# "BIRTH PREPAREDNESS AND COMPLICATION READINESS AMONG RURAL PREGNANT WOMEN – A COMMUNITY BASED CROSS – SECTIONAL STUDY"

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This is to certify that the Dissertation entitled **"BIRTH PREPAREDNESS AND COMPLICATION READINESS AMONG RURAL PREGNANT WOMEN – A COMMUNITY BASED CROSS – SECTIONAL STUDY"** is a bonafide research work done by **Reg.No.BD0118003.**


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# LIST OF ABBREVIATIONS USED

| S.No. | Abbreviations | Expansion of the abbreviations |
|---|---|---|
| 1 | MMR | Maternal Mortality Ratio |
| 2 | BPCR | Birth Preparedness and Complication Readiness |
| 3 | JSY | JananiSurakshaYojana |
| 4 | ANC | Antenatal Care |
| 5 | ANM | Auxiliary Nurse Midwife |
| 6 | ASHA | Accredited Social Health Activist |
| 7 | AWW | Anganwadi Workers |
| 8 | TBA | Trained Birth Attendant |
| 9 | PHC | Primary Health Centre |
| 10 | RHC | Rural Health Centre |
| 11 | OPD | Out - patient department |
| 12 | BP | Blood Pressure |
| 13 | PV | Per vaginal |
| 14 | VHND | Village Health and Nutrition Day |
| 15 | SES | Socio – economic status |
| 16 | NGO | Non – Governmental Organization |
| 17 | JSSK | JananiShishuSurakshaKaryakram |

| | | |
|---|---|---|
| 18 | NAS | National Ambulance Service |
| 19 | RCH | Reproductive and Child Health |
| 20 | RMNCH + A | Reproductive, Maternal, Newborn, Child and Adolescent Health |
| 21 | MCI | Medical Council of India |
| 22 | INC | Indian Nursing Council |
| 23 | SPSS | Statistical Package for the Social Sciences |
| 24 | OR | Odd's ratio |
| 25 | AOR | Adjusted Odd's Ratio |
| 26 | CI | Confidence interval |
| 27 | F | Fischer's exact |
| 28 | r | Pearson's correlation coefficient |
| 29 | $\chi^2$ | Chi - square |

## ABSTRACT

### Introduction:

Globally, approximately 810 women die from preventable causes related to pregnancy and childbirth. Most of the maternal deaths occur during labour, delivery and within 24 hours post – partum. According to a study done by Thaddeus and Maine, the three obstetric delays contributing to maternal mortality are: delay in seeking health care, delay in identifying and reaching the medical facility and delay in receiving adequate and appropriate treatment. Majority of these deaths are preventable through effective, affordable, timely and quality services. Birth Preparedness and Complication Readiness (BPCR) is a safe motherhood approach to improve the use and effectiveness of key maternal and newborn health services, based on the fact that preparing for birth and being ready for complications reduces all the phases of delays in receiving these services. The present study was planned with an objective to assess the Knowledge, Attitude and Perceptions and personal experience with current pregnancy regarding BPCR among rural antenatal women in the field practice area of Kinaye, Primary Health Centre, Belagavi.

### Methodology:

A community based cross – sectional study was conducted among 400 pregnant women who had completed 28 weeks of gestational age in the rural field practice area of Primary Health Centre, Kinaye under the administration of Department of Community Medicine, J. N. Medical College, KAHER, Belagavi, Karnataka. The study was conducted for the period of one year from 1st January 2019 to 31st December 2019. Population proportionate sampling was done to select the number of participants from each sub - centre of the rural field practice area, Kinaye.

Pre – validated and tested questionnaire regarding knowledge, attitude and perception about BPCR and practice of BPCR from Safe Motherhood Population – Based Survey Questionnaire on monitoring of BPCR from John Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) was used for the personal interview of the study participants. SPSS 25.0 trial version was used to analyze the data. Frequency and percentages were calculated. Multiple logistic regression was used to find the association between dependent (level of BPCR) and independent (socio – demographic details) variables. Pearson's correlation coefficient was used to find the relationship between knowledge, attitude and practice scores.

