Factors Influencing Male Participation in Maternal Health Care among Married Couples in Nepal: A Population-based Cross-sectional Study

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ABSTRACT

Background

The male involvement in maternal health care is essential to reduce obstetric complications. However, there is little known about factors contributing to male participation in maternal health in Nepal.

Objective

To assess predisposing, enabling and reinforcing factors contributing male participation in maternal health care in Nepal.

Method

A population based cross-sectional study was conducted among 374 married couples. Ethical approval was obtained from Institutional Review Board of Kathmandu Medical College Teaching Hospital. The data was collected, using modified Safe Motherhood and Partnership Family Approach Model. Multivariable logistic regression was applied to account associated paternal factors. Concentration curve and concentration index were computed to measure equity gap between lowest and highest quintiles.

Result

While four out of ten husbands reported high level of their involvement in maternal health care practices, wives reported relatively less involvement of their husbands. Logistic regression showed that husband having low family income, knows about immunization, contact with family planning providers were more likely to participate. In contrary, according to wives, husbands' who have ever been to health facility, discuss family planning with others, contact with family planning providers and who knows about exclusive breast feeding were less likely to participate. The study also showed that socio-economic factors play a significant role.

Conclusion

Male involvement in maternal health care practices is low. Predisposing, enabling and reinforcing factors play a significant role; however, some contradictions among husbands' and wives' perspectives provide strong evidence on significance of communication within partners on maternal health care issues.

KEY WORDS

Disparity, Male participation, Reproductive health, Sexual health, Women's health

INTRODUCTION

Globally, 830 women die every day from preventable causes of pregnancy and child birth.[1] Ninety-nine percent of all maternal deaths occur in Low and Middle Income Countries (LMICs).[2] However, Male involvement in reproductive health is recognized as a crucial factor to improve maternal health care services globally.[3] Men's knowledge and their engagement in maternal health improves home care practices, care-seeking behavior and equitable couple communication and decision making in maternal health care practices (MHCPs).[4-6]

Nepal is a predominantly patriarchal society and many women are dependent on their counterparts for major decision making.[7,8] Men's active involvement plays a vital role in a reduction of three delays: delay in decision to seek care; delay in reaching care; and delay in receiving care.[9-11] Therefore, when men are the sole decision makers, men need to be well aware of the needs during pregnancy, delivery and childbirth. Several studies have reported advantages of male involvement in MHCPs: increased contraceptive usage, improved maternal mental health, increased access to antenatal and postnatal care services, and reduced unhealthy practices such as smoking during pregnancy.[12-15]

Male involvement and awareness in MHCPs not only affect their partner's wellbeing but also have an impact over their safe sexual and reproductive behaviors.[16] However, there are limited studies reporting the understanding of women's opinion along with their husband's for the involvement of men in MHCPs. This study, therefore, aimed at finding women's and men's opinion on factors influencing male involvement in MHCPs.

METHODS

We conducted a population based cross-sectional study from April 2017 to August 2017 in Bungamati, Lalitpur district, Nepal. Bungamati- a medieval town nearly 10 km south from the capital is rapidly moving towards an urban life-style. About six thousand people reside in 1,304 households; 3,575 of them are 15-49 years old. We randomly selected 374 couples who were 15-45 years of age with at least one child. The sample size was calculated by using G*Power with 5% level of significance, 80% power, an estimated effect size of 0.13 (differences in the opinion of husband and wife regarding male involvement in MHCPs) and 4% non-response rate.[17]

