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# Are Husbands Involved in Birth Preparedness and Complication Readiness for Their Wives' Pregnancies?: A Cross-Sectional Study in Nay Pyi Taw, Myanmar

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**INTRODUCTION:** Husbands' involvement in birth preparedness and complication readiness (BP/CR) has been encouraged as a new approach to improve maternal health for safe motherhood since 2000. However, Myanmar is a patriarchy society and despite the strong domination of husbands on the health of their families, their role and involvement in maternal health are still limited.

**OBJECTIVE:** This study aimed to assess husbands' involvement in BP/CR for their pregnant wives in Nay Pyi Taw, Myanmar.

**MATERIAL AND METHODS:** The research was a cross sectional study which was carried out through a structured questionnaire among 198 husbands of pregnant women aged 18 years and above in Nay Pyi Taw.

**RESULTS:** The results showed that 42.4% of husbands included in the study had poor involvement in BP/CR for safe motherhood. Approximately 38% of husbands failed to plan health facility for delivery, 45% did not plan for a skilled birth attendant, 20% did not save money for the delivery, 43% neglected transportation arrangement and 66% did not identify a blood donor in case of emergency. Husbands having good knowledge and positive attitude were significantly ( $p$ -value  $< 0.001$ ) involved in BP/CR as compared to those who did not. In addition, husbands who planned the pregnancy along with wives were involved in BP/CR more than those who did not and association was significant at  $p < 0.001$ .

**CONCLUSION:** Level of husbands' involvement in BP/CR is slightly low for their wives' pregnancies. It was, therefore, recommended that effective husband involvement intervention programmes should be promoted at all levels of healthcare for safe motherhood.

**KEYWORDS:** Husbands, Pregnant Women, Involvement, Birth Preparedness and Complication Readiness, Nay Pyi Taw

## INTRODUCTION

Maternal mortality challenges to the public health sector worldwide, especially in low and middle income countries. Every day, about 830 women die due to pregnancy and child birth complications which is still unacceptably elevated.<sup>1</sup> Globally, more than 50% of a million deaths are accounted by global maternal deaths each year, and among them, a disproportionately 99% of these deaths is borne by low and middle income countries, including Myanmar.<sup>2</sup> With the maternal mortality ratio of 239 per 100,000 live births in low and middle income countries, Myanmar accounts for 178 per 100,000 live births in 2015 despite decades of safe motherhood programmes.<sup>2,3</sup> The death of each mother has an enormous impact on survival and maturing of her children, especially the wellbeing of a family necessarily depends on mother and adversely affect the society at large.<sup>4</sup>

Because of gross burden of maternal mortality and morbidity, health systems and policy in this sector demand for strong partner or family support and community participation along the sequence of maternal health care channel.<sup>5</sup> In order to address these high burden of maternal mortality and

morbidity trends, World Health Organization (WHO) urged special efforts to integrate husband involvement into reproductive health programs, in terms of sharing responsibility and promoting active involvement in maternal health care to carry out safe motherhood successfully since 2001.<sup>6</sup>

Birth preparedness and complication readiness is an extensive strategy targeted to contribute for the timely exploitation of quality maternal and child health care. The fundamental elements of birth preparedness consist of: knowledge of danger signs, planning for skilled birth attendant, transportation, saving money and optionally identified, health facility for delivery place and a potential blood donor in case of emergency.<sup>7</sup> It is based on the premise that every pregnant woman has risk of sudden and unforeseeable life intimidating complications that could result in death not only to herself but also to her baby.<sup>8</sup> Moreover, arranging for birth and being ready for obstetric complications could reduce the three delays; delay in seeking care, reaching care and receiving care which was well explained by the universally accepted 'Three-delays' model and thereby impact on positive birth outcomes.<sup>2,8,9</sup>



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In low and middle income countries like Myanmar, which is identified to be a patriarchal culture influence society where caring pregnancy and childbirth is considered as entirely women's matter and husbands' participation in maternal care persists relatively low.<sup>10,11</sup> Husbands generally do not involve in maternal care of their wives and mostly fail in accompanying antenatal care, delivery and postnatal care, leaving their supportive roles to mother or mother in law, other family members and health care professionals.<sup>10,12</sup> However, husbands are socially and economically influence upon their families, and women's decision to uptake maternal health care services are solely or jointly determined by those sociocultural and economic factors.<sup>11</sup> This condition causes husbands as key partners for promotion of maternal health care and lessening maternal mortality rate. Raising awareness about emergency life threatening obstetric conditions, and engaging husbands in birth preparedness and complication readiness are involved in strategies for husbands' involvement in maternal health care. Increasing awareness of husbands will enable their supports in emergency obstetric care utilization of their wives.<sup>8</sup>