**Results:**

The mean age of the pregnant women was 24.3 ± 3.6 years. Among the 400 pregnant women in the study, 158 (39.5 %) were primigravida and 242 (60.5 %) pregnant women were multigravida. Out of the 400 pregnant women, 296 (74.0 %) were well prepared and 104 (26.0 %) were less prepared with respect to BPCR. The BPCR index was 47.1 %. Those who belonged to upper and middle SES (AOR: 1.795, 95 % CI: 1.070 – 3.014, $p = 0.027$), multigravida (AOR: 2.989, 95 % CI: 1.751 – 5.103, $p < 0.001$), those who were at ≥ 34 weeks of gestational age (AOR: 3.098, 95 % CI: 1.717 – 5.588, $p < 0.001$) and those who availed their first antenatal care in their first trimester (AOR: 6.641, 95 % CI: 3.507 – 12.576, $p < 0.001$) were positively associated with level of BPCR. Those who were ≥ 25 years of age (AOR: 2.507, 95 % CI: 1.509 – 4.164, $p< 0.001$) and multigravida (AOR: 2.047, 95 % CI: 1.276 – 3.283, $p = 0.003$) were positively associated with attitude towards BPCR. There was a weak positive correlation between knowledge & attitude ($r = 0.333$), knowledge & practice

(r = 0.321) and attitude & practice (r = 0.333) of the study participants regarding BPCR which were statistically significant ($p < 0.001$) at 0.01 level of significance.

**Conclusion:**

Among the 400 rural pregnant women studied, four out of ten pregnant women had moderate knowledge of BPCR and seven out of ten antenatal women had positive attitude towards BPCR. More than half of the pregnant women had good BPCR practice. Nearly three – fourth of the pregnant women were well prepared for birth.

**Keywords:**BPCR, danger signs, attitude and perceptions, practice, rural pregnant women.

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# INTRODUCTION

**"Giving birth should be your greatest achievement not your greatest fear"**

**– Jane Weideman**

Pregnancy is an important event in every woman's life which needs special attention from the time of conception to the postnatal stage. It is a very sensitive period during which a woman may face unexpected life threatening complications during antenatal, intra partum and postnatal period. This leads to maternal morbidity, mortality and also affects the health of the newborn. Hence, it is necessary that every pregnant woman receives special care and attention from the family, community and the health care system.[1]

Globally, approximately 810 women die from preventable causes related to pregnancy and childbirth. In 2017, about 295,000 women died due to pregnancy and child birth related complications. 94 % of all maternal deaths occur in low and lower middle - income countries.[2] In India, every 20 minutes a mother is dying due to pregnancy or childbirth related cause. Maternal Mortality Ratio of India has been estimated to 122 / 1, 00,000 live births in 2015-17. In 2017, there were 30,000 maternal deaths in India.[3] According to Sample Registration System (SRS) 2016 – 2018 data, the MMR in India is 113 / 1, 00,000 live births. In Karnataka, the Maternal Mortality Ratio (MMR) has been estimated to 92 / 1, 00,000 live births in 2016 – 2018.[4]

Most of the maternal deaths occur during labour, delivery and within 24 hours post – partum.[5] Other complications may exist before pregnancy but are worsened

during pregnancy, if not managed at the appropriate time.[2] One-third of the neonatal deaths occur on the first day of life.[6] Nearly 75 % of all maternal deaths are due to severe bleeding (mostly bleeding after childbirth), infections (usually after childbirth), high blood pressure during pregnancy (pre - eclampsia and eclampsia), complications from delivery and unsafe abortion.[2] Other than medical causes, there are several socio – cultural factors that are interrelated with respect to these deaths.[5] Most of these deaths are preventable through effective, affordable, timely and quality services. Maternal morbidity and mortality could be prevented to a greater extent if women and their families recognize obstetric danger signs and promptly seek health care at the right time.[1]

According to a study done by Thaddeus and Maine, the three obstetric delays contributing to maternal mortality are: delay in seeking health care, delay in identifying and reaching the medical facility and delay in receiving adequate and appropriate treatment.[7] The main factors that prevent women from receiving or seeking care during pregnancy and childbirth are: poverty, distance to facilities, inadequate information, inadequate and poor quality services, cultural beliefs and practices.[2] Delay in responding to the onset of labour and such complications has been one of the major barriers to reducing mortality and morbidity related to childbirth.[8] Lack of advance planning for childbirth and inadequate preparation for rapid action during obstetric complications are the main factors contributing to delay in receiving the appropriate care.[9] Barriers that limit access to quality maternal health services need be identified and addressed at both health system level and community level to improve maternal health.[2]

