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Factors Influencing Husband's Involvement during Antenatal Care in Lalitpur District of Nepal

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Abstract

This research aimed to identify the proportion of husbands involved during antenatal care (ANC) and factors influencing husband's involvement during ANC in Lalitpur district of Nepal. A cross-sectional study was carried out amongst married men (n=284), who were aged 20 years and above and whose wives had experienced a live birth within one year before data collection. Univariate chi-square test and multiple logistic regression were used to identify associations and predictors respectively. The results indicated that 87.7% of the respondents were highly involved during ANC. After adjusting for confounding factors, the final model revealed that husband's education (primary and secondary) (AOR: 12.592, 95% CI: 1.578-100.509 and AOR: 14.261, 95% CI: 1.771-114.839), wife's education (AOR: 7.648, 95% CI: 1.191-49.122) and distance to the nearest ANC clinic (AOR: 7.643, 95% CI: 1.997-29.245) were significant predictors. Perceived low support from the female community health volunteers, and male-unfriendly ANC facilities and policies, are challenges with regards to active male involvement during ANC. Hence, providing education to individuals, strengthening the role of female community health volunteers, and establishing ANC facilities and related policies which accommodate males, could improve male involvement in ANC.

Keywords: Antenatal care (ANC), Husband's involvement, Lalitpur Nepal,

What was Known

- High antenatal care coverage will ultimately improve maternal and child mortality
- Male involvement in antenatal care is crucial to improve maternal and child health in Nepal
- Male involvement in antenatal care is influenced by several factors

What's New and Next

- Educating individuals could improve male involvement in antenatal care
- Strengthening the role of female community health volunteers could improve male involvement

Introduction

Antenatal care (ANC) is one of the pillars of safe motherhood and a crucial determinant of safe delivery[1]. ANC ensures a substantial reduction of maternal and perinatal mortality by early detection of the complications in pregnancy and anticipation of the risk of complications during labor and childbirth[2]. According to UNICEF data for 2015-2020, South Asia has the lowest record for four ANC visits of only 21%. Globally, neonatal mortality showed a decline of 51% from 1990 to 2018. However, approximately 2.5 million children died during the first month of life with an estimated one million deaths during the first day. Likewise, global maternal mortality rates showed a decline of 38% from 2000 to 2017. South Asia achieved the highest overall percentage decline of 59% in the same period. Nevertheless, worldwide, approximately 800 women die every day due to the complications of pregnancy and childbirth[3]. According to the WHO, these deaths are mainly concentrated in low resource areas and are mostly preventable by providing effective interventions at reasonable cost during the antenatal period[2].

Similarly, the proportion of ANC first visits in Nepal has increased from 97% in 2015 to 103% in 2018. Nevertheless, the proportion of women who attended four ANC visits per protocol showed a static figure of 51% in 2015 to 50% in 2018. A similar gap has been seen in the province-wise ANC coverage between the first and four complete ANC visits[4]. National targets were set at 70% by 2020 and 90% by 2030 for the four ANC visits. Additionally, maternal mortality ratio has increased from 190 in 2013 to 239 per 100,000 live births in 2018. However, neonatal mortality rate shows a slight reduction from 23 in 2014 to 21 per 1,000 live births in 2018. However, this gradual rate of diminuation is not enough to meet the national targets by 2025, i.e. 86 per 100,000 live births for maternal mortality ratio and 14 per 1,000 live births for neonatal mortality rate. Undoubtedly, Nepal has lots of room for improvement in order to achieve its national targets [5–7]. In the same vein, the Nepali government has implemented various polices for effective maternal and newborn care including the Aama and newborn care program[4].

In spite of being in close proximity to the capital city Lalitpur, the study area also depicts the same gap in ANC coverage. In Mahalaxmi municipality and Mahankal rural municipality of Lalitpur district, which were the study sites, the proportion of women completing four ANC visits is 11.8% and 42.1% respectively[7]. Although there have been no documented maternal deaths in both, and only one neonatal death in Mahalaxmi, it is certainly undeniable that there are numerous potential opportunities for improvement in maternal and child health (MCH) here. Additionally, in a recent study conducted in Lalitpur, male involvement in reproductive health was found to be limited[8].

