
Determinant factors of male involvement in birth preparedness and complication readiness at Mekelle town; a community based study

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To cite this article:

Haftom Gebrehiwot Weldearegay. Determinant Factors of Male Involvement in Birth Preparedness and Complication Readiness at Mekelle Town; a community Based Study. *Science Journal of Public Health*. Vol. 3, No. 2, 2015, pp. 175-180. doi: 10.11648/j.sjph.20150302.14

Abstract: Introduction: Every pregnant woman faces risk of life-threatening obstetric complications. A birth-preparedness package promotes active preparation and assists in decision-making for healthcare seeking in case of such complications. The main objective of this study was to assess the determinant factors of male involvement on birth preparedness and complication readiness at Mekelle town. Methods: A community based cross-sectional study was conducted from July to October/2014 among 376 husbands/male whose wives were delivered within the last 12 months at Mekelle town northern part of Ethiopia. Multi stage stratified sampling technique with Probabilities proportional to size was used. Study subjects again were selected by systematic random sampling technique from 6 randomly selected kebele's in the town. Data was collected using structured interview questionnaire and entered, cleaned and analyzed using SPSS version 20.00. Bivariate and multivariate logistic regression analysis was used to avoid any confounding variables. Results: A total of 376 husbands were participated in the study with 95% response rate. About 60% of the husbands had participated in birth preparedness and complication readiness (BP/CR). The study revealed that husbands were more likely to participate in birth preparedness if they had better knowledge in postnatal danger signs (AOR= 4.29, 95% CI: 1.54-11.94) and with good (AOR=9.05, 95% CI=4.27-19.18) & better knowledge on birth preparedness (AOR=16.50, 95% CI=7.25-37.58). Conclusion & Recommendation: Male involvement in birth preparedness and complication readiness is still low in this study. But there is slightly better knowledge on postnatal danger signs and knowledge on birth preparedness and complication readiness. Thus, male awareness in postnatal danger signs and birth preparedness should be increased by local and other concerned bodies to make husbands to share in birth preparedness.

Keywords: Male, Birth Preparedness, Mekelle, Complication

1. Introduction

In sub-Saharan Africa, pregnancy and childbirth continue to be viewed as solely a woman's issue. A male companion at antenatal care is rare and in many communities, it is unthinkable to find male companions accompanying a woman to the labour room during delivery. Thus male involvement in reproductive health has been promoted as a promising new strategy for improving maternal and child health [1,2]. Birth preparedness is a relatively common strategy employed in implementing safe motherhood programs which may be affected by male partner participation because husbands were the most influential decision-maker and as the key member of the family [3].

The 2010 World Health Organization report indicated that,

more than half a million women were dying each year from the complications of pregnancy and childbirth, in which 99% of these deaths occurring in the developing world. Besides this, for every 100,000 live births, 240 women died during pregnancy, childbirth, or the postpartum period in which are mostly from developed countries [4,5]. Decreasing a maternal by three fourth is one of the Millennium Development Goal five (MDG-5) which is should be achieved 2015 [6].

In Ethiopia, the maternal mortality ratio is estimated to be 676 deaths per 100,000 live births, which is among the highest in the world [7]. According to the Ethiopian Federal Ministry of Health, health and health related indicators 82.20% coverage for ANC, only 18.4% of the deliveries are attended by health professionals, 42.10% for postnatal care coverage [8].

Most of the causes of maternal morbidity and mortality are preventable and attributed to the three delays; delay in recognizing problem and delay to seek care, delay to reach place of care, and delay to receive appropriate care. Birth preparedness is educating the mother and her family to recognize the normal signs of labour [2, 3].

In many societies in the world, cultural beliefs and lack of awareness inhibit preparation in advance for delivery and expected baby. Since no action is taken prior to the delivery, the family tries to act only when labor begins. The majority of pregnant women and their families do not know how to recognize the danger signs of complications. When complications occur, the unprepared family will waste a great deal of time in recognizing the problem, getting organized, getting money, finding transport and reaching the appropriate referral facility [7].