A safe and healthy childbirth experience is essential for the well – being of mother and the newborn. It is necessary to implement strategies to overcome these problems. Hence, World Health Organization (WHO) has recommended 'Birth Preparedness and Complication Readiness' (BPCR) as a fundamental component of all the antenatal care programs.[8]

BPCR is a safe motherhood approach to improve the use and effectiveness of key maternal and newborn health services, based on the fact that preparing for birth and being ready for complications reduces all the phases of delays in receiving these services. BPCR reduces delay in two ways. Birth Preparedness reduces first two phases of obstetric delays by providing skilled care of all births by motivating people to plan for it and encourages decision making before the onset of labour and thus seek care before the onset of any potential complications during childbirth. Complication Readiness increases awareness of danger signs and thus improves problem recognition and reduces the delay in deciding to seek care.[7]

The key components of Birth Preparedness and Complication Readiness (BPCR) are: To identify a trained birth attendant, identify health facility for emergency, identify mode of transport for delivery or obstetric emergency, save money for future expenses of childbirth, identify compatible blood donor for future emergency needs.[7]

BPCR involves making plans prior to birth to ensure that a pregnant woman is prepared for normal birth and complications and thus builds an enabling environment for maternal and newborn survival.[10] It encourages women, households, and communities in making arrangements like identifying transport, saving money to pay for service fees and transport, finding a companion to be with the women at birth or

during any emergency and identifying blood donor to facilitate rapid decision-making and reduce delays in reaching care when emergency arises.[11] Evidence from a meta – analysis of 14 randomized studies showed that with adequate population coverage, BPCR interventions are effective in reducing maternal and neonatal mortality in low – resource settings.[12] This strategy also improves preventive behavior and knowledge of mothers about danger signs which will further improve the care seeking during obstetric emergencies.[13] Management and treatment of complications at the right time can make the difference between life and death [2].

Most of the previous studies conducted among antenatal women have not assessed the attitude, perceptions, exposure to media and community interventions regarding BPCR. With this background, this study was planned with an aim to include these aspects apart from knowledge and personal experience during current pregnancy regarding BPCR among the pregnant women in the rural field practice area of Kinaye, Primary Health Centre, Belagavi.

# OBJECTIVES

1. To assess the Knowledge, Attitude and Perceptions about Birth Preparedness and Complication Readiness among rural antenatal women.

2. To assess the personal experience with current pregnancy about Birth Preparedness and Complication Readiness.

# REVIEW OF LITERATURE

A facility based cross – sectional study was conducted among 371 pregnant women who attended antenatal clinics in a district hospital in Tumkur, Karnataka in 2015. Mean age group of the study participants was 23.3 ± 3.1 years. 43.0 % were primigravida. 47.2 % of the pregnant women were in the third trimester. 97.3 % had availed their first antenatal care within first trimester. None of the participants were aware of all eight danger signs during pregnancy, labour and within two days of delivery. 104 (28.0 %) mothers did not mention even one danger sign and 31.2 % mothers mentioned at least two danger signs. 91 (25.0 %) pregnant women expected problems related to pregnancy and 55.0 % did not know where to go immediately if any danger sign occurs. 60.0 % had awareness on government cash incentive and 36.4 % were aware of referral transport schemes. 99.5 % of pregnant women had identified a skilled provider for delivery, 28.0 % of them had planned to identify a mode of transport to the place of delivery and 11.4 % had planned to save money for child birth. 60.0 % pregnant women knew about the financial assistance under Janani Suraksha Yojana and 36.4 % knew about the transport assistance under Janani Suraksha Yojana. There was significant association between parity and birth preparedness ($p < 0.01$). 133 (35.8 %) pregnant women were well prepared by fulfilling at least four out of five indicators and 238 (64.2 %) were less prepared.[14]

