

# Factors Associated with the Participation of Expectant Fathers in Birth Preparedness Plan for Their Wives' Pregnancies in Nay Pyi Taw Territory, Myanmar

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**Abstract**— Evidence proved that male participation in maternal health care contributes to positive health outcomes for women and their children. However, the role of male participation in maternal health care is understudied in Myanmar. This study was conducted to assess the participation of expectant fathers in birth preparedness plan for their wives' pregnancies in Nay Pyi Taw, Myanmar. This community based cross-sectional study was undertaken among 198 expectant fathers from selected ten health centres' catchment areas villages, Lewe and Takkone Townships, Nay Pyi Taw Territory. Thirty nine per cent of studied expectant fathers participated in the well birth plan for their wives. Out of the total expectant fathers studied, saving money was the common index (79.8%) with identification for safe blood in case of emergency being the least index (33.8%). Expectant fathers with high knowledge and positive attitude in maternal health were more likely to plan birth preparedness compared to those of low knowledge and negative attitude and it was significantly associated with  $p$ -value  $<0.001$ . The participation of expectant fathers in the birth preparedness plan was remarkably low because they involved passively in the life saving item as planning safe blood for emergency cases. Thus, an initiative programme for encouraging expectant fathers is needed to increase their participation in a birth plan through peer leading, culturally sensitive education and proper health care system.

**Keywords**— Expectant fathers, Participation, Birth preparedness, Wives' pregnancies, Nay Pyi Taw.

## I. INTRODUCTION

Life of women could be threatened by pregnancy and child birth because of obstetric complications. It refers to women deaths during pregnancy, delivery or within 42 days after delivery from any cause originating from the pregnancy or its management. Maternal mortality is a crucial public health issue in developing countries (WHO, 2013). Enhancing maternal health is undertaken as a developmental goal internationally and under the Sustainable Development Goals (SDGs), reducing maternal mortality ratio to 70 per 100,000 live births by 2030 is a vital target (WHO, 2015a).

In Myanmar, high maternal mortality poses a huge challenge to the health system and maternal health programme. One out of ten deaths among the reproductive aged women (15-49 years) was maternal deaths. According to

the results of 2014 Myanmar Population Census, there were 2,797 maternal deaths annually in Myanmar. Myanmar stands second-highest maternal mortality ratio (MMR) in the Association of Southeast Asian Nations (ASEAN), at 282 per 100,000 live births in 2014 despite decades of safe motherhood programmes which is also three times higher than 2030 global target. Multiple risk factors have been found which lead to maternal death and most deaths are caused by preventable and curable conditions such as bleeding and infection. These conditions are prominent in rural areas and particularly relevant for Myanmar as 70% of the population resides in rural areas. Therefore, MMR is significantly higher in rural areas and women who live there are more likely to give birth at home although health facilities provide basic and emergency obstetric care, which illustrates that maternal health care does not reach everyone according to the 2014 census report (Department of Population, 2016).

Because of the main concern of high maternal mortality, health systems challenge the demand for a strong partner, family and community support along the maternal health care pathway sequence (Yargawa & Leonardi-Bee, 2015). One such important strategy is the birth preparedness plan, an approach that has prospective positive impacts to improve utilization of health facility for delivery, skilled birth attendants and emergency obstetric care (Solnes Miltenburg et al., 2015). Utilization of health facility for the delivery place, skilled birth attendants and assessing emergency obstetric care are verified interventions globally to reduce maternal mortality and save the life of neonates (Tadesse, Boltana, & Asamoah, 2018).

Generally, male partners are the most powerful decision makers in societies and since 2000, participation in the birth plan has been strengthened as a new action design to promote maternal health for safe motherhood (UNFPA, 2000). WHO integrated male partner involvement in reproductive health programmes to carry out safe motherhood successfully since 2001. Husbands' involvement, behavior and awareness impact not only the reproductive health of women but also the well-being of children, including society as well (WHO, 2007).

Birth preparedness is a comprehensive strategy targeted to improve the timely utilization of quality maternal and newborn care, mainly during delivery, based on the concept that providing for delivery and being ready for pregnancy complications which reducing delays in receiving the care. The crucial items of birth preparedness plan are arranging; the birthplace in a health facility, skilled birth attendant, saving money, transportation and identifying blood donors in both normal and emergency situations. Male partners can support by doing birth preparedness plans and arrangements so that their wives can reach and receive treatment timely in emergency obstetric conditions (JHPIEGO, 2004).

