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Birth Preparedness and Complication Readiness among Antenatal Women in a Tribal Area of a Central District, Kerala

Jerry Rachel [α] & Catherin Nisha [σ]

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Results: The mean age of the antenatal women was 24.9 ± 4.04 yrs and mean age at marriage was 20.5 ± 3.26 yrs. Among the women, 22(36.67%) of them has higher secondary education, 9(15%) has primary education. Among them, 54(90%) planned to deliver in government hospital and 5(8.34%) women planned to deliver in private hospital. Among the women, healthcare workers had visited 41(68.33%) of the antenatal women. Only 5(8.33%) knew about danger signs of pregnancy.

Conclusion: In this study birth preparedness was inadequate and the antenatal women are planning to deliver in healthcare facility. Almost two third of the women had the birth of their last child in hospital facility. Most of the women had not arranged money, transportation, blood donor, skilled providers prior to delivery.

Keywords: antenatal women, birth preparedness, complication readiness, cross sectional study, tribal area.

I. Introduction

Obstetric complications and maternal deaths following childbirth becomes a burden on many women and their families(1). Maternal deaths accounts to almost 303,000 in 2015 and most deaths are reported from Sub Saharan Africa (66%) and then from South Asia (22%)(2). Birth preparedness and complication readiness is a comprehensive package which aims to promote timely access to skilled maternal and neonatal services. It focuses on the active preparation and decision making process in the delivery of pregnant ladies and their families(3). The risk of sudden and unpredictable life threatening complications is equal to all the pregnant women. Around the world, different cultural beliefs are practiced and the deficiency in awareness leads to lack of preparation for the delivery and only takes action when the labour begins(4).

Birth preparedness and complication readiness (BPCR) include many elements, including: "(a) knowledge of danger signs; (b) plan for where to give birth; (c) plan for a skilled birth attendant; (d) plan for transportation; (e) a birth companion; and (f) identification of compatible blood donors in case of emergency"(5). India has major breakthrough in reducing maternal mortality ratio by 77%, from 556 per 100,000 live births in 1990 to 130 per 100,000 live births in 2016. Although India couldn't achieve the Millennium Development Goal target, India is aiming for the Sustainable Development Goal target of an Maternal Mortality Ratio below 70 by 2030(6). Maternal Mortality Ratio in Kerala in 2016 is 46 per 100,000 live births(7). Kerala performs better in delivery of antenatal check up services than any other states in India(8). Tribal population in Kerala constitutes 1.45% of total population(9). Maternal health care services were fully utilized by 85.7% of tribal women in Wayanad, Kerala (8).

Around the globe almost 40% of pregnant women face acute obstetric complications. World Health Organization state that women in developing countries sustain short term or long term morbidities due to pregnancy and child birth. India being a developing country is in the fore front in carrying the burden of maternal mortality(10). The proposition of birth preparedness and complication readiness in third world countries with substantive illiteracy, incompetent infrastructure, poor transportation, delayed access to medical fraternity have the capacity to reduce the maternal and neonatal mortality and morbidity drastically. BPCR encourages skilled care for all births and buoy up decision making before the onset of labour(11).

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In India, many initiatives are being undertaken under the National rural health mission to guarantee access to skilled care at birth and emergency obstetric care for complications which includes financial benefits for availing obstetric services. Nevertheless, optimum utilization of such services comes from demand by the women and the community. Delays in seeking, reaching, obtaining appropriate care are crucial factors when it comes to maternal mortality(12). Even though Kerala is known to own many accolades in health services and has a 100% in health care utilization in antenatal services in the urban area yet tribal areas may be untouched in this regard so this topic remains relevant in such terrains of the state(8). This has been studied in other tribal areas of Kerala but there is paucity in studies on birth preparedness and complication readiness in this particular tribal area hence decided to go with the study with the objective to assess birth preparedness and complication readiness among antenatal women in a tribal area in central zone of Kerala.

II. Methodology

a) Study Area and Period

This study was conducted among tribal population of central zone, Kerala. Various hamlets were visited for data collection during the period from January to June 2019 including study subjects of all the tribal sections of that area.

b) Study Design and Data Collection

This is a community based descriptive cross sectional study among tribal antenatal women including both primi as well as multipara women. Mentally ill and seriously ill pregnant women were excluded from the data collection. Sample size was calculated to be 53.8from an Ethiopian study by Hiluf et al(4) and 60 women were interviewed for the study based on 95% confidence level, 80% power and consecutive sampling.