Several published studies have been examined about the vital role of husbands in maternal health care, birth preparedness and complication readiness, but most of the studies were qualitative and only descriptive studies.<sup>5,13,14,15</sup> Moreover, only few studies have directly focused on husbands' involvement in maternal health care for safe motherhood which are still limited in Myanmar.<sup>16,17</sup> Hence, this study intended to assess husbands' involvement level in birth preparedness and complication readiness and its determinant factors for their pregnant wives in Nay Pyi Taw, Myanmar.

## MATERIAL AND METHODS

**Study design and setting:** A cross-sectional study design was applied to assess the husbands' involvement in birth preparedness and complication readiness in Nay Pyi Taw, Myanmar from July to August 2018. The required sample size of 198 husbands was calculated by using the Cochran formula. Eligible participants were husbands of pregnant women who aged 18 years and above living in Nay Pyi Taw at the time of data collection. Multistage sampling technique was used for selection of the study participants. Firstly, Lewe Township and Takkone Township were purposively selected from Nay Pyi Taw Territory due to high population density.

Secondly, five health centres that served high number of pregnant women were selected purposively from each township. From each of these ten health centres, a list of husbands of pregnant women was obtained from assigned midwives. Finally, systematic random sampling method was adopted to choose the required number of study participants from the list of eligible participants using random number generator.

**Data Collection:** The data collection instrument adopted in the present study was a structured questionnaire aiming to elicit (1) general participant characteristics (age, education, occupation, race, religion, type of marriage, family member, education and occupation of wife, wealth index); (2) information, availability and accessibility of maternal health care; (3) knowledge of maternal health; (4) attitude and (5) husbands' involvement in BP/CR. The items within the knowledge, attitude and husbands' involvement in BP/CR questionnaire sections were adapted from 'Monitoring Birth Preparedness and Complication Readiness tools and indicators for maternal and new-born health' elaborated by JHPIEGO.<sup>7</sup> Wealth index was used as a proxy for the economic situation of the study participants and the relevant items were adapted from 'Myanmar Population and Housing Census Survey 2014'.<sup>18</sup>

The questionnaire was reviewed for validity by three experts using Item Objective Congruence index (IOC) and the result  $>0.7$  was acceptable for each question. For reliability, it was adjusted by Cronbach's Coefficient of Alpha  $\geq 0.7$  for attitude part of questionnaire and Kuder-Richardson Formula 20 (KR 20) for dichotomous choices in knowledge and husbands' involvement in BP/CR questionnaire. Interviewing the questionnaire was taken by trained five village health volunteers which took around 30 minutes for each participant.

**Data Analysis:** All the collected data was entered into a Microsoft Excel spreadsheet and analysed by using Statistical Package for the Social Sciences (SPSS) software version 23. Descriptive statistics including frequency, percentage, mean, standard deviation (SD), minimum and maximum for numerical variables and, frequency and percentage were presented to describe categorical variables. For inferential statistics, Pearson's Chi-squared test was performed to show the associations and Fisher's exact test was used if cells whose frequencies less than 5

were more than 20%. Statistical significant was denoted by  $p < 0.05$ . Knowledge section consisted of 52 items and scores were categorized based on Bloom's cut off point (60% - low level; 0 - 30 scores), (60 - 80% - moderate level; 31- 41 scores), and (>80% good level; 42 - 52 scores). Attitude part had 12 items and the results were divided into three groups based on the mean scores  $\pm$  standard deviation (Negative; 0 - 32 scores, Neutral; 33-39 scores, Positive; 40 - 48 scores). Responses to the five questions assessing the husband's involvement in BP/CR were categorized into poor involvement (0-2 scores) and good involvement (3-5 scores).

**Ethical consideration:** The research was approved by the Ethics Review Committee on Medical Research Involving Human Subjects, Department of Medical Research, Ministry of Health and Sports, Yangon, Lower Myanmar (Approval No: ERC/DMR/2018/133). Before starting the interview, the objective of the study, voluntarily involvement and confidentiality were clearly informed and the consent was taken from each participant.