It is difficult to predict which pregnancy, delivery or post delivery period will experience complications; hence birth preparedness and complication readiness plan is recommended with the notion of pregnancy is risk [6]. Birth Preparedness and Complication Readiness strategy encourage women to be informed of danger signs of obstetric complications and emergencies,

Choose a preferred birth place and attendant at birth, make advance arrangement with the attendant at birth, arrange for transport to skilled care site in case of emergence, saving or arranging alternative funds for costs of skilled and emergency care, and finding a companion to

Be with the woman at birth or to accompany her to emergency care source. Other measures include identifying a compatible blood donor in case of hemorrhage, obtaining permission from the head of household to seek skilled care in the event that a birth emergency occurs in his absence and arrange a source of household support to provide temporary family care during her absence [8, 9].

Studies conducted on pregnant mother in Ethiopia showed that one of the factors of affecting antenatal care (15.5% husband's disapproval for antenatal attendance, and only 21% of pregnant mother were accompanied by their husbands to the antenatal clinic) [10].

Therefore, male involvement in maternal health is key to ensuring considerable reduction in maternal mortality. This study was conducted to ascertain male involvement in Birth preparedness and complication readiness strategy as important support structures to help reduce delays in accessing maternal health care especially during emergencies.

2. Methods and Materials

2.1. Study Area and Period

This study was conducted from July to October/2014 in Mekelle City. Mekelle is capital city of Tigray Regional State and is located in the Northern part of Ethiopia, at 783 km from the capital city, Addis Ababa. Mekelle has weyna-dega climatic conditions, which is administratively divided into seven sub cities.

The area of study was selected by its lack of tangible previous research under this topic and its convenience access to the investigators.

2.2. Study Design and Source Population

A community based cross-sectional study was conducted among households targeting husbands with having at least one child of less than one year of age in Mekelle town.

All husbands whose wife had a child less than one years of age were included in the study while husbands who were not stay together with their wives during pregnancy and birth of the child and those who were critically ill were excluded from the study.

2.3. Sample Size Determination and Sample Procedure

The sample of 398 husbands was determined using single population proportion formula with 95% level of confidence, 5% margin of error and 21% of husbands estimated to be participated in birth preparedness [11]. Considering, 1.5 design effects and 10% non-response rate. From total 7 sub city in the town 3 of them were selected by lottery method. For each selected kebeles the sample size was allocated proportionally according to their population. Then sampling frame was formed by conducting a census to register all households of husband with wife having less than one year age child. Finally husbands were selected by systematic random sampling technique.

2.4. Data Collection and Procedures

Data was collected using structured questionnaire. The questionnaire was designed in English and was translated to Tigrigna version for better understanding by data collectors and interviewees during the interview time. Finally the instrument was administered in Tigrigna. A total of four data collectors of nurses with degree holder and one supervisor with qualification of Master of public health were involved in data collection.

2.5. Data Processing and Analysis

Data were coded, entered and cleaned. Data analysis was carried out using SPSS version 20 software package.

Simple descriptive statistics such as frequencies, means, and standard deviations were done as appropriate and The associated factor between the different variables in relation to the outcome variable was measured by odds ratio with 95% confidence interval.

2.6. Data Quality Assurance and Control Method

One day training for data collectors was conducted at Mekelle University and Pre-test was done to 5% of the husbands outside the selected rural community to check the effectiveness of the questioners. Revision was made on the questionnaire as necessary depending on the first of the pre-test. Time interval needed per questionnaire was determined after pre-testing.

Following data collection procedures, checking for the completeness of the questionnaire by principal investigator, proper categorization and coding of data were done to assure data quality.

2.7. Ethical Consideration

Ethical clearance was obtained from the ethical review committee of Mekelle University College of Health Sciences. All concerned bodies were officially contacted through letters and permission was obtained at all levels. After the purposes and the procedure of the study were explained, verbal informed consent was obtained from all respondents. Each study participants was informed about confidentiality or privacy throughout the whole process.

3. Results

3.1. Characteristics of Study Participants

Table 1. Socio-Demographic characteristics of respondents at Mekelle, Tigray region, Ethiopia, (N=376).