Myanmar is a patriarchal society so that maternal and newborn health and family planning is regarded as women's concern and male partners' participation in those matters was limited (UNFPA, 2010) (Sein, 2012). Women's decision to uptake maternal health care services are solely or jointly determined by sociocultural and economic factors. On the other hand, male partner involvement in maternal health also makes a challenge on women's uptake of maternal health services in Myanmar (Wai K.M., Shibanuma A., Oo N.N., Fillman T.J., Saw Y.M., Jimba M., 2015). Moreover, although many research have been conducted about the important role and responsibility of male partners in maternal health care, only a few have directly targeted male partners and their participation in the birth plan. Thus, this study designed to assess the participation of expectant fathers in birth preparedness plans for their wives' pregnancies in Nay Pyi Taw, Myanmar.

## II. METHODOLOGY

### A. Study area and setting

A community based cross sectional study was carried out in two townships of Nay Pyi Taw Territory namely Lewe and Takkone townships in the month of July and August 2018. Expectant fathers of age  $\geq 18$  years whose wives had pregnancy and living in Nay Pyi Taw at data collection time were included in this study. To select the participants of this study, the multistage sampling method was used. Firstly, two townships from Nay Pyi Taw were purposively selected. The relevance of choosing these two townships was the high population density areas of Nay Pyi Taw Territory. Secondly, a list of expectant fathers whose wives had pregnancy (Gravida 1) was obtained from the assigned area midwives of the study area. Cochran formula was used in the calculation to get the required sample size and a total of 198 expectant fathers, 99 from each township irrespective of ethnicity and religion was selected by systematic random sampling method using a random number generator.

### B. Data collection

Data collection was conducted through an interviewer-administered questionnaire by using structured questions. Participants were asked about their socio-demographic and economic profile, general characteristics of their wives, knowledge and attitude of maternal health care and participation in birth preparedness plan. Knowledge, attitude and participation in birth preparedness questions were adopted

from JHPIEGO's handbook namely, 'Monitoring Birth Preparedness and Complication Readiness tools and indicators for maternal and new-born health' (JHPIEGO, 2004). The National quintile of wealth index was used to assess the economic status of the study participants which was adopted from the equity tool of 'Myanmar Population and Housing Census Survey 2014' (Ministry of Labour, 2014). Before starting the interview, all study participants were informed clearly about the objective of the study and their right to answer the questions or refuse to involve in this study.

### C. Data quality management, entry and analysis

The structured questionnaire was reviewed by three experts for validity and conducted pretesting on similar socioeconomic characteristics and geographical location outside the study area before the actual data collection. It was also adjusted by Cronbach's Coefficient Alpha  $\geq 0.7$  for attitude questionnaire section and Kuder-Richardson formula 20 (KR 20) for dichotomous choices questionnaire in knowledge and birth preparedness plan sections. Six village health volunteers, based on their previous experience, were recruited and trained to become interviewers for data collection, and researchers closely supervised the data collection process.

All the collected data were checked every day for the consistency and completeness, and entered into the Microsoft Excel sheet and then exported to Statistical Package for the Social Sciences (SPSS) version 23 for analysis. Categorical variables were tabulated and showed by frequency, and percentage while numerical variables were summarized into ranges and presented in terms of mean, standard deviation, frequency and percentage. Pearson's Chi-squared test of significance was used for testing the associations. Fisher exact test was performed when cells' frequencies  $< 5$  were more than 20%. P value  $< 0.05$  was set for the level of significance.

The total score of each knowledge and attitude outcome was determined based on Bloom's cut off point (Bloom, Hastings, & Madaus, 1971). Knowledge part had 27 items about the danger signs during pregnancy, delivery and postpartum period and the total score was classified into high knowledge level ( $>80\%$ ; 23-27 scores), moderate knowledge level (60-80%; 16 – 22 scores) and low knowledge level ( $<60\%$ ; 0 – 15 scores). Meanwhile, attitude part consisted of 12 items and the total score was categorized into positive attitude ( $>80\%$ ; 37-48 scores), neutral attitude (60-80%; 25-36 scores) and negative attitude ( $<60\%$ ; 12-24 scores). Birth preparedness plan was measured by giving one score for each element and an expectant father was considered to be 'well planned' in birth preparedness if he attempted at least four out of five birth preparedness practices list.

### D. Ethical consideration

Ethical clearance was obtained from 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). Informed verbal consent was taken from each study participant prior to data collection, and the

objective of the study, voluntarily participation, information on confidentiality and privacy of the study participants were explained clearly before starting the interview.