A cross sectional study was done in Palam, Delhi among 417 antenatal women attendants in 2012 at a Primary Health Centre. It was found that BPCR index was 41.0 %.37.2 % of the antenatal women were in 20 – 24 years, 37.4 % were in 25 – 29 years age group and 7.7 % were between 30 – 34 years. 42.9 % pregnant women in the study had registered themselves in their first trimester, 54.2 % had registered in

second trimester and 2.9 % in third trimester. 32.7 % women were aware about transportation and 37.2 % about financial assistance provided under JSY scheme respectively. 27.8 % knew at least one danger sign of pregnancy, 28 (6.7 %) had knowledge regarding danger signs in labour and 3 (0.7 %) knew about puerperal danger signs. 338 (81.1 %) had identified skilled birth attendant for delivery, 184 (44.1 %) had identified a mode of transportation for delivery and 48.9 % had arranged money to pay for expenses. Knowledge regarding danger signs was acquired among 50 (45.8 %) from elders, among 29 (26.6 %) from doctors, among 11 (10.0 %) through friends and among 18 (16.6 %) through other sources. Those who were educated up to and above middle school (up to middle school AOR: 1.490, 95 % CI: 0.617 - 3.601), (up to senior secondary AOR: 4.262, 95 % CI: 1.982 - 9.167) and (Graduate and above AOR: 9.410, 95 % CI: 4.111 - 21.537) were more aware regarding BPCR ($p < 0.001$).[15]

A facility based cross – sectional study was conducted in 2013 in two randomly selected rural primary health centres of Dakshina Kannada district, Karnataka, among 60 pregnant women of more than 28 weeks gestational age and 124 women who delivered in the previous six months. 108 (58.7 %) were primigravida. 52.7 % were utilizing public health sector for ANC and delivery. 69 (47.9 %) were aware about JSY scheme. 144 (78.3 %) had at least four antenatal visits during their pregnancy. Among 10.3 % of the women, the decision regarding when and where to seek the healthcare during the pregnancy was made by themselves. 147 (79.9 %) had knowledge of at least one danger sign. All the participants had identified the place of delivery (100.0 %). 96 (52.2 %) had saved money, 132 (71.7 %) had identified transport to reach the place of delivery and 167 (90.8 %) had identified a birth companion. 29 (15.8 %) had arranged a blood donor for future needs. 114 (62.0 %)

were informed about BPCR by a doctor / ANM / ASHA. 117 (63.6 %) women had discussed about BPCR with their family members. Optimal BPCR practice was defined as following at least three out of five key components of BPCR. 146 (79.3 %) had optimal BPCR practice. The significant factors of optimal BPCR practice were woman's age > 26 years (AOR = 2.97, 95 % CI: 1.15 – 7.7), economic status of Above Poverty Line (AOR = 4.3, 95 % CI: 1.12 – 16.5) and awareness of minimum six key danger signs of pregnancy, childbirth and postpartum (AOR = 3.98, 95 % CI: 1.4 – 11.1).[16]

A study done in Uttar Dinajpur district of West Bengal in 2011 among 117 pregnant women in their second or third trimester and 238 women who had delivered in the preceding twelve months before the survey showed that BPCR index among pregnant women was 32.1 %. The mean age of the study participants was 23.8 ± 0.2 years. 94 (26.5 %) were teenagers. 65.8 % of pregnant women were not aware of the concept of birth planning. 38 (32.5 %) pregnant women had saved money. 17 (14.5 %) pregnant women had identified delivery hub and 18 (15.4 %) had arranged transport for delivery. 2 (1.7 %) pregnant women had arranged blood donor. 60 (51.3 %) pregnant women had attended first ANC visit in first trimester and 62 (53.0 %) had planned to attend more than four ANC visits. 38 (32.4 %) pregnant women had planned for postnatal care. Among 117 pregnant women, 17 (14.5 %) were aware of at least one key danger sign of pregnancy and 20 (17.1 %) were aware of at least one key danger sign of labour. 15 (12.8 %) were aware of at least one key danger sign of postpartum. 34 (29.1 %) were aware of at least one key danger sign of new born and 66 (56.4 %) were aware of at least one essential newborn care. 75 (64.1 %) pregnant women were aware of Government financial scheme and 43 (36.8 %) were aware of Government transport scheme.[17]