## RESULTS

A total of 198 husbands engaged in this study, with the mean age of 30.1 when standard deviation (SD) was 6. Of the total husbands studied, one-fourth (25.3%) completed high education and 7.5% had university/college education level while more than half studied middle education and below level (67.2%). Majority of them were Burma (98%), followed by Buddhism (94.9%) and monogamous marriage (94.4%). Half of the husbands (52%) were manual workers and 72.2% had family members not more than four, 36.4% lived with mother or mother in law together and 39.4% were highest national quintile of wealth index. Regarding the socio-demographic characteristics of their wives, mean age was about 28.1 (SD  $\pm$  5.9 years), about 79 (40%) completed primary education level and majority of them (60.1%) were dependent as shown in Table 1.

Regarding with BP/CR, two third of total husbands (79.8%) saved money for delivery before their wives gave birth. Among the husbands studied, 61.6% planned health facility for delivery place, 57.1% prepared transportation to birth place and 55.1% arranged skill birth attendant during pregnancy period of their wives. In contrast, only one third of husbands (33.8%) identified blood donor in case for emergencies before give birth of their babies. The result revealed that more than half of the husbands

(57.6%) had good involvement while 42.4% had poor involvement in BP/CR as shown in Table 2.

Socio-demographic characteristics such as age of husbands, ethnicity, religion, type of marriage, number of family members, live with mother or mother in law, national quintile of wealth index, and also age and occupation of wives were found to be no significant association with husbands' involvement in BP/CR. Concerning with education of husbands, it was found statistically significant association with husbands' involvement at p-value  $< 0.001$ . Between husband occupation and their involvement in BP/CR, there was statistically significant at p-value 0.001. According to the result of wives' education, the result was presented to be statistically significant with p value 0.008.

Table 3 revealed the factors associated with husbands' involvement in BP/CR. Among the husbands who did not get information about maternal health care, 70.9% were poor involvement and the association was significant at p-value  $< 0.001$ . The results of relationships between availability and accessibility to maternal health care services and husbands' involvement in BP/CR were also revealed in Table 3. The associations were statistically insignificant between maternal health care service ( $p = 0.244$ ) and travel distance ( $p = 0.098$ ), travelling hours ( $p = 0.887$ ) with good and poor involvement in BP/CR. The results also revealed that the couple who planned well to get current pregnancy tend to have good involvement level than those who did not and the association was significant at p-value  $< 0.001$ .

Results from the Table 3 revealed that there was higher percentage of poor involvement among husbands who had low knowledge level than moderate and good knowledge levels and there was statistically significant association at p-value  $< 0.001$ . For the level of attitude, the association was statistically significant with p-value  $< 0.001$ . In addition, there was a correlation between knowledge and attitude on maternal health care of husbands and it was significant at p-value  $< 0.001$ . Moreover, there were also correlations between husband involvement with both knowledge and attitude and it was statistically significant at p-value  $< 0.001$  which showed in Table 4.

## DISCUSSION

The study has tried to explore the husbands' participation in birth preparedness and complication

GENERAL CHARACTERISTICS	FREQUENCY (n)	PERCENTAGE (%)
Age of husbands (Years)		
18 – 29	99	50.0
30 – 39	86	43.4
40 – 49	12	6.1
≥ 50	1	0.5
Mean ± SD = 30.1 ± 6	Min = 19	Max = 50
Education of husbands		
Illiterate or no formal education	10	5.1
Primary education level	57	28.8
Middle education level	66	33.3
High education level	50	25.3
University/ College education level	15	7.5
Ethnicity		
Burma	194	98.0
Karen	2	1.0
Chin	1	0.5
Rakhine	1	0.5
Religion		
Buddhist	188	94.9
Christian	2	1.0
Hindu	2	1.0
Muslim	6	3.0
Type of marriage		
Monogamous	187	94.4
Polygamous	11	5.6
Occupation of husbands		
Government staff	14	7.1
Self – employee	78	39.4
Dependent	0	0.0
Private employee	3	1.5
Manual worker	103	52.0
Age of wives (Years)		
18 – 29	124	62.6
30 – 39	66	33.3
≥ 40	8	4.0
Mean ± SD = 28.1 ± 5.9	Min = 18	Max = 42
Education of wives		
Illiterate or no formal education	8	4.0
Primary education level	79	39.9
Middle education level	53	26.8
High education level	38	19.2

University/ College education level	20	10.1
Occupation of wives		
Government staff	10	5.1
Self - employee	38	19.2
Dependent/ Retired	119	60.1
Private employee	0	0.0
Manual worker	31	15.7
Family Member		
≤4	143	72.2
>4	55	27.8
Mean ± SD = 3.68 ± 1.51	Min=2	Max=10
Live with mother/ mother in law		
Yes	72	36.4
No	126	63.6
Wealth Index		
National Quintile 1	0	0.0
National Quintile 2	20	10.1
National Quintile 3	21	10.6
National Quintile 4	79	39.9
National Quintile 5	78	39.4