Two trained enumerators interviewed the couple simultaneously in different places at their home so that their answers did not influence each other. We used the structured questionnaire based on the Safe Motherhood and Partnership Family Approach (SM-PFA) model and modified to match Nepalese context.[18] The questionnaire consists of predisposing factors, enabling and influencing factors. Predisposing factors include age in years, age at first marriage, age at first sexual intercourse, ethnicity, education, occupation, family income and socio-economic status. Ethnicity was categorized according to National Health Management Information System and Ministry of Health and Population.[19] The socioeconomic status (SES) was defined by Kuppuswamy's socioeconomic status scale modified to the Nepalese context.[20] This scale categorizes the family into upper (26-29), middle (11-25) and lower (<10) socio-economic status.[20] Enabling factors include exposure and knowledge related to reproductive health such as use of family planning methods (yes/no), place of availability of family planning devices (yes/no) and discussion with others/health workers (yes/no), immunization (yes/no), breast feeding (yes/no), HIV/AIDS (yes/no).[18] Reinforcing factors include visit at health care facilities (yes/no) and discussion of family planning methods with health workers/FCHVs (yes/no).[18] The reliability co-efficient (α) for enabling and reinforcing factors were 0.6 and 0.7 respectively. The questionnaire was pretested among 38 respondents (5% of total sample size) in nearby community, Khokana, Lalitpur and no modification was required. The dependent variable was level of male involvement in reproductive health. It was measured by adding respondent's responses on 16 indicators as shown in table 1.[21] The total score ranged from 0 to 16. The score was dichotomized using mean value as a cut-off value so that score above mean value was coded as 1 showing high level of participation on reproductive health and score below and equal to mean value was coded as 0 illustrating low level of participation.[18]

Table 1. Indicators to measure outcome variable

Indicators
Husband uses male contraceptives in the last one year
Husband knows about wife's last menstrual period
Husband accompanied his wife for ANC visit
Husband accompanied his wife during child delivery process
Husband knows about dangers signs of pregnancy
Husband arranged for institutional delivery
Husband encouraged wife for exclusive breast feeding
Mutual decision on the use of contraceptive methods
Husband supported wife for more need of nutritious food during pregnancy, delivery and postnatal period
Husband accompanied wife during immunization of the children
Husband changes nappies/clothes of the children
Husband supports wife on feeding the children
Husband assists to bathe the children
Husband washes the clothes of the children
Husband cooks food for the childre
Husband has planned for financial security of the child

Ethical clearance was secured from Institutional Review Board of Kathmandu Medical College Teaching Hospital. We obtained permission to conduct the study from

administration head of municipality office and in-charge of health post of Bungamati, Lalitpur district. The study participants provided written consent after explaining objectives of the study, risk and benefits and their rights.

We entered data directly into CS-Pro 7 software and exported to SPSS V20.0 for Windows (IBM SPSS, Inc, Chicago, Illinois, USA). We summarized the study characteristics using mean (SD) and proportion. We used Pearson's chi-square and Fisher exact test to assess univariate association and multiple logistic regressions to estimate the individual effect of each explanatory (predisposing, enabling and reinforcing) variables on male involvement in MHCPs. P value of less than or equal to 0.05 was considered as significant in both bi-variate and multivariable analyses. We used Concentration index (CI) to assess the equity gap of male involvement in MHCPs with respect to SES (Q1-Q5).[20] The CI values range between -1 to 1 indicates perfect equality. We plotted the concentration curve to show the cumulative proportion of involvement of male in MHCPs ranked by socio-economic quintile against the cumulative sample population. When the diagonal line of equality overlapped with the concentration curve, the ideal equality is reflected. Concentration curve above the diagonal line of equality indicates unequal male participation in reproductive health among low SES; and concentration curve below the diagonal line of equality indicates unequal male participation in MHCPs among high SES.[17,22]

RESULTS

According to husbands, four out of ten husbands had reported high level of male involvement in MHCPs, while according to wives; only three out of ten husbands had the same category.

Bi-variate Analysis

Table 2 and 3 show the predisposing factors and enabling and reinforcing factors associated with male involvement in MHCPs among husband and wife.

Husbands

Age during first sex (p=0.03), education (p < 0.001), occupation (χ^2= 16.42, p < 0.001), and family income (p < 0.001) were associated predisposing factors with male involvement in MHCPs.

Likewise, husband who knows about ANC clinic (p=0.007), HIV/AIDS (p=0.01), STDs (p=0.003), immunization (p=0.004); and who discusses family planning with others (p < 0.001) were associated enabling factors. Similarly, in reinforcing factors, husband who ever visited health care facilities (p < 0.001), contacts with service providers on family planning methods (p < 0.001), and ever discuss family planning methods with health workers/FCHVs (p < 0.001) were positively associated with male involvement in MHCPs (Table 2).