III. RESULTS

The socio demographic information and anthropometric measurement of expectant fathers and their wives were presented in table 1. Of the 198 expectant fathers engaged for this study, the age of study participants ranged from 19 to 50 years and more than half of expectant fathers (51%) were aged 30 years and above. A total of 65 expectant fathers (32.8%) had high school or university education level, 66 (33.3%) had a secondary level while others had primary level (28.8%) and illiterate (5.1%), respectively. Ethnically, a large number of study participants (98%) were Burma and belonged to the Buddhist religion (94.9%).

TABLE 1. Number and percentage distribution of participants by socio demographic characteristics

General Characteristics	Frequency (n)	Percentage (%)
<b>Age of expectant fathers (Years)</b>		
<30	97	49.0
≥30	101	51.0
Mean±SD = 30.09±6.02	Min = 19	Max =50
<b>Highest education level of husbands</b>		
Illiterate	10	5.1
Basic literacy/Primary school level	57	28.8
Secondary school level	66	33.3
High school/University level	65	32.8
<b>Ethnicity</b>		
Burma	194	98.0
Others	4	2.0
<b>Religion</b>		
Buddhist	188	94.9
Others	10	5.1
<b>Occupation of expectant fathers</b>		
Government/private employee	17	8.6
Self – employee	78	39.4
Manual worker/daily worker	103	52.0
<b>Age of wives (Years)</b>		
<30	124	62.6
≥30	74	37.4
Mean ± SD = 28.09± 5.89	Min = 18	Max =42
<b>Highest education level of wives</b>		
Illiterate	8	4
Basic literacy/Primary school level	79	39.9
Secondary school level	53	26.8
High school/University level	58	29.3
<b>Occupation of wives</b>		
Employed	79	39.9
Unemployed/housewife	119	60.1
<b>Age difference</b>		
≤5 years	171	86.4
>5 years	27	13.6
<b>Family Member</b>		
<4	106	53.5
≥4	92	46.5
Mean±SD = 3.68±1.5	Min = 2	Max = 10
<b>Residence</b>		
Urban	80	40.4
Rural	118	59.6

The majority were manual or daily workers (52%) and participants’ family size was ranging from 2 to 10. Regarding the general characteristics of participants’ wives, it was a reverse result with expectant fathers that the majority of wives

were aged younger than 30 years. One third of wives had primary education level and the majority (60.1%) were unemployed housewives. According to the age difference of expectant fathers and their wives, one-fifth of study participants had an age difference for more than five years.

Figure 1 revealed the expectant fathers’ involving in a birth preparedness plan. More than half of the husbands arranged the place of delivery (61.6%), skilled birth attendant to take delivery (55.1%) and transportation to use for delivery or specific emergency (57.1%). Four out of five expectant fathers saved money for delivery and emergency situations while one in three participants arranged blood donor in case of emergency.

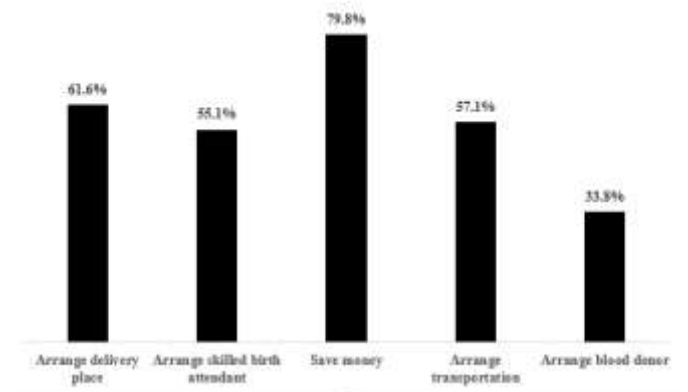


Fig. 1. Expectant fathers’ participation in birth preparedness

Expectant fathers’ participation in the birth preparedness plan was summed up by transforming it into two levels namely; well-planned and not well planned which shown in table 2. The result showed that more than half of the expectant fathers (61.1%) were not well-planned in birth preparedness.

TABLE 2. Level of participation in birth preparedness among studied expectant fathers

Level of preparedness	Frequency (n)	Percentage (%)
Well planned (>3 items)	77	38.9
Not well planned (≤3 items)	121	61.1

Socio-demographic characteristics of expectant fathers including the age of expectant fathers and their wives, ethnicity, religion, number of family members, occupation of wives and age differences between expectant fathers and their wives revealed no significant association with well-planned in birth preparedness before giving birth. Concerning with education of expectant fathers and wives, the results were presented to be statistically significant with p-value <0.001. According to the results of expectant fathers’ occupation, it was found a statistically significant association with well-planned in birth preparedness at p-value<0.001.

