




Husband Involvement in Maternal, Neonatal, and Child Health Care among Women who Have a Child Less Than one Year in Gondar City, Northwest Ethiopia, 2021

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Abstract

Background: Improving maternal, neonatal and child health is one of the major components of Sustainable Development Goal and countries implement different strategies to achieve this goal. In spite of this, maternal, neonatal and child mortality remains a public health burden in the developing countries, including Ethiopia. World Health Organization recommend active involvement of men during pregnancy, child birth and the postpartum period as an effective strategy to improve maternal as well as newborn health. Therefore, this study aimed to assess husband involvement in maternal, neonatal and child health care among women who have child less than one year in Gondar city, northwest Ethiopia.

Methods: A community-based cross-sectional study was conducted among 870 married women who have a child less than one year in Gondar city. A cluster sampling technique was employed to select study participants. Data were entered into Epi Data version 4.6 and exported to SPSS version 25 for analysis. Multivariable logistic regression was done and adjusted odds ratio with a 95% confidence interval was used to report the association between covariates and the outcome variable.

Results: Husband involvement in Maternal, Neonatal and Child Health (MNCH) care was 66.2% (95%CI: 63, 69.3). Maternal age (18-25years) and (26-35years), having diploma and above education, husband occupation (government employee), (merchant) and (self-employed), planned pregnancy and cesarean delivery were significantly associated with husband involvement in MNCH care.

Conclusion: In this study, nearly two thirds (66.2%) of women had husband involvement in MNCH care. Therefore, it is important to improve women's educational attainment and actions should be taken to prevent unplanned pregnancy.

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Keywords

Ethiopia, Gondar city, husband involvement, maternal, neonatal and child health

Introduction

Maternal, Neonatal and Child Health (MNCH) care is a care given for mothers and children during pregnancy, childbirth, postpartum period and childhood.^{1,2} Improving MNCH is one of the major component of Sustainable Development Goal (SDG) and countries implement different strategies to achieve this goal.^{3,4} In spite of this, maternal, neonatal and child mortality remains a public health burden in the developing countries, including Ethiopia.^{5,6} Globally 295 000 maternal deaths occur annually from causes related to pregnancy and childbirth. Around 94% of these deaths occur in developing countries and sub-Saharan African accounts two thirds of the maternal deaths.⁷ In addition, in 2019 the highest neonatal mortality rate (27 deaths per 1000 live births) were reported in sub-Saharan African and Ethiopia is fourth rank among countries with the highest neonatal mortality.⁸

MNCH care service utilization in Ethiopia is too low. According to the Ethiopia Demographic Health Survey (EDHS) 2019 report only 74% of women have at least one antenatal care visit, 48% and 34% of women had institutional delivery and post-natal follow up respectively. Regarding the immunization coverage only 44% of children completed all basic vaccinations.⁹ One of the main reason for this underutilization of the service is poor decision-making power of women's to visit a health facility because decision-making power regarding reproduction and sexuality under the will of men.^{10,11} World Health Organization (WHO) recommend active involvement of men during pregnancy, child birth and the postpartum period as an effective strategy to improve maternal as well as newborn health outcomes.¹²

Evidences showed that male involvement in maternal health programs had positive impact on maternal, neonatal and child health. It increased timely initiation of ante natal care (ANC), use of skilled birth attendants (SBAs) during childbirth, post-natal care (PNC) utilization and minimizes the risk of postpartum depression.^{13,14} Women who had husband involvement during ANC had more likely to use skill birth attendant during birth.¹⁵ And also it reduces the 3 delays which help to bring positive outcome in obstetric emergency.¹⁶

According to study conducted in India 72.5%, 27.5% and 20.3% of husbands accompanying their wives during antenatal care, during labor and immunization respectively.¹⁷ Another cross sectional study conducted in Nigeria showed that 56.9% of husbands had good involvement in MNCH care.¹⁸ Studies conducted in Ethiopia showed that husband involvement in ANC care were 61% and 36.5% of husbands involved during labor and delivery.^{19,20} Also study conducted in Gondar city showed that 40.1% of male involved in HIV counseling and testing during antenatal care follow up.²¹ Studies conducted in different countries suggest different factors associated with

husband involvement in MNCH care, like; women's level of education, husband educational status, number of children, average family income, occupation of husband, decision making autonomy.^{16,19,20,22,23}

Husband involvement in MNCH care is an effective strategy to improve health service utilization and reducing maternal, neonatal and child mortality and morbidity. Hence, it is essential to assess husband involvement in MNCH care for planning an effective intervention strategy to improve their involvement and it provides the overall magnitude of husband involvement. Therefore, this study aimed to assess the prevalence of husband involvement in MNCH care and associated factors in Gondar city, northwest Ethiopia, 2021.