Variables	Frequency	%
Age in years		
18-29	60	16.00
30-39	174	46.30
40-49	112	29.80
≥50	30	8.00
Ethnicity		
Tigray	373	99.20
Amhara	3	0.80
Religion		
Orthodox	375	99.70
Muslim	1	0.20
Husband's education		
Illiterate	174	46.30
Read and write	123	32.70
Formal education	79	21.00
Husband's occupation		
Farmer	320	85.10
Employed	32	8.50
Self business	24	6.40
Wife's age		
<20	52	13.80
20-34	223	59.30
35-49	101	26.90
Wife's education		
Illiterate	228	60.60
Read and write	42	11.20
Formal education	106	28.20
Wife's occupation		
Farmer	315	83.80
Employed	15	4.00
Self business	46	12.20
Monthly income in Ethiopian birr		
<500	179	47.60
500-1000	133	35.40
>1000	64	17.00

The mean age of study participant was 37.46 ± 8.27 . Almost all 373 (99.20%) were Tigray in ethnicity and 375(99.70) were orthodox in religion. In addition, near half of the respondents, 174(46.30%) and majority of them were farmers (85.1%) by employment.

Regarding their wives' socio-demographic characteristics, their mean age was 28.9 (SD ± 6.9 years) and majority 52(13.80%), them were less than 20 years old. About 228 (60.60%) were illiterate, and majority of them were farmers 315(83.80%) in occupation. About half of the households, 179(47.60%), had income less than 500.00 Ethiopian birr monthly (Table 1).

3.2. Husband's Knowledge in Birth Preparedness and Complication Readiness

This study assessed the knowledge of husbands in BP/CR. Majority of respondents, 88.00% replied as they knew husband birth preparedness. Among those 301(80.10%) were heard about the mother and new born clean clothes preparation, 287(76.30%) were to saving money for child birth, 234(62.20%) to identification of place of birth, 123(32.70%) were to identification of skilled birth attendance and few 65 (17.30%) had the information about identifying blood donor for complications in birth (Table 2).

Table 2. Knowledge of husbands on BP/CR at Mekelle Tigray region, Ethiopia, (N=376).

Variable	Yes (%)	No (%)
Arranging for postpartum cultural food expenses	280(74.50)	96(25.50)
Saving money for Mother's health care	287(76.30)	89(23.70)
Identifying a mode of transportation	246(65.40)	130(34.60)
Identifying place of delivery	234(62.20)	142(37.80)
Clean clothes & other materials for Baby/Mother's	301(80.10)	75(19.90)
Savings for emergencies	215(57.20)	161(42.80)
Awareness an emergency & it immediately action	193(51.30)	183(48.70)
Arrangement for skilled birth assistance	123(32.70)	253(67.30)
Identifying decision maker for emergency	166(44.10)	210(55.90)
Arranging blood donors	65(17.30)	311(82.70)
Identifying date of birth	219(58.20)	157(41.80)
Prevention of HIV mother to child	222(59.00)	154(41.00)

3.3. Level of Husband Participation in Birth Preparedness

In this study husbands practiced at least five components were considered as participated in birth preparedness. Accordingly, majority of the husbands, 227(60.4%) were participated in birth preparedness and the rest, 124(32.98) of them had poor birth preparedness practice (Table 3).

Table 3. The Level of husbands' participation in BP/CR at Mekelle, Tigray Region, Ethiopia, (N=376).

Variables	Frequency	%
Birth preparedness practice		
Poor practice	149	39.60
Good practice	123	32.70
Better practice	104	27.70
Participated in BP/CR(Over all practices)	227*	60.40*

*overall husbands' practice

3.4. Factors Associated with Husband's Participation in Birth Preparedness and Complication Readiness

Table four, showed bivariate and multiple logistic

regression analysis of socio-demographic variables with BP/CR. Bivariate analysis showed that, illiterate (OR= 1.90 (95% CI=1.18-3.06), those able to read and write (OR= 3.47(95% CI=1.9-6.34)), employed husbands (OR=0.26 95% CI=0.09-0.79), average monthly income more than 1000 birr, (OR=2.89 95% CI=1.49-5.94) were significantly associated with husbands' practice on birth preparedness.

