

Knowledge and Practice of Birth Preparedness among Tribal Women in Sukma District of Chhattisgarh, India

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Abstract

Background: In developing countries, complications during pregnancy and childbirth are still a leading cause of maternal morbidity and mortality. Birth preparedness promotes maternal healthcare service utilization to ensure safe motherhood by reducing the delay in deciding to seek care, reaching the health facility and receiving care.

Objective: To assess knowledge and practice of birth preparedness among tribal women in Sukma district, Chhattisgarh.

Methods: Cross sectional study was conducted in month of May-June 2013. 146 respondents were interviewed using interview schedule in twenty villages out of fifty-two village's selected using simple random sampling method. Data entry and analysis was done in SPSS version 20. Level of significance was fixed at 5%.

Results: Out of the total 146 respondents, 49.3% were pregnant and 50.7% were recently delivered women. Majority of respondents (82.9%) knew about antenatal care checkup and 91% had received any antenatal care services. 21.1% had knowledge of at least three danger signs. Those respondents who had knowledge of five or more birth preparedness element were categorized as "well birth prepared". Less than one third (29.5%) of respondents were well birth prepared. Knowledge of place of birth and distance of PHC to house were major determinant for practice of birth preparedness.

Conclusions: Association of husband education and birth preparedness was an important finding that provides way to involve men in planning for birth; can guide and support the women during pregnancy and childbirth. There is a need to train traditional healer to detect signs and symptom of complication and manage complication. Providing the women exposure to health services through regular antenatal care visits and examination, will provide a platform for communication and information exchange between tribal women and skilled attendant, which will improve knowledge and practice of birth preparedness.

Keywords: Birth preparedness, conflict affected district, tribal, maternal health, antenatal care

I. Introduction

As per World Health Organization, maternal health refers to the health of women during pregnancy, childbirth and the postpartum period. While motherhood is positive experience and expresses normal physiological state, too many women suffers during this phase from morbidity and mortality. Every pregnancy is associated with certain risk to life and health of mother and child [1]. In developing countries, complications during pregnancy and childbirth are a leading cause of death and disability among women in reproductive age group.

Maternal mortality is a global burden, about 287,000 women died in 2010 due to pregnancy and childbirth related complications [2]. In India, Maternal Mortality Ratio is 212 per 100,000 live births [3]. Morbidities related to pregnancy are diverse like fever, anemia, incontinence, weakness, depression which goes uncounted. Most maternal death occurs during delivery due to unpreparedness for childbirth and managing complications, which results in delivery by the mother itself or untrained attendant. These maternal deaths are unjust and avoidable if preventive measures are taken on time like ensuring antenatal care to all mothers, delivery by skilled birth attendant and timely referral to hospital. As in most rural and tribal areas, delivery takes place at home, far from emergency obstetric services or without access to skilled attendant, there is more risk associated with mother and child life [4].

Pregnancy and giving birth to a child are normal physiological process, but the circumstances both internal and external, in which the child is conceived and born, affect the life of mother and child. Every pregnancy is associated with certain amount of unpredictability of risk of complication. Socio-cultural beliefs and lack of awareness in mothers and family members on how to recognize danger signs and symptoms, where to go when complication occurs, results in delay in seeking care and unprepared families waste time in recognizing problem, getting organized, getting money, finding transport and reaching the appropriate referral

facility [5]. Birth preparedness is a strategy to promote utilization of maternal healthcare services and to ensure safe motherhood. Birth preparedness concept is based on the theory that preparing for childbirth and being ready to deal with complications reduces the delays in obtaining timely care and addressing the three delays of deciding to seek care, reaching health facility and receiving care [6].

II. Materials And Methods

Study design

A cross sectional, descriptive study was conducted in the Sukma block of Sukma district of Chhattisgarh during May – June 2013.

Study area

Sukma district is located in the southern most part of Bastar region of Chhattisgarh. Sukma district was formed out of Dantewada district on 1st January, 2012 for administrative purpose and has 3 blocks – Sukma, Kanta and Chhindgarh. It shares the boundaries with district Dantewada in north; district Bijapur in west; state of Andhra Pradesh in south state of Odisha in east. The district is affected by left wing extremism/ Maoist affected. Most of the part of the district is under forest cover.

Study participants

Study population comprised of all the pregnant women and recently delivered women who had delivered a child 12 months prior to the study period in the Sukma block, district Sukma, Chhattisgarh.

Sample size and sampling procedure

A sample size of 146 respondents was studied. Sukma block has 52 villages. To study the representative sample, 20 villages were selected by simple random sampling method using chit system. The pregnant women and recently delivered women were selected through simple random sampling in selected villages.