Out of the many factors that improve ANC, husband's role in ANC could be a crucial factor. In most developing countries like Nepal, pregnancy and childbirth are mostly centralized in women, and men are given secondary roles to play. Undoubtedly, men have a significant role in maternal health and safe childbirth, acknowledgment of which could substantially improve MCH[1]. Various studies have emphasized that in many parts of the world where patriarchy is still prevalent, even though males accompanying their wives during ANC is a rare case scenario, they hold enough social and economic power to decide the timing and conditions of sexual relations, family size and whether their spouse will utilize available health care services[1,9,10]. Men here are potential gatekeepers to women's health-seeking behavior as mostly men own the decisive power in the family[8,11,12]. A study conducted by Kariuki[1] in Uganda depicts three major factors that are responsible for maternal death: the delay in decision-making to refer a patient to a health facility to receive care, delay in reaching the service delivery point due to lack of transport and delay in receiving care at the facility[4]. Male involvement plays a significant role in addressing the first two delays. Studies conducted in Nepal revealed that women who were trained along with their husbands showed a greater level of knowledge, and those who received education with their husbands were two times more birth prepared as compared to the ones who received training and education alone[13,14]. Therefore, the role of the male counterpart cannot be ignored in

the process of improvement of MCH[1]. Husband's involvement during ANC could hugely assist in filling these gaps in MCH care. Previous research has used different proxy indicators to assess husband's involvement in MCH. Wai assessed husband's involvement on the basis of four factors: antenatal accompaniment[9,15,16], financial support[9,16], birth preparedness[9] and involvement in decision making of the delivery place[9,15,16].

In spite of acknowledging the importance of and increasing willingness of husbands as well as their partners towards husband's involvement during ANC, various factors influence its improvement. Previous studies have considered age, education, other family members living within the household during pregnancy, living with partner during pregnancy, religion, monthly income level, number of children, distance to clinic, staff attitude, time spent in clinic and community acceptability, long waiting time, negative perception of society and availability of female community health volunteers and nurses as some of the factors that influence husband's involvement in reproductive health[8,17]. This study aimed to assess the proportion of husbands involved in ANC and identify the factors influencing husband's involvement using the socioecological model at intrapersonal, interpersonal, community, organization and policy levels.

Materials and Methods

Ethical approval

Ethical approval was obtained from the ethical review committee for human research, Faculty of Public Health, Mahidol University (COA. MUPH 2020-049) and Nepal Health Research Council (NHRC) (Ref. 328/2020).

Study area

This study was carried out at Mahalaxmi municipality and Mahankal rural municipality of Lalitpur district, Province 2, Nepal.

Study design and sample size

This was a cross-sectional study conducted amongst married men aged 20 years and above whose wives had given birth within one year from data collection. The total target population was 1,751, which was the total expected live births in both municipalities[7]. The sample size was calculated using Cochran's sample size formula at 95% confidence interval[18]; the calculated sample size was 258. An additional 10% of the sample size was added to meet the loses in case of non-response and the proportion of males (27%) involved in ANC during pregnancy in the South Asian region, particularly Bangladesh[10], was used due to unavailability of recent data from Nepal, giving a final required sample size of 284. In total, 860 men were contacted and 284 of them responded. So, the response rate was approximately 33%, mostly due to poor connectivity, wrong number, time constraints and unavailability of the husband.

Married men aged 20 years and above who were accessible by telephone, whose wives had given birth to a live infant within 1 year of data collection, and who gave consent and were willing to participate in the study were included in the study. Men who were unavailable at the time of data collection and who were ill or unable to communicate verbally were excluded from participating in this research.

Sampling method

A two-staged stratified random sampling method was used. Firstly, one urban and one rural, i.e. Mahalaxmi municipality and Mahankal rural municipality, were randomly selected comprising of a total of 10 and six wards, respectively. Secondly, all six wards were selected from Mahankal by census due to the low number of the study population and only three wards were randomly selected from Mahalaxmi i.e. wards 2, 5 and 8. The estimated sample size was proportionately distributed i.e. 40 in Mahankal and 244 in Mahalaxmi.