House to house survey was conducted in hamlets. Data was collected using interview schedule using a standard questionnaire on birth preparedness and complication readiness which was translated to local language (Malayalam) before administering to the subjects. Socio-demographic details of the women, details on current pregnancy and last pregnancy were included and details on abortions were included in data collection. Details on who is the decision maker for the antenatal check up, choice of health facility for delivery, details of complications faced during pregnancy were the few areas touched upon in the questionnaire. Data was entered in excel sheet and analysed by Statistical Package for Social Sciences (SPSS) version 23.

III. Results

a) Respondents' and their Husbands' Characteristics

A total of 60 antenatal women were enrolled into the study. Questionnaire included age, occupation and education status of the women and their husbands'. Mean age of women was 24.9± 4.0 yrs, husbands' was 29.5±4.9 and mean age of women at marriage was 20.5± 3.3 yrs. Age of the women interviewed spanned from 18yrs to 36yrs and 29(48.33%) women belonged to the age group of 18-24yrs. 40(66.67%) of the husbands' belonged to the age group of 20-30yrs. (Table 1)

Table 1: Age characteristics of the study population (N=60)

AGE OF WOMEN-Mean ±SD = 24.917 ± 4.047		
Range	Frequency	Percentage (%)
18-24	29	48.33
25-29	20	33.34
30-36	11	18.34
AGE OF HUSBAND-Mean ±SD = 29.5 ± 4.904		
20-30	40	66.67
31-40	19	31.73
41-50	1	1.6
AGE OF WOMEN AT MARRIAGE-Mean ±SD = 20.517 ± 3.265		
14-20	39	65
21-25	14	23.34
26-30	17	11.66

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Table 2: Details on education and occupation of women and their husbands' (N=60)

EDUCATION	WOMEN (%)	HUSBANDS (%)
Illiterate	6(10)	10(16.68)
Primary school	9(15)	6(10)
High school	11(18.33)	19(31.66)
Higher secondary	22(36.67)	16(26.66)
Graduate and above	12(20)	9(15)
OCCUPATION	WOMEN (%)	HUSBANDS (%)
Not working	45(75)	18(30)
Skilled	0	3(5)
Unskilled	9(15)	33(55)
Professional	6(10)	6(10)

Among women 22(36.67%) of them had secondary education and 45(75%) of them were unemployed. Regarding men, 19(31.66%) of them were having only upto high school education and 33(55%) of them were unskilled workers. (Table 2)A casual observation can be inferred from the above table is that men were less educated than women but more men were employed than women. Regarding the type of family of women, 27(45.0%) of them were living in joint families and 15(25.0%) of them lived in nuclear families. Regarding family income, 31(51.67%) of the women lived in families with less than Rs. 1000 as monthly income.

There were 26(43.33%) primi among the study subjects and 34(56.67%) of them were multiparous women. Out of 34 women, 2(5.88%) women underwent caesarean section and 32(94.12%) underwent normal delivery in the previous pregnancy. Out of 34 women, only 2(5.88%) women had problem during delivery (bleeding and prolonged labour).

b) Details on Previous Pregnancy

Table 3: Details on previous pregnancy (N=34)

Variable	Frequency	Percentage
PLACE OF BIRTH OF LAST CHILD		
Husband's home	2	5.88
Respondent's home	6	17.65
Govt. Health centre	1	2.95
Govt. Hospital	21	61.76
Private hospital	4	11.76
PRIOR TO DELIVERY, ARRANGEMENTS MADE WERE:		
Arranged skilled provider	2	5.88
Money	2	5.88
Transportation	1	2.95
Blood donor	0	0
None	29	85.29
FINAL DECISION OF BIRTH PLACE WAS MADE BY:		
Health professional	7	20.5
Husband	13	38.23
Mother in law	14	41.27

Concerning place of birth of last child, 21(61.76%) of the women chose to deliver in government hospital and 8(23.53%) of them delivered in homes. BPCR advocates the importance of arrangements on identifying skilled provider, money, transportation, blood donor prior delivery. However, no arrangements were made by 29(85.29%) of the women among the study subjects. One of the major decisions of where to deliver was made by mother in laws for 14(41.27%) of women for the delivery of their last child.