Availability, accessibility, and affordability of the maternal health care facility were presented in table 3. Among the expectant fathers who got information about maternal health information, 67.9% were well-planned in birth preparedness and the association was significant with p-value <0.001. There was no associations between their residing places, present of maternal health care facility at their residing place and prepared a birth plan. Regarding with accessibility to maternal

health care facility, travel distance and travelling time to the nearest health care facility and the results showed no significant association. The average cost for each antenatal visit was assessed to determine the affordability to the maternal health care facility and there was no association between them.

TABLE 3. Determinant factors of expectant fathers' participation in birth preparedness

Characteristics	Well planned	Not well planned	Chi-square	p-value
	n (%)	n (%)		
<b>Getting maternal health information</b>			91.051	<0.001*
Yes	76 (67.9)	36 (32.1)		
No	1 (1.2)	85 (98.8)		
<b>Residence</b>			1.335	0.248
Urban	35 (43.8)	45 (56.3)		
Rural	42 (35.6)	76 (64.4)		
<b>Maternal health facility in residing area</b>			2.009	0.210 <sup>‡</sup>
Yes	73 (38.0)	119 (62.0)		
No	4 (66.7)	2 (33.3)		
<b>Travel distance (miles)</b>			0.157	0.692
≤2	54 (38.0)	88 (62.0)		
>2	23 (41.1)	33 (58.9)		
<b>Time taken to reach nearest health facility</b>			1.481	0.477
≤15 minutes	45 (42.9)	60 (57.1)		
16 – 30 minutes	21 (34.4)	40 (65.6)		
>30 minutes	11 (34.4)	21 (65.6)		
<b>Average cost for each AN visit (kyats<sup>a</sup>)</b>			1.073	0.585
≤2500	39 (36.1)	69 (63.9)		
2501 – 5000	19 (39.6)	29 (60.4)		
>5000	19 (45.2)	23 (54.8)		
<b>Pregnancy intention</b>			46.945	<0.001*
Indented pregnancy	62 (62.6)	37 (37.4)		
Unintended pregnancy	15 (15.2)	84 (84.8)		
<b>Levels of knowledge on maternal health</b>			114.239	<0.001*
High	25 (92.6%)	2 (7.4)		
Moderate	44 (75.9)	14 (24.1)		
Low	8 (7.1%)	105 (92.9)		
<b>Levels of attitude towards birth preparedness</b>			93.755	<0.001*
Positive	50 (94.3)	3 (5.7)		
Neutral	24 (18.2)	108 (81.8)		
Negative	3 (23.1)	10 (76.9)		

\*p-value < 0.05, † Fisher's Exact Test, <sup>a</sup> (1500kyats=1US\$)

The results in table 3 also showed that couples who intended for the current pregnancy tend to have a well birth plan than those who did not intend and it was statistically significant at p-value <0.001. Moreover, expectant fathers who had high knowledge level and positive attitude were more likely to prepare well birth plan. There was higher percentage of well birth plan among expectant fathers who had positive attitude and the result revealed a statistically significant association between them (p-value <0.001).

#### IV. DISCUSSIONS

Delayed in seeking care and reaching health facilities for obstetric emergencies are major contributors to maternal death

and planning in birth preparedness provides to withdraw these delays (Thaddeus & Maine, 1994) (JHPIEGO, 2004). This study examined the important elements of birth preparedness to maternal health, of expectant fathers whose wives had pregnant in Nay Pyi Taw territory, Myanmar. In the context of a birth preparedness plan, arranging birth place in the health facility, arranging skilled birth attendants, saving money, arranging transportation and identifying blood donors in not only for the normal situation but also for preparing in case of emergency. This study showed that more than half of the expectant fathers were either not well-planned or not participating at all birth preparedness items as they were preparing three or fewer elements of birth preparedness during pregnancy period. This result revealed the higher percentage of expectant fathers not involving in the birth preparedness plan compared with the study conducted in Northern Ethiopia, in which husbands who involved in the birth plan constituted about 40% (Gebrehiwot Weldearegay, 2015). Involvement of husbands or expectant fathers in birth preparedness plan shows to be specific context, with low overall participation in some studies (August, Pembe, Mpembeni, Axemo, & Darj, 2015) (Tadesse, Boltena, & Asamoah, 2018) (Tadesse et al., 2018) and high in others (Wai K.M., Shibanuma A., Oo N.N., Fillman T.J., Saw Y.M., Jimba M., 2015). This may be due to the discriminative involvement of males in the birth plan and conservative socio-cultural context.