Telephone numbers of respondents were obtained from birthing centers of respective municipalities. Respondents were selected by simple random sampling. In case of unavailability, they were contacted for a maximum of two times, after which they were rejected and the next one was selected.

Data collection and instrument

Official permission for data collection was obtained from the district health office in Lalitpur and from health facilities. Respondents gave verbal informed consent before data were collected, proof of which was recorded. Primary data were collected from November 2019 until January 2020, via telephone interview. The research instrument included a structured questionnaire created with reference to literature reviews and initially checked by three experts for content validity. For the data collection, four enumerators, holding at least a bachelor's degree in sociology and allied health sciences, were appointed and trained by the principal investigator.

Outcome variable

Husband's involvement during ANC was the outcome variable and was assessed by four proxy indicators: 1) ANC accompaniment at least twice or more by the husband, 2) birth preparedness and planning including arrangement of money for ANC, delivery and emergencies, arrangement for a place for delivery with skilled birth attendants and arrangement of transportation for delivery, 3) husband helping their wives to do household chores during a previous pregnancy, and 4) at least one discussion about the ANC during the last pregnancy with their wife. All responses were categorized as yes or no. The outcome variable was categorized as high, fair and low and measured on the basis of the total score as: High: ≥80% of the 6 (5-6), Fair: 61-79% of 6 (4-5), Low: ≤60% of the 6 (≤3).

Studied variables

14 variables were incorporated in to the study to identify their association with the outcome variable. They were categorized into five levels on the basis of the socioecological model.

1. Intrapersonal level: General characteristics included residence, age, religion, level of education, occupation, travel out of residence for work, duration of stay, income, type of family, parity and complications during pregnancy. Knowledge regarding ANC during the last pregnancy included knowledge on danger signs, ANC services and daily activities during ANC and was categorized into low, medium and high.

2. Interpersonal level: Social support included social support from the wife, family, friends and neighbors and was categorized as low, medium and high support, i.e., high: ≥ 80% of 60 (48-60), medium: 61-79% of 60 (47-37) and low: ≤60% of 60 (≤36).

3. Community level: Support from female community health volunteers was categorized as low, medium and high.

4. Organizational level: Access to ANC services included time to reach the nearest ANC clinic (>60, 31-60, ≤30 minutes), convenience of distance to ANC, route of transportation (disagree, uncertain and agree), payment to travel to ANC clinic (yes, uncertain, no), payment for ANC checkup (had to pay, reimbursement, free of cost), client's ability to pay (expensive, somewhat expensive, not expensive), politeness of the health care personnel, encouragement for involvement in ANC and satisfaction of service (disagree, uncertain, agree), waiting time (>60, 31-60, ≤30 minutes), availability of the physician or nurse in ANC clinic, sufficiency of the health care personnel in the ANC checkup (yes, uncertain, no), permission to sit inside the ANC clinic with wife, convenience of the clinic time and facility of telephone appointment (yes, uncertain and no).

5. Policy level: Perceptions towards existing MCH policies included whether the Aama and newborn free service was available in the ANC clinic during the last pregnancy, regarding the perception of the respondents towards the program and whether the respondent received 15 days' paternity leave. Later the perception was categorized as poor, satisfactory and good.

Validity and reliability

The structured questionnaire was prepared in English and validity was checked by three external experts. The questionnaire was translated into Nepalese and pre-tested among 30 respondents from a different area to the study sites. Cronbach's coefficient of alpha test of higher than 0.70 was used to measure the reliability of the questionnaire.

Data processing and analysis

Data entry and analysis were conducted using SPSS version 18. Descriptive statistics were employed to describe the frequencies and percentage of the variables. Data were assessed using univariate Chi square test and logistic regression analyses. Variables with a statistically significant crude odds ratio and 95% confidence interval were included in the multivariate analyses for calculating adjusted odds ratio at 95% confidence interval.