A cross – sectional study was conducted among 600 pregnant women attending the outpatient clinic for the first time at Kamineni Hospital, Hyderabad, in 2012 - 2014. Mean age of the respondents was 25.2 ± 4 years. The study showed that 429 mothers (71.5 %) were birth prepared and 566 mothers (94.3 %) were not ready for any unexpected emergencies during pregnancy. 34 (5.6 %) pregnancies were teenage and 17 (2.8 %) were elderly pregnancies. The mean gestation age at enrolment was 18.7 ± 8 weeks. 504 (84 %) respondents had registered in an antenatal clinic before 12 weeks of gestational age and 462 (77.0 %) were supervised by a qualified doctor. 59 (9.8 %) women did not identify a place of delivery and 102 (17.0 %) had not started saving money. The decision on the place of delivery was made by parents among 261 (43.5 %) participants. On regression analysis, the predictors of birth preparedness were multi parity [OR: 2.2, 95 % CI: 1.4 – 3.1), registration in the antenatal clinic in the first trimester (OR: 3.7, 95 % CI: 2.2–6.1), educational status of women (OR: 1.9, 95 % CI: 1.2–3.0), and pregnancy supervision by a doctor (OR: 5, 95 % CI: 2.8–6.6). 164 women (27.0 %) had not made any arrangements in the event of an emergency, 376 women (63.0 %) were not aware of their blood group, and 531 (89.0 %) did not identify any blood donor in case of any emergency. Respondents with no knowledge of the danger signs in pregnancy, signs of severe conditions in labour, and serious health problems that occur to newborns in the first 7 days of life were 174 (29.0 %), 252 (42.0 %) and 288 (48.0 %) pregnant women respectively. Respondents who had knowledge of at least 3 dangers signs of pregnancy, labour, and severe illness in newborn were 120 (20.0 %), 95 (15.8 %), and 73 (12.0 %) respectively.[18]

A facility‐based cross‐sectional study was conducted in KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi, Karnataka, in 2017 among 384 pregnant women attending antenatal clinic as outpatients. 233 (60.7 %) respondents were primigravida and 191 (49.7 %) were between the age of 15 and 20 years. 262 (68.2 %) pregnant women had knowledge about basic care of newborn immediate after birth. Poor knowledge regarding danger signs during pregnancy , unforeseen health problems during pregnancy that endanger life of women, term birth preparedness and financial assistance through JSY were observed in 285 (74.2 %), 278 (72.4 %), 233 (60.7 %) and 209 (54.4 %) participants respectively. All the pregnant women (100.0 %) had good knowledge of practice regarding receiving antenatal visits. 289 (75.1 %) of pregnant women had identified the birth place before delivery and 236 (61.5 %) had identified blood donor before delivery. The level of knowledge score was categorized into poor level (0 – 4), moderate level (5 – 6), and good level (≥ 7). The level of practice score was categorized into poor level (0 – 5), moderate level (5 – 8), and good level (≥ 9). Based on the grouping the study revealed that 296 (77.1 %) had moderate level of knowledge, 66 (17.2 %) had poor level of knowledge and 22 (5.7 %) had good knowledge regarding BPCR. 291 (75.8 %) respondents had good score of practice and 93 (24.2 %) respondents had moderate score of practices regarding BPCR.[19]

At an urban field practice area of one of the Medical College at Ahmedabad, India, a community-based cross-sectional study was conducted in 2015 - 2016 among 350 antenatal women. The study sample comprised of 48.0 % antenatal women in 21–25 years of age group. 52.0 % of the study participants were primigravida and others were having second or higher order of pregnancy. 46.0 % had one or more live children at the time of the study. Those in their second trimester of pregnancy at the

time of the study were 57.4 %. The study showed that the participants were receiving health and antenatal care - related advice from multiple stake holders such as health professional (58.5 %), community health worker (47.1 %), friends and relatives (30.0 %), and media (9.8 %). 245 (70.0 %) women had received advices related to antenatal care while 65 (18.6 %) had not received any significant advice during their pregnancy from their health care provider. It was found that knowledge regarding danger signs during pregnancy and symptoms of true labour were correctly perceived by 28 (8.0 %) and 33 (9.4 %) participants respectively. There was poor knowledge about danger signs during postpartum period among 72 (20.5 %) women. Practices like prior identification of doctor for new born, if need arise were observed in 57 (16.3 %) women. 184 (52.5 %) participants had practice of saving money for pregnancy - related expenses. Good practices in terms of prior identification of decision taker in case of emergency and place of delivery were found among 309 (88.3 %) and 303 (86.5 %) women respectively. 288 (82.3 %) had good practice of identifying place for emergency referral and 267 (76.2 %) had identified mode of the transportation. The study revealed that 229 (65.4 %) participants had positive knowledge and practices in terms of BPCR. There was statistically significant association between mode of last delivery and current status of BPCR (Cramer's V: 0.58 and $p < 0.001$) followed by age of the participants at the time of marriage (Cramer's V: 0.321 and $p < 0.00$). The other variables which had statistically significant effect on BPCR were level of education (Cramer's V = 0.230, p = 0.002), socioeconomic class (Cramer's V = 0.19, p = 0.012), order of pregnancy (Cramer's V = 0.214, p = 0.001), number of live children (Cramer's V = 0.175, p = 0.005), history of abortion (Cramer's V = 0.187, p = 0.001) and duration of current pregnancy (Cramer's V = 0.186, p = 0.002).[20]