Study method

Face to face interviews were carried by the researcher. The purpose and nature of the study was explained to the participants and informed consent was taken before conducting the interviews. Time taken for each interview varied from 15 to 25 minutes. Semi structured interview schedule which comprises socio economic, demographic and household information; maternal health status; knowledge and practice of birth preparedness and its components was used for data collection.

Data analysis plan

Data was entered and analyzed using Statistical Package for Social Sciences (SPSS) software version 20. Inconsistencies were detected and corrected reviewing the primary data collected. For statistical analysis, chi square test, t test and one way ANOVA was used. Level of significance set at 1%, 5% and 10%.

For this study, birth preparedness is operationalised as women preparation for birth through receiving antenatal care, identifying skilled attendant, identifying place of birth, had knowledge of danger sign, knowledge of expected date of delivery, saves money, identification of transport and identification of blood donor and knowledge of use of clean blade, cloth and thread in home delivery.

III. Results

Socio-economic and demographic profile

Out of the total 146 respondents, 49.3% were currently pregnant and 50.7% were recently delivered women. Majority of respondents (91.1%) had received no education; only 5% of respondents had completed secondary education. Occupation as farming was stated by 89.3%. Respondents had not revealed their income. Only 9% of respondents had enrolled in Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). The mean age of respondents was 24 years with standard deviation of 5.4 years. The mean age gap between husband and wife was 3.1 years. More than half of respondents (51.4%) were pregnant for first time or had delivered their first child and 48% of respondents had two or more child. The mean age at first birth was 20.2 years with standard deviation of 3 years. Majority of respondents (46.6%) were in birth order of two to three. Of those currently pregnant, majority of respondents (48.6%) were in third trimester, 45.8% were in second trimester and 5.6% were in first trimester. Of those recently delivered respondents, 60.8% had child up to 6 months and 34.8% had child in 6-12 months of age.

Antenatal care services during pregnancy

Majority of respondents (82.9%) knew about antenatal care checkup and 91% had received any antenatal care services. More than half of respondents (56.8%) had registered their pregnancy status in health facility. Antenatal care services were analyzed for recently delivered respondents (n=74), nearly 90% of respondents had their first ANC visit in the fourth month of pregnancy. Only 5% had received full antenatal care that comprised of at least three ANC visits, two or more TT injection and minimum 90 IFA tablets. Only 9% of respondents had received third ANC visit.

Knowledge and practice of birth preparedness

Around 43% of currently pregnant respondents and 46% of recently delivered respondents had heard of birth preparedness. For knowledge of things a woman can do to prepare for birth at home, less than one third of the respondents (27.8%) among currently pregnant and 40% of recently delivered respondents had knowledge of clean cloth and clean blade. Only 11% of the currently pregnant respondents and 15% of the recently delivered respondents had knowledge about arrangement of clean thread for tying the umbilical cord.

Knowledge of danger signs during pregnancy and child birth is the most significant part of antenatal care and birth preparedness. Knowledge of danger signs during pregnancy, childbirth and post partum period was reported by 30%, 9% and 4% of respondents respectively. Paleness of face and hands during pregnancy and childbirth was frequently reported. Only 21.2% had knowledge of at least three danger signs.

Knowledge of expected date of delivery, knowledge to save money for emergency need, identified place of birth, arrangement for transport, identified skilled attendant, identified birth companion were 31.9%, 31.9%, 34.7%, 26.4%, 13.9% and 77.8% among pregnant respondents and 37.8%, 14.9%, 32.4%, 16.2%, 14.9% and 68.9% among recently delivered respondents respectively. Only 2.7% of the recently delivered respondents had identified blood donor.

The complete knowledge of birth preparedness was computed by adding the birth preparedness components studied to assess the knowledge of birth preparedness. Knowledge of each birth preparedness component was coded as yes =1, if the respondent had knowledge and no knowledge was coded as 0. Total score for knowledge of birth preparedness was eight excluding the knowledge of blood donor which was reported by two respondents only. Those respondents who had knowledge of five or more birth preparedness element were categorized as "well birth prepared". Less than one third (29.5%) of respondents were well birth prepared, having knowledge of five or more birth preparedness elements.

The mean of knowledge of birth preparedness among those respondents whose husband were educated primary and above level, is 3.21 while among those whose husband were not educated, the mean is 4.62. Significant difference was found among the means of two groups for knowledge of birth preparedness. ($p = 0.000$). The mean of knowledge of birth preparedness among respondents who had skilled attendant in last birth was 6.71 while among those who did not had skilled attendant at last birth was 2.94. There is significant difference among the means of two groups ($p = 0.000$).