Table 2. Predisposing factors and level of male involvement in reproductive health care. (n= 748)

Characteristics	Category	High level of male involvement in MHCPs as reported by:			
		Husbands No. (%)	p value	Wives No. (%)	p value
Age (years)	15 - 24	21 (32.8)	0.390	38 (36.9)	0.670
	25 - 34	99 (41.6)		81 (33.3)	
	35 - 45	31 (43.1)		8 (28.6)	
Age during first sex (years)	14 - 20	25 (29.1)	0.031	51 (29.8)	0.060
	21 - 27	100 (42.4)		64 (35.4)	
	28 - 35	26 (50.0)	0.061	12 (54.5)	0.060
Age at first marriage (years)	14 - 20	26 (30.2)		51 (29.8)	
	21 - 27	100 (42.2)		64 (35.4)	
	28 - 35	25 (49.0)		12 (54.5)	
Ethnicity	Upper caste	40 (47.1)	0.119	32 (38.1)	0.009
	Disadvantaged janajati	23 (31.1)		20 (27.8)	
	Others	88 (40.9)		75 (34.4)	
Type of family	Nuclear	58 (32.8)	0.65	58 (32.8)	0.389
	Non-nuclear	69 (35.0)		69 (35.0)	
Education	Illiterate/ Primary	15 (19.7)	<0.001	29 (22.5)	<0.001*
	Middle/ Higher secondary	103 (40.1)		86 (37.4)	
	Bachelors and above	33 (80.5)		12 (80.0)	
Occupation	Unskilled/ Semi-skilled/ Skilled	64 (31.8)		82 (34.2)	
	Clerical/ Shop-owner/ Farmer	18 (37.5)	<0.001	33 (29.2)	0.026
	Semi-professional/ Professional	67 (54.5)		12 (57.1)	
Family income	≤ 22850	55 (56.7)	<0.001	56 (48.3)	<0.001
	> 22850	96 (34.7)		71 (27.5)	
Socio-economic status	Upper	17 (81.0)		3 (100)	
	Middle	122 (36.1)		91 (30.2)	
	Lower	12 (80.0)		33 (47.1)	

*Fisher exact test

Table 3. Enabling and reinforcing factors associated with male involvement in reproductive health (n=748)

Characteristics	High Level of male involvement in MHCPs as reported by:			
	Husbands No. (%)	p value	Wives No. (%)	p value
Enabling factors				
Exposure from media	149 (40.8)	0.261	122 (36.9)	0.439*
Knows about ANC clinic	144 (42.6)	0.007	121 (35.5)	0.045
Knows about HIV/AIDS	145 (42.3)	0.013	122 (36.4)	0.003
Knows about STDs	141 (43.3)	0.003	114 (36.3)	0.028
Knows about Immunization	147 (42.5)	0.004*	118 (35.1)	0.158
Knows exclusive breast feeding	134 (41.2)	0.385	123 (34.4)	0.001
No of wanted children				
One	13 (50.0)	0.499	29 (50.0)	0.134
Two	132 (40.0)		239 (36.2)	
Three or more than 3	6 (33.3)		10 (33.3)	
Discuss family planning with others	53 (75.7)	<0.001	46 (70.8)	<0.001
Wife knows the place to get condom	143 (40.6)	0.693	121 (35.3)	0.073
Husband knows places to get pills, IUCD, Depo, Norplant	145 (41.7)	0.062	120 (35.9)	0.020
Reinforcing factors				
Husband has ever met family planning field workers/FCHVs	119 (40.6)	0.875	104 (36.5)	0.64
Husband has ever visited health care facilities	139 (44.3)	<0.001	118 (38.6)	<0.001
Husband has contacts with providers on family planning methods	75 (79.8)	<0.001	56 (81.2)	<0.001
Husband has ever discuses family planning methods with health workers/FCHVs	41 (85.6)	<0.001	31 (88.6)	<0.001*

*Fisher exact test

Wives

Number of children (p=0.009), education (p < 0.001), occupation (p=0.03), and family income (p < 0.001) were associated predisposing factors. Similarly, according to wives, husband who knows about ANC clinic (p < 0.001), STDs (p= 0.003), exclusive breast feeding (p=0.001), places to get family planning devices (p<0.001) and husband's communication about family planning with others (p < 0.001) were positively associated with husband's involvement in MHCPs. Likewise, husband ever visited to health care facilities (p < 0.001), contacts with providers on family planning methods (p < 0.001),and discusses family planning methods with FCHVs/CHWs (p < 0.001), were associated reinforcing factors (Table 3).