**Table 1.** Numbers and percentage distribution of participants by general characteristics

LEVEL OF PREPAREDNESS	RESULT	FREQUENCY (n)	PERCENTAGE (%)
Plan for delivery place	Yes	122	61.6
	No	76	38.4
Arrange skill birth attendant	Yes	109	55.1
	No	89	44.9
Saving money	Yes	158	79.8
	No	40	20.2
Plan for transportation	Yes	113	57.1
	No	85	42.9
Plan for blood donor	Yes	67	33.8
	No	131	66.2
Husband Involvement in birth preparedness and complication readiness Mean ± SD = 2.87±1.53	Good involvement (≥3 items)	114	57.6
	Poor involvement (<3 items)	84	42.4
		Min=0	Max=5

**Table 2.** Husbands' involvement in Birth Preparedness and Complication Readiness (n=198)

CHARACTERISTICS	GOOD INVOLVEMENT	POOR INVOLVEMENT	CHI-SQUARE	P-VALUE
	n (%)	n (%)		
Getting information about maternal health care			50.578	<0.001*
Yes	89 (78.1)	23 (27.4)		
No	25 (21.9)	61 (72.6)		
Maternal health care service in ward/village			1.681	0.244‡
Yes	109 (56.8)	83 (43.2)		
No	5 (83.3)	1 (16.7)		
Travel distance (miles)			4.640	0.098
<2	49 (50)	49 (50)		
2 - 4	50 (65.8)	26 (34.2)		
>4	15 (62.5)	9 (37.5)		
Travelling hours (minutes)			0.457	0.887‡
<30	87 (58.4)	62 (41.6)		
30 to 60	25 (54.3)	21 (45.7)		
>60	2 (66.7)	1 (33.3)		
Planned well to get current pregnancy			40.030	<0.001*
Yes	79 (79.8)	20 (20.2)		
No	35 (35.4)	64 (64.6)		
Level of knowledge			76.504	<0.001*
Good	33 (28.9)	0 (0)		
Moderate	39 (34.2)	2 (2.4)		
Low	42 (36.8)	82 (97.6)		
Level of attitude			56.7051	<0.001*
Positive	52 (45.6)	1 (1.2)		
Neutral	58 (50.9)	63 (75)		
Negative	4 (3.5)	20 (23.8)		

**Table 3.** Factors associated with husbands' involvement in birth preparedness and complication readiness (n=198) (\*p-value < 0.05, † Fisher's Exact Test)

and complication readiness during pregnancy in Nay Pyi Taw, Myanmar. This study presented that half of the husbands (57.6%) planned for birth preparedness and complication readiness. Other husbands' involvement in maternal health studies conducted in Nepal<sup>19</sup> and Ethiopia<sup>20,21</sup> revealed the similar results i.e nearly half of the husbands involved in BP/CR. But, disparities were found in each content of husband

involvement in BP/CR and precisely, every four of five husband in this study (79.8%) in this study involved indirectly as financial support for maternal health care of their wives. That result was coincident with the studies conducted in Nigeria by Ibrahim<sup>22</sup> and Rwanda by Kalisa<sup>23</sup> in which husbands were more likely to involve financially rather than direct involvement as arranging for skilled birth attendant

	ATTITUDE		HUSBANDS' INVOLVEMENT	
	r	p-value	r	p-value
Knowledge	0.597	<0.001*	0.653	<0.001*
Attitude			0.479	<0.001*

**Table 4.** Correlation between knowledge, attitude and husbands' involvement in BP/CR (\*significant at p-value < 0.05)

and identifying a blood donor in case of emergency. The alarming result of this study was two out of three husbands did not identify blood donor for their wives

in case of emergencies before give birth. These husbands are missing in life-saving measures and it can be recognized as a risk to maternal health

emergency in case of bleeding during pregnancy, delivery and postpartum, which lead to maternal death. In Myanmar, three in ten women had blood loss due to antepartum and postpartum hemorrhage and maternal death was increasingly high due to hemorrhage.<sup>3</sup> In addition, blood borne infectious disease such as HIV, hepatitis and malaria must be screened precisely from the donated blood.