The mean of knowledge of birth preparedness among those respondents whose primary contact for health services was health facility is 5.19 while among respondents who had traditional healer as primary contact for health services, the mean is 3.20 ($p = 0.000$). The mean of knowledge among respondents who had stated time to reach PHC upto 30 minutes from their house is 4.43 while among those who had stated time more than 30 minutes to reach PHC, the mean is 3.04. ($p = 0.000$). The mean of knowledge of birth preparedness among respondents who had 2 or more ANC visit is 3.76 while among those who had not received any ANC visit, the mean is 1.92 ($p = 0.009$). the mean knowledge among those who had received antenatal care from health facility, the mean is 4.60; among those who had received antenatal care from village health clinic/ mobile medical van, the mean is 3.22 while among those who had not received ANC visit, the mean is 2.00 ($p = 0.000$).

Only 6% of those respondents who had past history of child death had practiced birth preparedness compared to 24% of those who had no such history ($p=0.073$). Almost 43% of those respondents who had health facility as primary contact for health services had practiced birth preparedness compared to 18% of those having traditional healer as primary contact for health services ($p=0.012$). Only 2% of those respondents who stated distance of PHC from house more than 10 km, have practiced birth preparedness compared to 35% of those who stated distance of PHC within 10 km range from their house ($p=0.000$). About 32% of those respondents who had knowledge of place of birth had practiced birth preparedness compared to 9% of those who had no knowledge about it ($p=0.001$).

Logistic regression for knowledge of identifying place of birth revealed compared to those respondents who had received counseling from mitanin on identifying the place of birth either home or health facility, those respondents who had not received counseling are 89.5% less likely to have knowledge to identify place of birth (OR: 0.105, CI: 0.038 – 0.287, p value: 0.000).

Logistic regression for having husband as birth companion revealed compared to respondents who have knowledge of danger signs, those who do not have knowledge were 76.9% less likely to have husband as birth companion (OR: 0.231, CI: 0.084 – 0.633, p value: 0.004).

Logistic regression for practice of birth preparedness found pregnancy status- currently pregnant or recently delivered, primary contact for health service, knowledge of place of birth and distance from PHC were found to significant determinant of practice of birth preparedness. Compared to currently pregnant respondents, respondents who have recently delivered a child were 8.8 times more likely to practice birth preparedness (OR: 8.855; CI: 1.632 – 48.046, p value: 0.011). Compared to those who stated distance to PHC from house within 10 kilometers, those who stated distance more than 10 kilometers are 97% less likely to practice birth preparedness (OR: 0.033; CI: 0.003 – 0.333, p value: 0.004). Compared to those respondents who stated traditional healer as primary contact for health services, those respondents who stated health facility as primary contact were 5.9 times more likely to practice birth preparedness (OR: 5.952, CI: 0.985 – 35.976, p value: 0.004). Compared to those respondents who have knowledge of place of birth, those respondents who do not have knowledge are 72.7% less likely to practice birth preparedness (OR: 0.273, CI: 0.075 – 0.990, p value: 0.048).

IV. Discussion And Conclusion

This cross sectional study conducted in Sukma district which is one of the most backward districts and left wing extremist affected assessed knowledge of birth preparedness among pregnant and recently delivered mothers. This study looked into the following birth preparedness elements- receiving routine antenatal care; identifying skilled attendant; identifying place of birth; preparation of essential items- clean cloth, blade for delivery at home; knowledge of danger sign; knowledge of expected date of delivery; saving money for emergency; arrangement for transportation and identification of blood donor.

Compared to the District Level Health Survey (DLHS-3) Chhattisgarh data [7], a smaller percentage of respondents had received full ANC coverage in this study. Also, the source of ANC and month of first ANC visit are associated with total number of ANC visits received. Similar association was found in the earlier study conducted by Pervin et al. in Bangladesh [8]. This study found low level of knowledge of danger signs; similar finding was revealed in studies conducted by Mukhopadhyay et al.[9]; Moran et al.[10]; Hailuf and Fantahum [11]; Kushwah et al. [12]; Hailu et al.[13]; Urassa et al.[14]; Hailu and Berhe [15]; Kabakyenga et al. [16].

Knowledge of at least three danger signs during pregnancy, childbirth and post partum period was found to be significantly associated with education of husband, ANC visits, month of first ANC visit, primary contact of health provider and skilled attendant at last birth. The study found that those who do not have knowledge of danger signs are 77% less likely to have husband as birth companion. Linking this to the finding that in most households, the decision making lies with husband, this decreases the probability of practice of birth preparedness.