Methods and Materials

Study Design and Setting

A community-based cross-sectional study was conducted in Gondar city from August 1-30, 2021. Gondar city is located 166 km far from Bahir Dar, the capital city of Amhara regional state and 750 km Northwest of Addis Ababa, the capital city of Ethiopia. According to the Population projection of Ethiopia for all regions at woreda level from 2014-2017, the total population of the town was estimated to be 306 246. Among these, 156 276 of the population are females.²⁴ Currently, it has 1 governmental comprehensive specialized hospital, 8 governmental health centers, 22 health posts, 1 private primary hospital and 1 general hospital serving the community.

Study Population and Eligibility Criteria

The study population were all married women having a child less than one year of age in the selected clusters of Gondar city during the data collection period and residing in the study area for at least six months before the data collection period.

Sample Size Determination and Sampling Technique

The sample size was determined by using the assumptions of a single population proportion formula by considering a proportion of husband involvement in MNCH care 50, Level of confidence 95%, margin of error 5%, Therefore, the sample size $(n) = \frac{(Z\alpha/2)^2 p(1-p)}{d^2} = \frac{(1.96)^2 * 0.5(1-0.5)}{(0.05)^2} = 384$. After considering design effect of 2 and a non-response rate of 10%, the total sample size was found to be 845. Gondar city has 22 kebeles (the smallest administrative unit in Ethiopia) and eight kebeles (36% of the total kebeles) were selected by a lottery method. A house to house visit was carried out in selected kebeles to find eligible women for the study. All

eligible participants in the selected cluster were included in the study, making the final sample size of 893.

Variables of the Study

Husband involvement in MNCH care was the outcome variable whereas maternal age, religion, maternal educational status, maternal occupation, husband educational status, husband occupation, family size, average family monthly income, parity, ANC visit, number of ANC visits, condition of pregnancy, pregnancy supported by family, place of delivery, who assisted the delivery, mode of delivery, having PNC visit, number of PNC visit, having medical problem, household decision-making power, and intimate partner violence were the independent variables.

Operational Definitions and Measurements

Husband involvement in MNCH care: Were measured by using 9 item questions. For each item, those who respond “Yes” were scored 1 and those who respond “No” scored 0. Based on the summative score, husband was considered as involved during MNCH care when the score was 60% and above while the score < 60% were considered as not involved.¹⁶

Household decision-making power: The ability of women to act independently on the household activities including their health, children’s health, freedom of movement, and control over finance without asking permission from another person. Thus, based on the summative score of variables designed to assess household decision-making power women who were answered above the mean value were considered as having higher decision-making power.^{25,26}

Intimate partner violence: If the respondent said “Yes” to any one of the ranges of spousal violence (sexual, physical and emotional form) or any combination of the three coercive acts was considered as intimate partner violence.²⁷

Data Collection Tools & Procedures

The data collection tool was developed by reviewing related literature.^{15,19,20,22} Data were collected using semi-structured, pretested questionnaires through face-to-face interview. The questionnaire contains socio-demographic characteristics, obstetric and maternal health services utilization related characteristics, decision-making autonomy, and intimate partner violence-related questions, and questions assessing husband involvement in MNCH service. Fourteen BSc midwives and four MSc clinical midwives were recruited for data collection and supervision respectively.

Data Quality Control Measures

The questionnaire was prepared in English and then translated into the local language Amharic then translated back to English to maintain consistency of the tool. Before the actual data collection, the questionnaire was pretested on 5% of the

total sample size outside of the study site to check the response, language clarity and appropriateness of the questionnaire. One-day Training was given for data collectors and supervisors about the aim of the study, contents of the tool, and techniques of data collection. In addition, the data collectors and supervisors were informed regarding important precautions to be taken to prevent COVID-19. During data collection, data collectors were supervised for any difficulties. The consistency and completeness of the data were checked by the data collectors and supervisors and the incomplete data were discarded before data entry.