A cross-sectional study was conducted in villages of Udupi taluk in Karnataka in 2015 among 305 pregnant women. The mean age of the respondents was 26.0 ± 3.4 years. It was found that 174 (57.0 %) respondents were in the third trimester. 162 (53.1 %) participants had already given birth to two or more children. 7 (2.3 %) respondents reported a history of pregnancy complication. All pregnant women in the study had registered their current pregnancy at a health facility. 58.7 % had visited the health facility more than five times for antenatal check - ups. 79.3 % were aware regarding the Janani Suraksha Yojana. According to the respondents the health information most frequently given by the health workers was about access to health services like antenatal care (65.2 %) followed by delivery services (64.3 %). 54.4 % of respondents received information about diet during pregnancy from the health workers, whereas 0.7 % had received information about the need to make arrangements for transport and regarding the need to arrange funds for delivery. Awareness of at least one danger sign during pregnancy, delivery, and newborn danger signs was present among 156 (51.1 %), 85 (28.0 %), and 97 (32.0 %) participants respectively. It was found that 99.0 % respondents intended to give birth in a health facility and had identified a skilled birth attendant for delivery. With respect to different elements of BPCR, 129 (42.3 %) had identified the health facility for obstetric emergency. 65.1 % had identified private health providers for delivery followed by government health facilities (34.8 %). 64.0 % of respondents felt that blood transfusion might be required during pregnancy or childbirth and 3 (1.0 %) had identified potential blood donor. The study revealed that 157 (51.4 %) respondents were found to be prepared and 148 women (49.0 %) were not prepared for birth and complications. The multiple logistic regression model showed that statistical significance for being prepared were awareness about expected date of delivery

(OR = 2.486, 95 % CI: 1.15 – 5.35) and awareness about at least one danger sign during delivery (OR = 2.889, 95 % CI: 1.28–6.51).[21]

According to a hospital based cross sectional study conducted among 400 primigravida women attending ANC OPD of SRT Rural Government Medical College, Ambajogai, Beed district, Maharashtra in 2015, BPCR index was 55.8 %. Mean age of the participants was 22.9 years. 281 (70.0 %) women had 4 or more than 4 ANC visits or planned for the same. 119 (29.7 %) women had arrangements for blood donors in case of emergency. Those who had identified skilled birth attendant for delivery, planned where to give birth were 393 (98.2 %) and 378 (94.4 %) respectively. 319 (80.0 %) women had registered in first trimester of ANC and took ANC care in first trimester by skilled provider. 289 (72.0 %) women had identified mode of transportation, 126 (31.5 %) women had saved money for expenses and 119 (29.7 %) women had identified compatible blood donors. 185 (46.2 %) women had knowledge about financial assistance provided in JSY. It was observed that 163 (40.7 %) women knew about any one danger signals of ANC. 222 (56.0 %) knew that reduced fetal movement as one of the danger sign. Other danger signs known were pain abdomen (32.0 %), severe bleeding (30.0 %) and leakage per vagina (30.0 %). Those who knew headache and blurring of vision as danger signals in pregnancy were 6.0 % and 2.0 % respectively. No one knew more than 8 danger signals of pregnancy. Women aged 30 years and above were more aware about danger signals of pregnancy as compared to women below 20 years of age (OR = 23.6, p = 0.000). Education of women (middle school and above) was significantly associated with registration in first trimester (OR = 51, p = 0.000) and arrangements for transportation during delivery (OR = 2.47, p = 0.027).[22]

