi-variate analysis, multivariate logistic regression analysis also done to see the real impact of variables.

Only poverty and others is found significant among the barriers of ANC visits (p-value 0.05). Awareness lack, lack of family support and poverty and others were found significant barriers for institutional delivery (P-value 0.02; AOR 0.203, 0.506 and 0.630 respectively). All of the barriers were found significant between Dalit and Non-dalit for not taking nutritious food. Poverty, lack of family support and lack of awareness were highly significant barriers (P-value <0.01) and food not accessible, traditional beliefs and pregnancy sickness were also significant (P-value ≤0.03). It concludes that the MCH bottlenecks also highly influenced Dalit mothers than the Non-dalit mothers in utilizing MCH services (Table 8).

DISCUSSION

Dalits are considered as the marginalised caste in Hindu caste hierarchy. In preliminary Hindu society they were treated as the "untouchable" caste and only allowed to serve the higher cast people with considerably minority work. In some literature Dalits are economically exploited, politically voiceless, socially humiliated.

Table 7. Factors Responsible for MCH Service Non-Utilization among Dalit and Non-Dalit Mothers Eastern Terai, Nepal 2011

Factors	Caste Status			χ^2 significance test
	Dalit	Non Dalit	Total	
Reasons Behind Not Utilized ANC Services				
Feel No Need/No Idea	30 (8.3)	7 (2.0)	37 (5.1)	32.62, 3, P<.01
Family does not support/Far	15 (4.2)	3 (0.8)	18 (2.5)	
Poverty and others	10 (2.8)	1 (0.3)	11 (1.5)	
NA	305(84.7)	349 (96.9)	654 (90.8)	
Reasons Behind Non-Institutional Del				
Feel No need/Awareness lack	110 (30.6)	74 (20.6)	184 (25.6)	46.06, 4, <.01
Far/lack of transportation	48 (13.4)	35 (9.7)	83 (11.5)	
Family does not support	46 (12.8)	23 (6.4)	69 (9.6)	
Poverty/Others	17 (4.7)	3 (0.8)	20 (0.8)	
NA(Inst. Del)	140 (38.9)	225 (62.5)	365 (50.7)	
Reason Behind Not taking Nutritious Food				
Poverty/No Money	184 (51.1)	60 (16.7)	244 (33.9)	145.73, 6, <.01
Lack of Family Support	75 (20.8)	50 (13.9)	125 (17.4)	
Not Accessible	38 (10.6)	101 (28.1)	139 (19.3)	
Traditional Beliefs	30(8.3)	59 (16.4)	89 (12.4)	
No Idea	15(4.2)	13 (3.6)	28 (3.9)	
Sickness	10(2.8)	22 (6.1)	32 (4.4)	
NA	8 (2.2)	32 (4.4)	63 (8.8)	

Table 8. Logistic Regression Analysis of Factors Responsible (Bottlenecks) for MCH Service Utilization Eastern Terai, 2011

Bottlenecks of MCH service utilization	B	S.E.	Df	P-value	AOR	C.I.
Reasons of not making ANC visit			3	.03		
Feel no need/No idea	-1.905	1.096	1	.08	0.149	0.017-1.276
Family does not support/ Far	-1.052	.670	1	.11	0.349	0.094-1.299
Poverty and Others	-0.889	.464	1	.05	0.411	0.165-1.021
Reasons for not having Institutional Delivery			4	.01		
Feel No need/awareness lack	-1.596	.699	1	.02	0.203	0.051-0.798
Far/ lack of transportation	-.271	.278	1	.32	.762	0.442-1.314
Family does not support	-.681	.307	1	.02	.506	0.278-0.923
Poverty/Others	-.463	.209	1	.02	.630	0.418- 0.949
Reasons for not taking nutritious food			6	.00		
Poverty/No money	-2.794	.414	1	.00	.061	0.027- 0.138
Lack of Family Support	-2.059	.432	1	.00	.128	0.055- 0.297
Not Accessible	-1.075	.449	1	.01	.341	0.142- 0.823
Traditional Beliefs	-.905	.429	1	.03	.405	0.175- 0.938
No Idea	-1.845	.547	1	.00	.158	0.054- 0.462
Sickness	-1.133	.548	1	.03	.322	0.110- 0.943

Though the Muluki Ain (2020) of Nepal eradicate the cast hierarchy legally in Nepal and open the cast barrier in all public places, the social psychology and practice of common people is still strongly discriminatory (**Bennett *et al.*, 2006**). As a result majority of Dalits are far behind in social, economic, demographic as well as development paradigm. Among the total population of Nepal, 11.7 percent are Dalits consisting 7.1 Non-Madhesi and 4.7 Madhesi Dalits (**Central Bureau of Statistics, 2003**).

According to the findings of present study the situation of Dalit mothers are considerably worse than the Non-dalit mothers almost in all dimensions (PCI Nrs.1200/month, Age at marriage 16.9 years, age at first child bearing 18.5 years, CEB 2.6 and mean years of schooling is only 1.32 years). The NDH survey 2006 also showed the same trend in various dimension. However, the fertility of Terai Dalit was 3.8 in 2006 but now much lower (CEB 2.6) it could be due to the impact of strong MCH and family planning program implemented by the government. Similar improvement also could be seen in other socio-economic variables too (**Nepal Demographic and Health Survey 2006; Nepal Demographic and Health Survey 2011**).

The maternal health care service utilization is also found poor among the Dalit mothers in contrast to the Non-Dalit mothers. The result form multivariate analysis showed ANC from a health facility, Iron/Folic intake, required dose of TT intake, delivery from a health professional (SBA) and post delivery check-up within 48 hours is significantly lower among the Dalit mothers in compared to Non-dalit mothers ($P<.01$ and <0.5). Nepal Demographic Health Survey (NHDS) 2006 also supports the present result in the utilization of maternal health care services between Dalits and Non Dalits. The antenatal care from SBA was only 40.2 per cent for Dalits (only 38.2% for Terai Dalits) was quite lower than Hill Brahmin Chhetri (57.0%) and Newars (68.4%). Only 9 per cent Dalits mothers were delivered their last babies at health facilities and only 11 per cent deliveries were assisted by health professionals (Doctor/Nurse/Midwifes) in compared to 18 and 19 percent national average respectively (**Nepal Demographic and Health Survey 2006; Nepal Demographic and Health Survey 2011**). This finding is also supports by the findings of Chaterjee and Sheoran in India. They mentioned "structural discrimination against Dalits and marginalized groups takes place in the form of physical, psychological, emotional and cultural abuse which receives legitimacy from the social structure and the social system. All these factors affect their health status, access to healthcare and quality of health service received" (**Chaterjee and Sheoran, 2007**).

Poverty, lack in awareness, lack of family support, facility not accessible were found as key barriers in utilizing the maternal health care services among the mothers in both of the groups. The improved occupation and per capita income, education to the girls up to grade 10 and above, widespread public health awareness and access of basic health care facility at village level could give a better result in improving maternal health care service utilization. Though this study fulfils the gap in literature it has not cover all the women of reproductive ages and has not covered all the maternal and child health care components.

Conclusion

The socio-economic and demographic profile of Dalit mothers had comparatively lower than the Non-Dalit mothers. Significant difference in the MCH care and service utilization is also observed between the Dalit and Non-Dalit mothers. Attention should be paid in increasing education, per capita income, decision-making power of women in health, skilled antenatal care providers, institutional delivery and post-natal care visits as well as other maternity care components. Lack of awareness, lack of family support, poverty and lack of transportation facility were found as key barriers for the utilization of MCH services.

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