Data Processing & Analysis

The data were checked, coded, and entered in to Epi Data version 4.6 and exported to SPSS version 25 for analysis. Descriptive statistics like frequencies, percentage, mean and standard deviation were computed. Bivariable logistic regression was done to identify variables candidate for multivariable logistic regression and variables having a *P*-value less than .2 were entered in to multivariable logistic regression analysis. Adjusted odds ratio with 95% CI and a *P*-value of $\leq .05$ was used to determine the level of significance.

Ethical Consideration

The study was conducted in accordance with the Ethiopian Health Research Ethics Guideline and the declaration of Helsinki. Ethical clearance was obtained from the University of Gondar ethical review committee (reference number: V/P/RCS/05/2710/2021). A formal letter was obtained from selected kebeles administrates. After a clear explanation of the aim of the study written informed consent was taken from each study participant.

Results

Socio Demographic Characteristics of Study Participants

In this study, a total of 893 women were included among whom 870 participants were interviewed with a response rate of 97.4%. The age of the participants ranges from 18 to 46 years with the mean age of 29.53 years (± 4.787 SD). Most (82.8%) of study participants were Orthodox Christians by religion. Regarding occupation, 391 (44.9%) women were housewives. More than two third (67.8%) husband had diploma and above (Table 1).

Obstetric and Maternal Health Service Utilization Related Variables

Majority, (97.6%) and (97%) of study participants had at least one ANC follow up in the most recent pregnancy and gave birth in the health institution respectively, while only 53.6% of the study participants had PNC. Regarding the mode of delivery more than one thirds (382%) of the respondents

Table 1. Socio-Demographic Characteristics of Women Who Have a Child Less Than One Year of Age in Gondar City, Northwest Ethiopia, 2021 (n = 870).

Variables	Category	Frequency	Percent
Maternal age	18-25years	186	21.4
	26-35years	587	67.5
	≥36years	97	11.1
Religion	Orthodox	720	82.8
	Christian		
	Muslim	107	12.3
	Protestant	33	3.8
Women's education status	Others*	10	1.1
	No formal education	98	11.3
	Primary education	144	16.6
	Secondary education	237	27.2
Women's occupation	Diploma and above	391	44.9
	Government employee	250	28.7
	Housewife	391	44.9
	Merchant	103	11.8
	Self-employed	99	11.4
Husband education status	Student	27	3.1
	No formal education	49	5.6
	Primary education	59	6.8
	Secondary education	172	19.8
Husband occupation	Diploma and above	590	67.8
	Government employee	407	46.8
	Merchant	176	20.2
	Self employed	186	21.4
	Daily laborer	59	6.8
Number of family living together	Student	42	4.8
	≤5	714	82.1
	>5	156	17.9
Average monthly income	≤1000ETB	45	5.2
	1000-2500 ETB	73	8.4
	2501-5000 ETB	155	17.8
	≥5000 ETB	597	68.6

Others*: catholic and Adventist; ETB: Ethiopian birr.

delivered by cesarean delivery. About 524 (60.2%) of the participants had a higher decision making power (Table 2).

Husband Involvement in MNCH Care and Associated Factors

The prevalence of husband involvement in MNCH care among women having children less than one year of age was 66.2% (95%CI: 63.0, 69.3). In the bi-variable analysis: Maternal age, maternal educational status, women's occupation, husband educational status, husband occupation, Average monthly income, condition of pregnancy, mode of delivery and intimate partner violence were significantly associated with husband involvement in MNCH care at a *P*-value <.2. Of the variables found to be significant in bi-variable analysis: maternal age, maternal educational status, husband occupation, condition of pregnancy

Table 2. Obstetric and Maternal Health Service Utilization Related Characteristics of Study Participants in Gondar City, Northwest Ethiopia, 2022 (n = 870).

Variables	Category	Frequency	Percent
Parity	1-2	547	62.9
	≥3	323	37.1
ANC follow up	Yes	849	97.6
	No	21	2.4
Number of ANC visit	1-3	319	37.6
	≥4	530	62.4
Condition of pregnancy	Planned	764	87.8
	Unplanned	106	12.2
Pregnancy supported by family	Yes	815	93.7
	No	55	6.3
Place of delivery	Health institution	844	97
	Home	26	3
Who assisted the delivery	Health professional	844	97
	Traditional Birth attendant	6	0.7
Mode of delivery	Family	20	2.3
	Spontaneous vaginal delivery	514	59.1
	Cesarean delivery	332	38.2
Instrumental	Yes	24	2.8
	No	469	53.6
PNC visit	Yes	401	46.1
	No	371	79.1
Number of PNC visit	<3	98	20.9
	≥3	89	10.2
Medical problem	Yes	781	89.8
	No	421	48.4
Intimate partner violence	Yes	449	51.6
	No	524	60.2
Women's decision making power	Higher	346	39.8
	Lower		

and mode of delivery were statistically significantly to husband involvement in MNCH care in multivariable logistic regression. Whereas, Women's occupation, Husband education status, Average monthly income and Intimate partner violence were not statistically significant to husband involvement in MNCH care.