Multivariable Logistic Regression

Table 4 shows results from multivariable analysis of predisposing, enabling and reinforcing factors associated with male involvement in MHCPs.

Table 4. Husbands' and wives' opinion: Logistic regression results for the association of the factors with male participation in MHCPs

Variables	Category	AOR (95%CI)	P value
Husbands' version			
Education	Illiterate/Primary	0.1(0.1-0.3)	< 0.001
	Middle/Higher secondaary	0.3(0.1-0.6)	0.003
	Bachelors and above	Reference	0.001
Family income (NPR)	≤ 22,850	2.9 (1.6-5.5)	< 0.001
	> 22,850		
Knows immunization	Yes	4.5 (1.2-16.9)	0.026
	No		
Discuss family planning with others	Yes	0.4 (0.2-0.9)	0.34
	No		
Contact with providers on family planning methods	Yes	5.7 (2.9 -11.0)	< 0.001
	No		
Wives' version			
Family income	≤ 22,850	2.8 (1.6-4.9)	< 0.001
	> 22,850		
Occupation	Unemployed	0.5 (0.2-1.4)	0.167
	Unskilled/Semi-skilled/ Skilled	0.2 (0.1-0.8)	0.023
	Clerical/Shop-owner/Farmer	0.9 (0.2-3.3)	0.841
	Semi-profession/ Profession	Reference	0.047
Husband ever been to health facility	Yes	0.3 (0.1-0.8)	0.010
	No		
Husbands' discussion of family planning with others	Yes	0.4 (0.2-0.9)	0.039
	No		
Husbands' contact with providers on family planning methods	Yes	0.1(0.03-0.2)	< 0.001
	No		
Husband knows about exclusive breast feeding	Yes	0.1(0.04-0.4)	0.001
	No		

Husbands

The odds of male involvement in MHCPs is lower when they were illiterate/Primary education (OR: 0.1, 95% CI: 0.04-0.4), had middle/high school education (OR: 0.3, 95% CI: 0.1-0.6) compared to those who were graduated and

had further degrees. Men who knew about immunization had more than four times the odds to participate in MHCPs (OR: 4.6, 95% CI: 1.2-16.9); men who have contacts with providers on family planning methods were nearly six times more likely to participate (OR: 5.7, 95% CI:2.9-11.0). However, men with family income ≤ NPR 22,850 were nearly three times more likely to involve in MHCPs (OR: 2.9, 95% CI: 1.6-5.5).

Wives

According to wives, those who works as unskilled to skilled workers had their husbands less likely to participate in MHCPs (OR: 0.3, 95% CI: 0.07-0.8). The husbands who have ever been to health facility (OR: 0.3, 95% CI: 0.1-0.7), discussed about family planning methods with others (OR: 0.4, 95% CI: 0.2-0.9), have regular contacts with providers on family planning methods (OR: 0.09, 95% CI: 0.04-0.2), and husbands who know about exclusive breast feeding (OR: 0.13, 95% CI: 0.04-0.4) were less likely to participate in MHCPs. However, similar with the husband's version, wives also reported that the husbands whose family income was ≤ NPR 22,850 were nearly three times more likely to participate in reproductive health (OR: 2.9, 95% CI: 1.6-5.4).

Concentration Curve and Index

The concentration index according to husbands and wives was 0.04 (SE = 0.07) and -0.01 (SE = 0.01), respectively. This positive and negative value indicates contradiction among husbands' and wives' perspectives about the male involvement in MHCPs. Figure 1 shows inequality of male involvement in MHCPs and male involvement in MHCPs being disproportionately more in high income group.