The study results also showed that nearly half of the husbands failed to plan transportation to birth place which presented the identical results with other similar studies in Nepal<sup>13</sup> and Myanmar.<sup>16</sup> It indicates that if emergency situation happen unfortunately, it can be in trouble to reach health facility timely to prevent complications of birth or death. In this study, while one third of husbands did not plan delivery place for their wives, nearly half of husbands failed to identify skilled birth attendant. This is a troublesome issue and to be institutional delivery, recommended type of delivery in Myanmar, pregnant women must be assisted by skilled birth attendant in health care facility using clean delivery kit which can prevent birth complication circumstances and maternal death.<sup>24</sup> Such BP/CR elements are implicated in the complex pathways, lack of financial support for delivery follow by lack of transportation arrangement, women cannot reach to health facility and threat to maternal survival can be occurred by unskilled birth attendants. Therefore, safe motherhood interventions that encourage husbands to participate in planning BP/CR could also aid to salvage the life of mother and child.

This study also explored the determinant factors related with husbands' involvement in BP/CR. In this study, there was no significant association between age of husband and their involvement which showed the consistence study result done by Ampt in a peri-urban region of Myanmar in 2015<sup>16</sup> and Wai in Yangon, Myanmar.<sup>17</sup> But a comparable cross sectional study about husbands' participation in BP/CR conducted in Northern Nigeria by 2014, it had reverse results that age of husbands were positively associated with their involvement in BP/CR for their wives' pregnancies.<sup>22</sup>

While husbands' education level and occupation were significantly associated with their degrees of involvement in this study, other studies conducted in Nepal<sup>13</sup> and Nigeria<sup>25</sup> showed the similar results of that significant association. This might because in

Myanmar, one of the low income countries, the vicious cycle of illiteracy, majority with low education level are manual workers and most of their time are used in work for their livelihood of their family rather than health care. Wives' education was observed as one of the predictors of their husband involvement in BP/CR of maternal health care because there was significant association between wives' education level and husband involvement. One husbands' involvement in maternal health conducted by Ampt in Myanmar found the association between wives' education and husband involvement, specifically in relation to share maternal health knowledge and decision making for uptake of health care.<sup>17</sup>

The result showed, as have others done in Myanmar by Wai<sup>16</sup> and Ampt<sup>17</sup> that husbands with high knowledge levels about maternal health care and danger signs during pregnancy, delivery and postnatal period were more likely to involve in BP/CR of their wives' pregnancies. This results might be due to husbands approaching to involve in BP/CR by getting knowledge through high risk pregnancies after recognizing the danger signs of their wives' pregnancies. In addition, husbands might involve more because higher knowledge initiated them to aware the probable dangers during pregnancy and childbirth and the importance of maternal health care seeking. In this occasions, maternal health intervention programmes intention to improve husbands' knowledge of maternal and reproductive health might influence positive effect on their involvement level.

In this study, not only education and knowledge of husbands but also their attitude on maternal health care was also positively associated with involvement in BP/CR. It was reasonable because such factors were implicated in the linkage pathway between education level, knowledge, attitude and their involvement. However, this association is not universal because Ampt found that there was no association between attitude of husbands and their involvement in multivariate analyses.<sup>17</sup>

## CONCLUSION

To the best of our knowledge, the strength of this study is the very first study on husbands' involvement in birth preparedness and complication readiness among husbands of pregnant women in Nay Pyi Taw, Myanmar. The results of this study identified that half of the husbands (57.6%) involved to plan in birth

preparedness and complication readiness even though they had inadequate knowledge and attitude. Husbands with illiterate and low education level should be given precedence to provide maternal health care education in order to promote their engagement in BP/CR. The implementation and evaluation in details of husband involvement strategies are also needed in maternal health care for improving safe motherhood. Furthermore, similar study in different location, effective intervention study about husband involvement for safe motherhood and qualitative studies in focus group discussion and in-depth interview among husbands to explore the underlying reasons of those who did not involve are also encouraged.

### FUNDING

This research was supported by Graduate School Thesis Grant, Graduate School, Chulalongkorn University.

### ACKNOWLEDGEMENT

The researchers would like to acknowledge sincere gratitude to husbands of pregnant women who had participated in this study.

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**Source of support:** Nil, **Conflict of interest:** None declared

**Cite this article as:**

Chan OOM, Aung SSM, Panza A. Are Husbands Involved in Birth Preparedness and Complication Readiness for Their Wives' Pregnancies?: A Cross-Sectional Study in Nay Pyi Taw, Myanmar. *Int Healthc Res J*. 2019;3(1):23-31. doi: 10.26440/IHRJ/0301.04.521070

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