Women whose age 18-25 years and 26-35 years were 3.02 and 1.77 times more likely to have husband involvement in MNCH care than those women whose age ≥ 36 year [AOR = 3.02, 95% CI: 1.64, 5.56] and [AOR = 1.77, 95% CI: 1.06, 2.96] respectively. The odds of having husband involvement in MNCH care was 2.30 times higher among women who had diploma and above in their educational status compared with those women who had no formal education [AOR = 2.30, 95% CI: 1.28, 4.14]. Husband with occupation status of government employee, merchant and self-employed were 6.47, 3.66, and 3.24 times more likely involved in MNCH care than students [AOR = 6.47, 95% CI: 3.05, 13.73], [AOR = 3.66, 95% CI: 3.05, 13.73] and [AOR = 3.24, 95% CI: 1.49, 7.03] respectively. Respondents who had planned pregnancy were 2.56 times more likely to have husband involvement in MNCH care than those women who had unplanned pregnancy [AOR = 2.56, 95% CI:

Table 3. Bivariable and Multivariable Analysis of Factors Associated with Husband Involvement in MNCH Care Among Women Who Have a Child Less Than One Year of Age in Gondar City, Northwest Ethiopia, 2021 (n = 870).

Variables	Category	Husband involvement		COR (95%CI)	AOR (95%CI)
		Yes	No		
Maternal age	18-25years	124	62	1.80 (1.09, 2.98)	3.02 (1.64, 5.56)**
	26-35years	401	186	1.94 (1.26, 3.00)	1.77 (1.06, 2.96)*
	≥ 36years	51	46	1	1
Women's education status	No formal education	38	60	1	1
	Primary education	75	69	1.72 (1.02, 2.89)	0.91 (0.50, 1.67)
	Secondary education	139	98	2.24 (1.38, 3.62)	1.23 (0.70, 2.18)
	Diploma and above	324	67	7.64 (4.71, 12.39)	2.30 (1.28, 4.14)*
Women's occupation	Government employee	215	35	4.91 (2.12, 11.37)	1.35 (0.56, 1.57)
	Housewife	217	174	0.99 (0.45, 2.19)	1.03 (0.39, 2.70)
	Merchant	67	36	1.49 (0.63, 3.52)	1.28 (0.44, 3.74)
	Self-employed	62	37	1.34 (0.57, 3.17)	1.03 (0.36, 2.95)
	Student	15	12	1	1
Husband education status	No formal education	17	32	1	1
	Primary education	22	37	1.12 (0.51, 2.47)	0.99 (0.39, 2.54)
	Secondary education	89	83	2.02 (1.04, 3.90)	1.66 (0.71, 3.85)
	Diploma and above	448	142	5.94 (3.20, 11.01)	1.80 (0.76, 4.30)
Husband occupation	Government employee	330	77	8.57 (4.31, 17.05)	6.47 (3.05, 13.73)**
	Merchant	111	65	3.41 (1.68, 6.95)	3.66 (1.68, 7.99)**
	Self employed	100	86	2.33 (1.15, 4.70)	3.24 (1.49, 7.03)*
	Daily laborer	21	38	1.10 (0.48, 2.54)	2.60 (0.98, 6.89)
	Student	14	28	1	1
Average monthly income	≤1000ETB	20	25	1	1
	1000-2500ETB	21	52	0.50 (0.23, 1.10)	0.54 (0.23, 1.29)
	2501-5000ETB	82	73	1.40 (0.72, 2.74)	1.02 (0.47, 2.23)
	≥5000ETB	453	144	3.93 (2.12, 7.29)	1.87 (0.87, 4.02)
Condition of pregnancy	Planned	538	226	4.26 (2.78, 6.52)	2.56 (1.56, 4.19)**
	Unplanned	38	68	1	1
Mode of delivery	Spontaneous delivery	287	227	1	1
	Cesarean	274	58	3.74 (2.68, 5.21)	3.13 (2.14, 4.58)**
	Instrumental	15	9	1.32 (0.57, 3.07)	1.96 (0.71, 5.45)
Intimate partner violence	Yes	254	167	1	1
	No	322	127	1.67 (1.26, 2.21)	1.11 (0.79, 1.56)

COR: crude odds ratio; AOR: adjusted odds ratio; CI: confidence interval; ETB: Ethiopian birr, 1-reference category, * $P \leq .05$, ** $P < .01$.