About one third of the respondents had knowledge of identifying the place of birth that is higher, compared to the study conducted by Hiluf and Fantahum [11], who reported one fourth of women to identify and mentioned place of delivery. Another study conducted in rural setting in Ethiopia by Hailu et al. [13] reported less than 10% of the women had identified health facility of delivery which is less compared to the study finding; they also reported majority of women intended to deliver at home than health facility compared to this study which finds majority had identified hospital as place of delivery. The study conducted in West Bengal by Mukhopadhyay et al. [9] found less than one fifth of women planned for institutional delivery as compared to this study. Identification of place of birth had significant association with distance and time taken to reach PHC, this reflects that facility based health services are not accessible to the pregnant women, which may have resulted in choosing home as place of delivery over PHC or hospital.

This study found that more than three fourth of the respondents had knowledge of expected date of delivery. This increases the probability to reach the health facility on time or prepare for home deliveries. About one fourth of the respondents had knowledge about saving money for emergency care. The study conducted in Burkina Faso by Moran et al. [10] reported more than four fifth of recently delivered women and three fifth of pregnant women planned for saving money, compared with this study findings which states less than one fifth among recently delivered and around one third among pregnant respondents have knowledge to save money respectively. A study in rural setting in Rewa, Madhya Pradesh by Kushwah et al. [12] found less than half of women to plan for saving money, which is higher compared to this study finding. This may be explained by that the study setting of this study being tribal, most of them were not in formal employment, they live on forest based products and subsistence agriculture; as income is not earned, saving money was difficult.

This study reveals slightly more than ten percent of the respondents to had knowledge of skilled attendant at birth. This was low compared to the study conducted in Indore slums by Agarwal et al. [17] which reported nearly three fourth of women to identify trained birth attendant. This study found only 1% of the respondents had knowledge of blood donor which is less than other studies which reported less than one tenth of

the women had identified blood donor (Hailu et al. [13]; Ekabua et al. [18]). Less than one tenth of the respondents reported that community helps them financially for preparation for birth.

Association of husband education and birth preparedness was an important finding that provides way to involve men in planning for birth; can guide and support the women during pregnancy and childbirth. Both men and women should be provided counseling and motivated through messages showing positive effect of skilled care. There is a need to train traditional healer to detect signs and symptom of complication and manage complication. Providing the women exposure to health services through regular antenatal care visits and examination, will provide a platform for communication and information exchange between tribal women and skilled attendant, which will improve knowledge and practice of birth preparedness. Identification of transport was another issue that required attention as distance was significantly associated with the practice of birth preparedness.

Conflict Of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

Author's Contributions

The authors participated in the design of the study and performed data collection. Authors contributed equally in analysis and extensive discussion of the research.

Acknowledgement

The authors thank mitanins and respondents for their support and participation during data collection and sincere thanks to School of Health Systems Studies, Tata Institute of Social Sciences, Mumbai for giving opportunity to learn and research in this area.

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Table 1: Knowledge of birth preparedness elements with Socio-economic and health service factor.