In addition to above husbands' wives able to read and write (OR=2.12 95% CI=1.05-4.28) and with formal education (OR=3.07 95% CI= 1.83-5.16), whose wives involved in self business job (OR=2.74 (95% CI=1.31-5.71) were associated with birth preparedness.

In bivariate analysis it is also found that, husbands' whose wife's gave birth once at health facility (OR=2.15 95% CI=1.02-4.55), husbands planed to the conception of the index child was (1.75 (95% CI=1.15-2.66), husbands who felt nearby health facility (OR=2.73 (95% CI=1.73-4.35) were more likely to participate in birth preparedness.

Regarding husbands knowledge on danger signs of

pregnancy and labour, the husbands who had better knowledge in pregnancy (OR=7.72(95% CI=4.32-13.97) and danger signs during labour (OR=9.81(95% CI=4.1-19.28) were more likely to participate. In addition to this, husbands with good (OR=3.32(95% CI=1.68-6.54) and better (OR=16.72 (95% CI=8.67-32.25) knowledge in postnatal danger signs were also more likely to participate in birth preparedness. Those husbands had good and better knowledge in birth preparedness were also more likely to participate in birth preparedness than those with poor knowledge (OR=13.86 (95% CI=7.01-27.40) and (OR=42.9 (95% CI=20.61-89.32) respectively.

Using multiple logistic regression, husbands' better knowledge in the postnatal danger signs (AOR=4.29 95% CI=1.54-11.93), good knowledge in birth preparedness knowledge (AOR=9.05 and, 95% CI=4.27-19.18) those who had better knowledge (AOR=16.50 and 95% CI=7.25-37.6) were significantly associated with participation in birth preparedness (Table 4).

Table 4. Multiple logistic regression analysis for factors associated with BP/CR at Mekelle, Tigray region, Ethiopia.

Variables	Participated in BP/CR		Odds ratio (95% CI)	
	Yes (%)	No (%)	COR	AOR
Husband's education				
Illiterate	86(22.9)	88(23.4)	1.00	1.00
Read and write	80(21.3)	43(11.4)	1.9(1.18-3.06)*	0.81(0.41-1.62)
Literate in formal educations	61(16.2)	18(4.8)	3.47(1.9-6.34)*	1.02(0.4-2.60)
Wife's education				
Illiterate	117(31.1)	111(29.5)	1.00	1.00
Read and write	29(7.7)	13(3.5)	2.12(1.05-4.3)*	1.9(0.7-5.19)
Literate informal educations	81(21.5)	25(6.6)	3.07(1.83-5.2)*	1.75(0.77-3.97)
Husband's occupation				
Farmer	182(48.4)	138(30.9)	1.00	1.00
Employed	25(6.6)	7(1.9)	0.26(0.09-0.79)	0.88(0.2-3.57)
Self business & daily works	20(5.3)	4(1.1)	0.71(0.18-2.79)	1.8(0.37-8.83)
Wife's occupation				
Farmer	179(47.6)	136(36.2)	1.00	1.00
Employed	12(3.2)	3(0.8)	3.04(0.84-10.98)*	0.47(0.09-2.58)
Self business & daily works	36(9.6)	10(2.7)	2.74(1.31-5.71)*	0.54(0.15-2.0)
Husband's plan to conception				
Yes	145(38.6)	75(19.9)	1.75(1.15-2.66)*	1.16(0.62-2.19)
No	82(21.8)	74(19.7)	1.00	1.00
Husband felt near facility				
Yes	180(47.9)	87(23.1)	2.73(1.73-4.35)*	1.41(0.72-2.56)
No	47(12.5)	62(16.5)	1.00	1.00
Knowledge on Pregnancy danger signs				
Poor knowledge	23(6.1)	52(13.8)	1.00	1.00
Good knowledge	39(10.4)	49(13)	1.79(0.94-3.43)	1.32(0.53-3.26)
Better knowledge	165(43.9)	48(12.8)	7.72(4.32-13.97)*	1.82(0.73-4.56)
Knowledge postnatal danger signs				
Poor knowledge	16(4.3)	60(16)	1.00	1.00
Good knowledge	46(12.2)	52(13.8)	3.32(1.68-6.54)*	2.34(0.92-5.98)
Better knowledge	165(43.9)	37(9.8)	16.72(8.67-32.3)*	4.29(1.54-11.93)*
Knowledge on Birth preparedness				
Poor knowledge	14(3.7)	91(24.2)	1.00	1.00
Good knowledge	81(21.5)	38(10.1)	13.9(7.01-27.4)*	9.05(4.27-19.2)*
Better knowledge	132(35.1)	20(5.3)	42.9(20.6-89.32)*	16.5(7.25-37.6)*