1.56, 4.19]. Women who delivered by cesarean delivery were 3.13 more likely to have husband involvement in MNCH care than women who delivered by spontaneous vaginal delivery [AOR = 3.13, 95% CI: 1.56, 4.19] (Table 3).

Discussion

This community-based cross-sectional study tried to assess husband involvement in MNCH care and associated factors among women having children less than one year of age in Gondar city, northwest Ethiopia, 2021. This study showed that the prevalence of husband involvement in MNCH care was 66.2% (95%CI: 63.0, 69.3). Which is higher than the study conducted in Nigeria 56.9%.¹⁸ The possible reason for this discrepancy could be due to differences in time gaps of the study and sociodemographic characteristics of study participants. For instance, the study conducted in Nigeria showed that only 1% of husband and 1.1% of women completed tertiary

educational level, whereas in our study 67.8% of husband and 44.9% of women attended their tertiary education. This also supported by a study conducted in Adama town, Ethiopia showed that husbands who had better educational level were more involved in MNCH care.¹⁹

Women whose age 18-25 years and 26-35 years were 3.02 and 1.77 times more likely to have husband involvement in MNCH care than those women whose age ≥ 36 year respectively. This might be due to that younger women had more educational attainment.²⁸ This might help to know their health needs and have freely discussion with their husband.

The odds of having husband involvement in MNCH care was 2.30 times higher among women who had diploma and above compared with those women who had no formal education. This finding was supported by the study conducted in Myanmar,²³ husband with highly educated wife had more likely involved in MNH. The possible explanation might be due to the fact that women with higher educational

status had higher level of health care decision making autonomy.^{29,30} Husband involvement is higher among women having involvement in decision making regarding her own health.¹⁶

Husband with occupation status of government employee, merchant and self-employed were 6.47, 3.66, and 3.24 times more likely involved in MNCH care than husband with occupational status of students respectively. This finding was supported by the study conducted in Adama districts Ethiopia, husband being government employed more likely involved in prevention of mother to child transmission of HIV/AIDS.¹⁹ This could be due to the fact that mostly students are busy in their academic activity, this in turn reduces their involvement in MNCH care.

Participants who had planned pregnancy were 2.56 times more likely to have husband involvement in MNCH care than those women who had unplanned pregnancy. This might be planned pregnancy is most common among women who had a husband with educational status of college and above.³¹ Evidences showed that husband who had better educational attainment had more likely involved in ANC and birth preparedness and complication readiness plan.²² Moreover, it might be due to the fact that women who had planned pregnancy get husband and family support.

Women who delivered by cesarean delivery were 3.13 more likely to have husband involvement in MNCH care than women who delivered by spontaneous vaginal delivery. This might be due to the fact that women who delivered by caesarean section are at risk of developing complications and need special care from their husbands.³²

Limitation of the Study

The cross-sectional nature of the study design might not possible to infer the cause and effect relationship between husband involvement in MNCH care and its associated factors. There might be also recall bias.

Conclusion

In this study, husband involvement in MNCH care is low. Maternal age, maternal educational status, husband occupation, condition of pregnancy and mode of delivery were factors significantly associated with husband involvement in MNCH care. Therefore, it is important to advocate policies and strategies that can improve women's educational attainment and actions should be taken to prevent unplanned pregnancy.

List of Abbreviations

ANC	Antenatal Care
AOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crude Odds Ratio
COVID-19	Corona virus disease 2019

HIV/AIDS	Human Immuno deficiency Virus /Acquired Immune Deficiency Syndrome
MNH	Maternal and Neonatal Health
MNCH	Maternal, Neonatal and Child Health
PNC	Post-natal Care
SPSS	Statistical Package for Social Science.

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Authors' Contributions

All authors made a significant contribution to the study reported, whether that is in the conception, study design, execution, acquisition of the data, analysis and interpretation, or in all these areas; took part in drafting, revising or critical reviewing the article; give final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the study.





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Data Availability Statement

The authors declare that the data regarding this manuscript can be accessed as per the request of any interested body.

Supplemental Material

Supplemental material for this article is available online.

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