| Characteristics | Knowledge of ANC | Identified skilled attendant | Identified place of birth | Identified at least three danger signs | Knows Expected date of delivery | Identified transport | Saves money | Knows birth companion | Total |
|--|-------------------------------|-------------------------------|------------------------------|--|---------------------------------|-------------------------------|-----------------------------|------------------------------|-------|
| | Number(%) | Number(%) | Number(%) | Number(%) | Number(%) | Number(%) | Number(%) | Number(%) | |
| Education of husband | $\chi^2=1.172$ p=0.279 | $\chi^2=1.169$ p=0.280 | $\chi^2=2.409$ p=0.121 | $\chi^2=6.033$ p=0.014** | $\chi^2=4.490$ p=0.145 | $\chi^2=7.870$ p=0.005*** | $\chi^2=4.344$ p=0.037** | $\chi^2=0.008$ p=0.026** | |
| No education | 95 (81.2) | 15 (12.8) | 62 (53.0) | 20 (17.1) | 36 (30.8) | 43 (36.8) | 23 (19.7) | 81 (69.2) | 117 |
| Primary & above | 26 (89.7) | 6 (20.7) | 20 (69.0) | 11 (37.9) | 15 (51.7) | 19 (65.5) | 11 (37.9) | 26 (89.7) | 29 |
| Birth order | $\chi^2=4.222$ p=0.040** | $\chi^2=0.351$ p=0.554 | $\chi^2=0.001$ p=0.977 | $\chi^2=0.475$ p=0.491 | $\chi^2=0.859$ p=0.354 | $\chi^2=1.767$ p=0.184 | $\chi^2=0.460$ p=0.498 | $\chi^2=8.408$ p=0.004*** | |
| One | 37 (74.0) | 6 (12.0) | 28 (56.0) | 9 (18.0) | 20 (40.0) | 25 (50.0) | 10 (20.0) | 44 (88.0) | 50 |
| Two or above | 84 (87.5) | 15 (15.6) | 34 (36.2) | 22 (22.9) | 31 (32.3) | 37 (38.5) | 24 (25.0) | 63 (65.6) | 96 |
| Number of ANC visits | $\chi^2=8.585$ p=0.014** | Ftest=8.309 p=0.012** | $\chi^2=1.009$ p=0.619 | $\chi^2=9.415$ p=0.009*** | $\chi^2=2.309$ p=0.361 | $\chi^2=4.705$ p=0.095* | Ftest=4.739 p=0.09* | $\chi^2=3.057$ p=0.217 | |
| 0 | 7 (53.8) | 0 (0.0) | 6 (46.2) | 0 (0.0) | 3 (23.1) | 2 (15.4) | 0 (0.0) | 7 (53.8) | 13 |
| One | 49 (84.5) | 4 (6.9) | 35 (60.3) | 8 (13.8) | 18 (31.0) | 28 (48.3) | 15 (25.9) | 45 (77.6) | 58 |
| Two or more | 65 (86.7) | 17 (22.7) | 41 (54.7) | 23 (30.7) | 30 (40.0) | 32 (42.7) | 19 (25.3) | 55 (73.3) | 75 |
| Source of ANC | $\chi^2=21.504$ p=0.000*** | $\chi^2=16.678$ p=0.000*** | $\chi^2=14.910$ p=0.002 | $\chi^2=18.911$ p=0.000*** | $\chi^2=15.222$ p=0.002*** | $\chi^2=17.699$ p=0.000*** | Ftest=13.04 p=0.002*** | $\chi^2=5.585$ p=0.134 | |
| No visit | 6 (50.0) | 0 (0.0) | 6 (50.0) | 0 (0.0) | 3 (25.0) | 3 (16.7) | 0 (0.0) | 7 (58.3) | 12 |
| PHC | 49 (98.0) | 16 (32.0) | 32 (64.0) | 21 (42.0) | 27 (54.0) | 29 (58.0) | 18 (36.0) | 38 (76.0) | 50 |
| Health clinic | 51 (75.0) | 4 (5.9) | 42 (61.8) | 9 (13.2) | 20 (29.4) | 30 (44.1) | 16 (23.5) | 47 (69.1) | 68 |
| Others | 15 (93.8) | 1 (6.2) | 2 (12.5) | 1 (6.2) | 1 (6.2) | 1 (6.2) | 0 (0.0) | 15 (93.8) | 16 |
| Primary contact for health services | $\chi^2=2.641$ p=0.127 | $\chi^2=1.770$ p=0.183 | $\chi^2=3.995$ p=0.046** | $\chi^2=6.858$ p=0.009*** | $\chi^2=10.868$ p=0.001*** | $\chi^2=14.870$ p=0.000*** | $\chi^2=5.252$ p=0.022** | Ftest=3.702 p=0.064 | |
| Traditional healer | 101 (80.8) | 16 (12.8) | 66 (52.8) | 22 (17.6) | 37 (29.6) | 45 (36.0) | 25 (20.0) | 88 (70.4) | 125 |
| Health facility | 20 (95.2) | 5 (23.8) | 16 (76.2) | 9 (42.9) | 14 (66.7) | 17 (81.0) | 9 (42.9) | 19 (90.5) | 21 |
| Distance from PHC | $\chi^2=0.036$ p=0.850 | $\chi^2=0.281$ p=0.596 | $\chi^2=7.377$ p=0.007*** | $\chi^2=0.305$ p=0.581 | $\chi^2=4.953$ p=0.026** | $\chi^2=4.824$ p=0.000*** | $\chi^2=0.104$ p=0.744 | $\chi^2=3.280$ p=0.070* | |
| Within 10 km | 75 (82.4) | 12 (13.2) | 59 (64.8) | 18 (19.8) | 38 (41.8) | 45 (49.5) | 22 (24.2) | 62 (68.1) | 91 |
| More than 10 km | 46 (83.6) | 9 (16.4) | 23 (41.8) | 13 (23.6) | 13 (23.6) | 17 (30.9) | 12 (21.8) | 45 (81.8) | 55 |
| Total (N) | 121 | 21 | 82 | 31 | 51 | 62 | 34 | 107 | 146 |

Note: χ^2 = Chi square ; *: Level of significance: p ≤ 0.10; **: p ≤ 0.05; ***: ≤ 0.01