* Statistically significant at p<0.05

4. Discussion

This community-based study assessed husband participation in birth preparedness and factors associated

with participation in BP/CR among husbands during pregnancy at Mekelle town.

This study showed that majority of (72.1%) husbands was aware about birth preparedness for at least five of its

components. But only 60.4% of them were participated in birth preparedness during the conception and pregnancy of their child. This finding is similar with the study conducted in 2006, Nepal in which 55% husbands participated in birth preparedness [13].

Coming to the specific practices of husbands' in birth preparedness, in this study about 73% of them have prepared clean clothes for mother and baby before delivery. Besides this about 47% husbands identified place of delivery for their wife. This finding is higher when it is compared with the study done during 2006 Nepal and 2010 Northern Nigeria in which 8.9% of Nepalese [13] and 22.7% of Northern Nigerian husbands prepared clean clothes for the mother and baby. The finding for indentifying place of delivery is also higher compared with the study in Northern Nigeria 9%[12]. Regarding saving money for maternal health care in our study 66% of husbands saved money for emergency and it is similar with the finding of study done in Nepal 48.5% [13].

This study also tried to identify certain factor which can be associated with husband participation in birth preparedness. This study has revealed husbands' awareness of postnatal danger signs and husbands knowledge in birth preparedness as influencing factors for husband participation in birth preparedness. Husbands with better knowledge in the postnatal danger signs were 4 times more likely to participate in birth preparedness than those with poor knowledge. The possible reason could be severity of the complication usually unexpected in any type of birth.

The husbands with good knowledge in birth preparedness were more likely participated in birth preparedness compared to those had poor knowledge. The same as to the good knowledge, those who had better knowledge were also more likely to participate than those with poor knowledge of birth preparedness (AOR=16.50 and 95% CI=7.25-37.6). Since being aware is the basic element for behavioral changes, could be the reason. This is similar with study done in Kenya in which low knowledge on complication is associated with partners[8,12,13].

In Ethiopia, women traditionally enjoy little independent decision making on most individual and family issues, including the option to choose whether to give birth in a health facility or seek the assistance of a trained provider. Though women in the country have constitutional rights of participation in decision making, their involvement is limited at all levels [13,14]

5. Conclusion and Recommendations

Husbands are aware of the BP/ CR, prepared in practice and participated in birth.

Husband with better knowledge in postnatal danger signs and at least having good knowledge in BP/CR are the independent predictors of birth preparedness.

Therefore the policy makers should work to promote the awareness of male partners on the danger signs during postnatal period and birth preparedness, and inform the community about the importance of husbands' participation for

child and mothers. The health office should also strengthen the health education about danger signs of pregnancy and postnatal period to increase the husbands' participation.

In addition to this, counseling should be given for mothers by health care providers during antenatal, delivery and immunization period to convince their husbands about the health risks and the actual maternal health problems which in turns make husbands save money, pay in case emergency arise, identify mode of transportation to health facility, identify blood donor ahead before emergency happen.

Apart from these, husband involvement strategy in at least one antenatal visit should be promoted for the readiness of complications in pregnancy, labor and after labor and to inform them by creating a link through their wives from the midwife or any attendant. Also, health education should be provided for community concerning identification of danger signs in postnatal period and the role of husband in birth preparedness and complication readiness.

Lastly we recommend conducting further studies on barriers of husbands' participation in maternal care.

Abbreviations

BP/CR: Birth preparedness and complication readiness

ANC: Antenatal care services

MDGs: Millennium Development Goals

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