Results

A major proportion of respondents (87.7%) showed a high level of involvement during ANC. More than 90% of the respondents had arranged money for ANC, delivery and emergencies, place of delivery with skilled birth attendants, helped their wife with house chores and had at least one discussion about ANC with their wife during the last pregnancy. Only three quarters of the respondents (75.4%) accompanied their wife for ANC during the last pregnancy and about 88.4% had arranged transportation for delivery during the last pregnancy (Table 1).

Table 1 Husband's involvement during antenatal care (n=284)

Husband's involvement during ANC	**n (%)**
Number of times accompanied wife for ANC during last pregnancy	
Did not accompany	70 (24.6)
Accompanied	214 (75.4)
Arrangement of money for ANC, delivery and emergencies	
No	14 (4.9)
Yes	270 (95.1)
Arrangement of a place for delivery with skilled birth attendants	
No	11 (3.9)
Yes	273 (96.1)
Arrangement of transportation for delivery	
No	33 (11.6)
Yes	251 (88.4)
Helped wife with household chores during last pregnancy	
No	19 (6.7)
Yes	265 (93.3)
Discussed ANC with wife during last pregnancy	
No	4 (1.4)
Yes	280 (98.6)

ANC, Antenatal care

85.9% of respondents resided in urban areas. Half of the respondents were aged 20-30 years. The majority of the respondents were Hindu. The majority of the respondents and their wives had attended secondary school, while about 4.3% of respondents and 5.6% of wives had never attended school. About 41.5% of the respondents were self-employed. 18.7% of those employed had to travel out of their residence for work. About 73.6% had to stay away from home for up to 3 months. The majority lived in an extended family. A high proportion (56.3%) of the respondents' wives were unemployed/housewives. Only 36.3% had a high income and 57.7% of the respondents' wives were multiparous. Only a small proportion (15.8%) had experienced complications during pregnancy (Table 2).

Table 2 Distribution of general characteristics (n=284)

Variables	n (%)
Residence	
Rural	40 (14.1)
Urban	244 (85.9)
Age (years)	
20-30	142 (50.0)
31-40	125 (44.0)
41-50	17 (6.0)
Religion	
Hindu	211 (74.3)
Others (Buddhist, Muslim, Kirat, Christian)	73 (25.7)
Education	
Secondary	114 (40.1)
Higher secondary	61 (21.5)
Higher education/university level	56 (19.7)
Primary	41 (14.4)
Never attended school	12 (4.3)
Wife's Education	
Secondary	109 (38.4)
Higher education/university level	61 (21.5)
Higher secondary	59 (20.8)
Primary	39 (13.7)
Never attended school	16 (5.6)
Occupation	
Self-employed	118 (41.5)
Others	79 (27.8)
Daily (labor)	34 (12.0)
Agriculture	30 (10.6)
Civil servant	20 (7.0)
Unemployed	3 (1.1)

Table 2 Distribution of general characteristics (n=284) (Cont.)

Variables	n (%)
Travel out of residence area for work (n=281)	
Yes	53 (18.7)
No	231 (81.3)
Duration of stay (n=53)	
>3 months	14 (26.4)
≤3 months	39 (73.6)
Type of family	
Nuclear	111 (39.1)
Extended	173 (60.9)
Wife's Occupation	
Housewife/ Unemployed	160 (56.3)
Others	50 (17.6)
Self-employed	42 (14.8)
Agriculture	22 (7.8)
Civil servant	6 (2.1)
Daily (labor)	4 (1.4)
Average monthly family income (Nepalese rupee)	
≤25,000	93 (32.8)
25,001-35,000	61 (21.5)
35,001-60,000	68 (23.9)
>60,000	62 (21.8)
Sufficiency of family income	
Insufficient with debt	31 (10.9)
Insufficient with no debt	9 (3.2)
Sufficient without saving	114 (40.1)
Sufficient with saving	130 (45.8)
Monthly family income	
Low	93 (32.7)
Median	88 (31.0)
High	103 (36.3)
Living children before pregnancy	
Nulliparous	120 (42.3)
Multiparous	164 (57.7)
Complications during pregnancy	
Uncertain	1 (0.4)
No	238 (83.8)
Yes	45 (15.8)

Most of the respondents depicted high knowledge and reported high social support. Nonetheless, two thirds of respondents perceived low support from the FCHV. Similarly, more than two thirds of respondents were not allowed to sit with their wife during the ANC checkup. In addition, more than 80% of the respondents did not receive paid paternity leave.