WHO encourages birth preparedness plan as one of the vital interventions for utilization of health care facility services and skilled birth attendant resulting to reduce preventable maternal deaths (WHO, 2009) (WHO, 2015b). Critical gaps in birth preparedness plan of expectant fathers for the wives have been identified in this study. Overall, this study recognized that expectant fathers' participation in the birth preparedness plan was low, with saving money being the common index and prior identification for safe blood being the least index. This finding was similar with the cross sectional studies done in Nepal (Bhattarai & Bhusal, 2017) and Nigeria (MS Ibrahim, SH Idris, AA Abubakar, AA Gobir, SS Bashir, & Sabitu, K., 2014) in which husbands of pregnant women were more likely to prepare in saving money than other important indexes as planning skilled birth attendant and preparing safe blood for emergency cases before delivery. This is the alarming sign of this study and expectant fathers are missing in the arrangement of life saving measures. It can be observed as a possibility to maternal health emergency and death because one third of maternal deaths are due to blood loss or haemorrhage during pregnancy, delivery and postpartum period (Department of Population, 2016).

In this study, about 44.9% of expectant fathers did not arrange skilled birth attendant and 38.4% failed to plan delivery place in the health facility. This is a crucial concern and to be recommended delivery type, institutional delivery, pregnant women must give birth to their babies in a health care facility by a skilled birth attendant by using a clean delivery kit in Myanmar. Institutional delivery promotes safe motherhood by preventing from childbirth complications occurrence and maternal death (Sports, 2017). The finding of this study also showed that two out of five expectant fathers

did not plan the transportation for delivery or in case of emergency to reach health facility in time. Other cross sectional studies done in Nepal (Punam & Bhawana, 2017) and Myanmar (Wai K.M., Shibanuma A., Oo N.N., Fillman T.J., Saw Y.M., Jimba M., 2015) showed a similar result that nearly half of husbands were failed to plan transportation. Unfortunately, if an emergency condition appears, it can face trouble and be in the problem to reach a health care facility which can give rise to birth complications and death. Indexes of birth preparedness plan are connected in a channel, absence of financial support for maternal care give rise in missing transportation arrangement, resulting in timely arrival to the maternal health facility and threatening the life of mother and child.

Highest education attainment of both expectant fathers and their wives, and the occupation of expectant fathers were significantly associated with their involvement level in birth preparedness in this study and this result was consistent with other cross sectional studies done in Nigeria (Mfuh, Lukong, Olokoba, & Zubema, 2016) and Nepal among married men (Punam & Bhawana, 2017). This might be because of the vicious cycle of poverty and illiteracy in low income countries, people with low education level are daily wage or manual labours and used most of their time in work for subsistence rather than others. In this study, expectant fathers who intended the current pregnancy together with their wives were more likely to participate in birth preparedness than those who did not intend. This might be because expectant fathers could dominate on the existence of intended or unintended pregnancies among their wives and it was proved in the cross sectional studies about assessment of pregnancy intention and associated factors among pregnant women by Ayele in Ethiopia (M Ayele, N Hamba, & Gudeta, 2017).

This study also tried to measure certain factors that can be related to expectant father participation in a birth preparedness plan. The finding of this study revealed that expectant fathers' knowledge and attitude in maternal health as influencing factors for the participation of expectant fathers in a birth preparedness plan. Expectant fathers with high knowledge level in danger signs of maternal health were more likely to plan birth preparedness compared to those of low knowledge level. Moreover, expectant fathers having positive attitude in maternal health were four times more likely to involve in birth preparedness than those with negative attitude. This is similar to cross sectional studies done in Ethiopia (Gebrehiwot Weldearegay, 2015) and in Nigeria (Iliyasu, Abubakar, Galadanci, & Aliyu, 2010) which showed that low knowledge level in maternal health was associated with involvement of male partners. Since having good knowledge is the basic element followed by positive attitude for behavioural changes, this could be the reason for participation in birth preparedness.

## V. CONCLUSION

Considering the lack of existing study on birth preparedness plan among expectant fathers in the area, this study represents a valuable result of male participation in Nay Pyi Taw Territory, Myanmar. Using a standard measurement tool, conducting pre-test before actual data collection, training

to data collectors and supervision to control the data quality, support the strength of this study. Expectant fathers' participation in birth preparedness plan was relatively low in this study. This study result contributes useful baseline data for further research and the National Maternal Reproductive Health Programme to promote maternal healthcare and safe motherhood intervention. Intervention programme should be targeted towards improving expectant father participation through developing targeted policies and plans across all stakeholders. Moreover, further study with the same study design in changing areas, intervention study about expectant fathers' involvement in birth preparedness plan and qualitative study about the information and reason of cultural context issues on expectant fathers' involvement in a birth preparedness plan.

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