DISCUSSION

We conducted a population based cross-sectional study in a rapidly moving into urban settlements in central Nepal to investigate several factors that tends to be responsible for the involvement of male in MHCPs. The result showed 25 significant indicators. However, they are different in terms of husbands' and wives' perspectives.

Despite the increased awareness on benefits of male participation during pregnancy, childbirth and baby care; husbands rarely participate in reproductive health care in most of the Asian communities, which corresponds with the present findings.[23] This may be because of the existing social obligation and stereotypes thoughts such as the responsibility of financial matters belongs to men and home and baby care belongs to women that prevents men to be involved in all matters concerning pregnancy, maternal and child health.[4]

In our study, men with a higher education were more likely to be involved in their wives antenatal care, pregnancies and newborn care as in other studies from Nigeria and Uganda.[24,25] Similarly, another study from Nepal reported that men who graduated were more likely to have their wives had their ANC than men with primary level of education or no education.[17] Another study from Uganda revealed that the lack of education for men could be the barrier to women's use of health services.[26] These findings suggest that education provides good knowledge about the benefits of male involvement in reproductive health and is an important factor for sustaining women's access to reproductive health.

Our study revealed that husbands with lower family income were more likely to be involved in caring their wives. In contrary, a previous study from Kathmandu demonstrated that men with higher income are more involved in the maternal health.[27] In our study, the concentration curve revealed more male involvement in low income group and inequality among high income group. Further, the negative value of CI supports male involvement in reproductive health is higher among low-income group. It might be due to the existing traditional masculinity in Nepalese society.[28] People of high income group can hire a person, usually a woman, who takes care of mother and baby during and after the delivery. But, this practice is rare among low-income group and husbands are involved more in taking care of their wives and family.

Our study revealed knowledge of immunization likely increased male involvement in MHCPs. Yargawa et al. conducted in Kathmandu, Nepal reported that 11% of male accompanied their partner for their child immunization and almost 95% of their children were completely immunized.[6] Male involvement in child immunization services influences women's immunization and helps to complete immunization on time.[29]

Surprisingly, our study revealed that husband ever been to health facility, husbands' discussion of family planning with others, and husbands' well known about exclusive breast feeding were inversely associated with male involvement in reproductive health. These findings suggest that it is not necessarily that having a knowledge lead to behavior change. This may be because of several reasons such as; work becomes men's primary responsibility, people often stay in joint family and elder family members are there to take care of newborn and mother, maternal health centers are usually overcrowded and involvement of men is not welcomed.[5] Further, knowledge and practice on reproductive health can be examined through the theory of health behavior model.[30,31]

Measuring the male involvement in MHCPs as low and high is a methodological challenge. Maternal health care is a comprehensive phenomenon and on measuring the level of involvement, it must include range of domains from men's attendance in ANC, use of male contraceptives, inter-spousal communication, encourage for exclusive breast feeding and nutritious diet and taking care over household chores which are supposed to be the wives' primary responsibility in most of the Asian communities.[16]

Therefore, in this study, the composite index was developed encapsulating the multiple aspects of male participation from both the husbands' and wives' perspectives

Our study has several strengths. First, sample size was sufficient to measure relationship between variables. Second, to reach reliable and unbiased conclusion, both husbands and wives were interviewed in separate settings. Third, the study explores how socioeconomic status influences male involvement in reproductive health, which has not been reported in Nepal's context before. Fourth, the combinations of sixteen indicators for the calculation of the composite index, although masked their differential characteristics, it strongly developed a consensus framework of male involvement in MHCPs.

Nevertheless, we have identified some limitations in this study. First, we included only those whose youngest child was at least 5 years of age which may have cause an information bias. Second, as the data was collected at one point of time, temporality cannot be established. Third, there is a possibility of bias in over/under estimation of activities of husbands from their wives, considering the social structure of Nepalese society.

CONCLUSION

The participation of male involvement in MHCPs is relatively low and is more concentrated on low income group. Male involvement was influenced by several socio-demographic factors along with a number of enabling and reinforcing factors. However, there were some contradictions among husbands' and wives' perspectives which provide strong evidence on significance of communication between husband and wife on maternal health care issues. Therefore, to increase the level of male involvement in MHCPs in Nepalese community, future intervention programs need to be more couple friendly.

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