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Bus was the sorted mode of transportation for reaching the health facility for delivery by 12(46.15%) of the women who delivered in health facility, 8(23.53%) of the women who delivered at home were on foot to their respective homes. Mothers and mother in laws were the ones who assisted during the home deliveries.

c) Details of Present Pregnancy

Table 4: Details of present pregnancy (N=60)

Variable	frequency	Percentage
HEATH CARE WORKER VISITED HOUSE OF STUDY SUBJECTS (N=60)		
Yes	41	68.33
No	19	31.67
DID THEY MENTION ABOUT DANGER SIGNS		
Yes	5	8.33
No	55	91.67
ARRANGEMENTS MADE FOR CURRENT PREGNANCY		
Money	2	3.34
None	58	96.66
PLANNED TO DELIVER THE BABY IN:		
Govt. Hospital	54	90.00
Govt. Health centre	1	1.66
Private hospital	5	8.34
WHO MAKES FINAL DECISION		
Health professional	10	16.66
Husband	31	51.67
In laws	13	21.67
Respondent's parents	6	10.00

Regarding present pregnancy, awareness on danger signs was not present in 55(91.67%) of the women. No arrangements were made by 58(96.66%) of the women for meeting their requirements for the approaching delivery. Choice of place of birth for the forthcoming delivery was government hospital by 54(90%) of the women and such a decision was made by husband for 31(51.67%) women.

IV. Discussion

Preparing for birth and anticipating potential complications has been identified worldwide as a country level key strategy and intervention for ensuring birth in the presence of a skilled attendant and improving health of the women and the newborn(13). Complete BPCR is positively associated with finding a skilled attendant for birth(13). Indicators like percentage of the women who knew about danger signs of pregnancy, percentage of women who availed ANC in 1st trimester by a skilled provider, percentage of women who identified skilled attendant for delivery, percentage of women who arranged money and mode of transportation for accessing health facility (5).

In this study population, 48.33% of women belonged to the age group of 18-24years but in a study conducted in Farta, Ethiopia by Limenih et al 64.9% women belonged to 20-34 years(14). Mean age group of the women was 24.917 ± 4.047 years and a study conducted in Telangana by Kamineni V et al mean age group of women was 25.2 ± 4 years(15), also similar to study done in Madhya Pradesh by Deoki Nandan was 24.08+ 3.872(5). Fewer women around 18.34% belong to age group of 30-36 years. 60% of women had their age at marriage around 14-20 years likely to be in line with a characteristic of the study site where the custom is to marry off women earlier in their age. Mean age at marriage of the women was 20.517 ± 3.265 years in this study which is more than the mean age at marriage in a study done Madhya Pradesh by Deoki Nandan which was 17.21±1.925 years(5). Mean age of husbands in this study was 29.5 ± 4.9years but in study carried out in Oromia region Ethiopia by Gize et al was 36.6 ± 7 years(16).

On looking into the education status of the women of our study, 10% women are illiterate which is more than 1.3% of women in a study done in Tanzania by Mwilike et al (17) and lesser than a study conducted in Tehulederie, Ethiopia by Endeshaw et al(18) which was 68.6%. The difference may be due to the characteristic of the community we took for study. In our study population, 15% women had primary education compared to a study done in Farta, Ethiopia by Limenih et al it was 23.8% (14). Around 20% of women had graduate degree holders, compared to 37.1% of women in a Thailand study done by Kiataphiwasu et al(19) and

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8.3% women from a Tanzania study done by Mwilike et al(17). The dissimilarity between Tanzania and our study may be due to increased awareness of the importance of education in a tribal community

Regarding working status of the women of our study, 75% of them are not employed and is similar to a study conducted in Haryana by Sharma et al was 74.5% of unemployed women(20). This similarity may be because in any community, women going for work can be frowned upon in our study there were 25% of the women employed in various fields and on comparing the employment status in a Chamwino study, Tanzania it was 17.3%; which is comparatively low. Education and occupation of women can be a indispensible in deciding on where to deliver and make prior arrangements. Considering the education status of husbands, in this study, illiterate men were around 16.68% compared to an Oromia study, Ethiopia it was 13.2%. In this study, 20.7% of men had primary school education and 15% of men had a graduate degree and compared to Oromia study it was 20.7% of men with primary school education and 40.3% of men with a graduate degree(16). Men's' education is vital enough as they are the ones who need to bolster the women in pregnancy and delivery.