In the multiple logistic regression, respondent's education (primary and secondary level; AOR 12.59, 95% CI 1.578–100.509 and AOR 14.26, 95% CI 1.771–114.839), wife's education (AOR 7.64, 95% CI 1.191–49.122) and distance to the nearest ANC (AOR 7.64, 95% CI 1.997–29.245) were found to be significant predictors for the final model at p=0.017, 0.013, 0.032 and 0.003 respectively. Respondents who attended primary school, secondary and higher secondary school, and higher education were found to be 12, 14 and 6 times more likely to be involved during ANC than those who had never attended school. Similarly, husbands whose wives had attended education higher than secondary school level were 7 times more likely to be involved than those whose wives had attended secondary school and lower. In addition, respondents who reached the ANC facilities in 30 minutes or less were more likely to be involved during ANC than those who reached it after 30 minutes (Table 3).

Table 3 Predictors of husband's involvement during antenatal care

Variables	Univariate OR (95% CI)	*p*	Multivariate AOR (95% CI)	*p*
Education				
Never attended school[ref]				
Primary school (1–5)	12.95 (2.77–60.59)		12.59 (1.58–100.51)	0.017
Secondary School (5–10)	10.88 (3.01–39.31)		14.26 (1.77–114.84)	0.013
Higher secondary + higher education and university	13.49 (3.66–49.74)	<0.001	6.48 (0.69–60.73)	0.101
Wife's education				
Secondary level and lower[ref]				
Higher than secondary level	3.32 (1.39–7.89)	0.004	7.65 (1.19–49.12)	0.032
Occupation				
Self-employed[ref]				
Agriculture and labor	0.31 (0.13–0.71)		0.83 (0.19–3.42)	0.792
Others (private job, student, unemployed, civil servant, etc.)	1.21 (0.47–3.13)	0.002	0.98 (0.23–4.20)	0.982
Travel out of residence for work				
Yes[ref]				
No	2.26 (1.02–4.96)	0.038	0.71 (0.41–3.49)	0.677
Social support				
Low[ref]				
High	2.07 (1.01–4.23)	0.043	0.88 (0.22–3.43)	0.852

Table 3 Predictors of husband's involvement during antenatal care (Cont.)

Variables	Univariate OR (95% CI)	*p*	Multivariate AOR (95% CI)	*p*
Distance to ANC				
>30 minutes[ref]				
≤30 minutes	6.32 (2.25–17.71)	0.001	7.64 (1.99–29.24)	0.003

OR, odd's ratio; AOR, adjusted odd's ratio; 95% CI, 95% confidence interval; [ref.] reference group

Discussion

In this study, we explored husband's involvement during pregnancy and its association with general characteristics, knowledge, social support, support from FCHVs, organization-related factors and existing policy-related factors. In the current study, 75.4% of husbands accompanied their wives for ANC during their most recent pregnancy, which is similar to the figures reported from studies conducted in Yangon (65%) and Afghanistan (65%)[9,19]. Contradictorily, only 27% and 6% of husbands accompanied their wife during ANC, according to research conducted in Bangladesh and Uganda respectively[1,10]. Limited male involvement in reproductive health has been seen in Lalitpur[8]. In terms of the birth preparedness in the current study, figures have been observed to be similar with the study conducted in Yangon where 91.1% of husbands arranged for a skilled birth attendant, 83.6% for delivery place and 81.7% for money saving[9]. In the present study, more than 90% of husbands helped with household chores. Similarly, in a study conducted by Vermeulen, more than 80% of husbands had held an intra-spousal discussion with their wife about ANC, which is in line with the findings of this study where more than 90% of husbands had had at least one discussion with their wife regarding ANC during the last pregnancy[15,20]. Increased involvement during ANC shown in the study must be consequential to the increased awareness in people regarding ANC and acknowledgement of the importance of the male role at the same time.