In this study we had 43.33% of primi and 56.67% of multigravida women which can be compared to 22% of primi and 78% of multigravida women in a Tanzania study done by Moshi Id et al (21). This disparity may be due to a limitation of this study in having less sample size compared to the study taken for comparison for the above statement. Also regarding delivery mode in last pregnancy, in our study there were 5.88% of women underwent caesarean section and 94.12% of women had undergone normal delivery and it is similar to 2.4% of women with caesarean section and 97.6% of women undergone normal delivery in the study done by Moshi Id et al (21). On discussing about the place of delivery of last birth, we have 76.47% women who delivered in a hospital set up and 23.53% women who delivered in homes, this can be contrasted with and Ethiopian study where in there were 90.8% women who delivered in homes and only 9.2% women delivered in hospital set ups (22). This polarity can be due to availability of health facilities and the eagerness of the community to seek care in a health facility more. Certain people go against the wave and cling on to carry forward traditional customs and hence the presence of home delivery statistics in such studies.

One of the main focuses of BPCR is the prior arrangement of necessary components like identifying skilled provider, money and mode of transportation. Concerning the last birth, in our study, prior arrangements were not made by 85.29% and can be owed to less regard or perception to birth preparedness and complication readiness. Bus was the most commonly used mode of transportation to reach health facility and can be attributed to use of a cheaper mode of transportation. For the last birth, decision maker concerning place of birth was mother in laws in most of the women.

Another cornerstone of BPCR concept is the knowledge of antenatal women on danger signs during pregnancy and delivery. Here in this study, unfortunately 91.67% women did not know about any danger signs, this can be compared to 68.7% women in Chamwino study done by Bintabara et al (23). This high value of women not knowing any danger signs shows lack of understanding of pregnancy and birth and this can result in less readiness towards complication.

Most commonly reported danger sign mentioned by 8.33% of women was severe bleeding but in a study conducted by J Pervin et al in Bangladesh it was pain in lower abdomen which was mentioned by 42% of women (24). Although in a study done in Rwanda by P. Smeele et al it was severe vaginal bleeding stated by 61.1% of women (25). Difference in signs stated by women may be in accordance with the level of information they received from health care workers. 68.33% of women had health care workers visiting their house during pregnancy; this may be due to difficult to reach terrain in most part of tribal areas. 96.66% of women did not make any prior arrangements to the delivery like arranging money, identifying skilled attendant, transportation mode. In a study done in Cameroon by Ijang et al, 89.35 of women arranged for funds prior but in our study only 3.34% of women arranged for funds and this low value can be attributed to the free health services available to tribal population (26). No women of our study arranged potential blood donors and is almost similar to a study done in Wolaita, Ethiopia which was 1.6% of women who arranged blood donors (27).

The results of this study suggest that women are less prepared for birth and to face complications if any to happen. The women in this study were selected from hamlets which were moderately accessible. This can be considered as a limitation of this study. This was the first of this kind of study in this particular area. Information on BPCR was self reported and written documents were not available and hence there can be a possibility of recall bias regarding details of previous pregnancy. Although, the rising motivation to depend on institution for deliveries can be ascribed to the meritorious efforts of the health facilities in the study area.

V. Conclusion

The perception on birth preparedness and complication readiness was inadequate among the study subjects. Almost half of the women belonged to the age group of 18-24 years. Among the study

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population, most of the women have completed upto higher secondary education and three- fourth of the women are unemployed. Almost half of the women are multiparous and of them a very few had caesarean. Around three quarters of the women had their previous delivery in hospital facility. Most of the women had not arranged money, transportation, blood donor, skilled providers prior to delivery. For the present pregnancy, almost 100% of the women had not arranged anything prior to delivery. Danger signs of pregnancy were not known by most of the women.

VI. Recommendations

Effective behaviour change communication activities may be initiated for better awareness on birth preparedness from adolescent age. Each antenatal visits may be utilized to facilitate the women in preparation for birth and in anticipating complications that may befall. Healthcare workers at the grass root level should be encouraged to involve in women and/or family members while explaining birth preparedness and complication readiness with a special emphasis on older (> 35 years) and uneducated women in order to improve the practice in the study area (27). A qualitative research on the perceptions and beliefs of the women regarding birth preparedness and complication readiness can give more perception into the women and their life.

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