Previous studies depict that education of the male partner significantly affects male involvement in ANC[1,21], which is concordant with the finding of this study that suggests respondents who attended school are more likely to be involved in ANC than those who never attended school. Similarly, education has been identified as one of the motivating factors for men to be actively involved in maternal and child care[8]. In general, a higher level of education increases the ability to access information and subsequently enhances the level of involvement of husbands in ANC. Correspondingly, husband's involvement during ANC is also found to be significantly associated with the wife's education level. Husbands of women who have attended a higher level of education are associated with high levels of involvement in maternal health care[22–24]. All in all, a higher level of education amongst wives increases their ability to convince and motivate husbands to get involved during ANC. As per the analysis, respondents whose nearest ANC clinic was within a distance of 30 minutes or less were more likely to be involved during ANC. Similar observations were noted by Craymah and colleagues in a study conducted in Uganda which showed a distance less than 5km to the health facility was an enabling factor towards male involvement during ANC[23,25]. Distance to the health facility is a crucial aspect as husbands need to dedicate enough time out of work to accompany their wives.

This study reveals low support from FCHV towards the respondents, which is in line with the findings from a study done in Lalitpur district[8]. In the same regard, most of the respondents were uncertain about the support from FCHV. The lack of awareness in the community regarding services provided by the FCHV could also be the reason behind the low perception of support from them. Deploying community health workers to educate the community could improve male

involvement in maternal health care[26]. In this study, more than 60% of respondents were not allowed to sit with their wife during an ANC checkup. Several studies demonstrated a lack of accommodating space for men in health facilities to be challenging for men who want to be actively engaged in ANC[20,27,28]. Similarly, the lack of a definitive public policy that incorporates men's role in MCH may lead to limited male access during pregnancy[1,8,20,25,28]. Therefore, MCH care needs to be rendered male friendly, in order to encourage male involvement and ultimately improve MCH. Looking at the figures, only about 80% of people have freely available ANC services and think that it is beneficial. On the other hand, about 65% of the respondents did not know about paid paternity leave. This is attributable to the fact that paid paternity leave is only available to government staff. So, even with a higher level of husband's involvement during ANC, there are many factors to be considered at the intra-inter-personal- , community-, and organization-levels, as well as at the policy level to bring a holistic change in MCH. Improvements are difficult to reach without incorporating the crucial role of male counterparts at all levels of the socioecological model.

Being a cross sectional study, this research does identify the association between various factors and husband's involvement during ANC, but fails to establish a causal relationship between them. This research was conducted in Mahankal rural municipality and Mahalaxmi municipality of Lalitpur district of Nepal. In this regard, it might limit the generalizability of the findings to other settings. Also, we focussed only on the husband's perception and response regarding the husband's involvement during ANC. Hence, this may have caused information bias with regards to sensitive topics and may not be inclusive of all possible factors influencing husband's involvement during ANC. Additionally, husbands who never accompanied their wife for the ANC checkup skipped certain portions of the questionnaire, which may have contributed towards selection bias. With regards to the strength of the research, it comprises of data from both rural and urban areas, thereby rendering it more meaningful in terms of the findings and their implications.

Conclusion

Amongst seemingly increasing willingness of both men and women for male involvement in ANC, there lies a greater challenge in rendering it male friendly. Our research recognizes a husband's level of educational attainment and the proximity to ANC as significant factors influencing his engagement during ANC. In addition, the study findings emphasize that low support from FCHV, some health facilities, and health care policy-related aspects significantly discourage male involvement in ANC.

Author Contributions

SS designed the study and formulated the research instrument under the supervision of AP, CM and SuS. SS conducted the pretest, reliability testing and data collection under the supervision of AP. SS carried out the initial statistical analysis of the data according to the guidance of SuS and AP. AP reanalyzed the data and guided SS on manuscript writing. CM and SuS helped to revise the manuscript. All authors read and approved the manuscript prior to submission for publication.

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Conflict of Interest

There was no conflict of interest.

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