A cross sectional study was conducted in 2018 in rural villages of a block of Ganjam District, Odisha to assess the awareness and practice regarding BPCR among 48 pregnant women (who completed 24 weeks of gestation) and 48 recently delivered women (within 12 months). Average age of the participants was 27.9 ± 4.9 years. The BPCR index was 44.6 %. The BPCR index in recently delivered women was 61.0 % and in pregnant women (28.2 %). Among pregnant women 16.7 %, 6.3 %, 4.2 % and 10.4 % knew at least one key danger sign in pregnancy, delivery, postpartum and about new born respectively. Those who were aware about JSY and location for emergency care were 58.3 % and 25.0 % pregnant women respectively. Out of 28 pregnant women in the study 34 (70.8 %) had planned for delivery with skilled birth attendant, 14 (29.2 %) had saved money, 4 (8.3 %) had identified vehicle for emergency transportation and 3 (6.3 %) had identified blood donor. Maternal education ($p < 0.001$) and husband's education ($p < 0.05$) were significantly associated with having first ANC within 12 weeks, saving money for child birth, arrangement of transportation for delivery beforehand, arrangement of blood donor and planning for delivery by skilled birth provider. Parity ($p < 0.05$), maternal education ($p < 0.001$), husband education ($p < 0.05$), women status ($p < 0.05$) were significantly associated with well - prepared BPCR status.[23]

A community based cross-sectional study among 110 pregnant women in a rural area of five sub centre under Kharsiya block, Chattisgarh in 2017 observed the BPCR index to be 27.8 %. Mean age of the respondents was 25.0 ± 3.6 years (range 17 - 35 years). 47 (42.7 %) respondents were primi and among 63 multipara, 26 respondents (41.3 %) reported a previous home delivery. 79 (71.8 %) women had registered their pregnancy within 12 weeks and 70 (63.6 %) were aware of 4 ANC visits. Awareness regarding danger signals during labour was present in 6.3 %

women. Awareness regarding danger signals of complications occurring immediate postpartum was observed in 3 (2.7 %) women. None of the participants had awareness about persistent headache / blurring of vision as a danger signal of immediate postpartum. 89.1 % were unaware of complications during labour and 97.2 % women did not know about puerperal complications. None of the pregnant women knew about more than eight danger signs during pregnancy, labour and postpartum. 14 (12.7 %) women knew about the government schemes like JSY / JSSK and transportation provision. 79 (71.8 %) women had availed antenatal care in first trimester by a skilled provider and 81 (73.6 %) women had identified skilled birth attendant for delivery. 11 (10.0 %) women had saved money to meet expenses for delivery and postpartum.[24]

A facility based cross-sectional study among 126 antenatal women attendees at a Maternity Hospital in a slum attached to the urban field practice area of a Medical College, Sion, Mumbai for 3 months resulted in BPCR index of 51.0 %. Among the 126 women, 69 (54.7 %) knew about early registration of pregnancy and 46 (36.5 %) knew about minimum number of antenatal visits essential. 38 (30.1 %) had knowledge regarding financial assistance provided under Janani Suraksha Yojana (JSY) and 53 (42.1 %) had knowledge regarding free transportation by Government. 98 (77.7 %) of the antenatal women had identified a skilled birth attendant for their delivery, 68 (53.9 %) of the antenatal women had saved money for expenses during the pregnancy and delivery and 17 (13.5 %) had knowledge regarding key danger signs during pregnancy. 103 (81.7 %) had availed antenatal care (ANC) during first trimester by a skilled provider. 73 (57.9 %) of the respondents had identified a transport vehicle. There was statistically significant association between literacy and knowledge regarding key danger signs in pregnancy ($\chi^2$ = 33.031, p = 0.00001) and

between literacy and knowledge about financial assistance provided under Janani Suraksha Yojana (JSY) scheme ($\chi^2$ = 5.467, p = 0.019). There was statistically significant association between age - group and money saving. Age group of 26 - 35 years were having more (70.2 %) knowledge than the age group of 18 – 25 years ($\chi^2$ = 7.963, p = 0.005). There was statistically significant association between age - group and knowledge regarding key danger signs during pregnancy ($\chi^2$= 6.310, p = 0.012), minimum no. of ANC visits ($\chi^2$ = 9.001, p = 0.003), free transport under JSY scheme ($\chi^2$ = 11.863, p = 0.001) & travel arrangements ($\chi^2$ = 4.636, p = 0.031).[25]

A study was conducted to assess the knowledge and practice regarding birth preparedness and complication readiness among 60 primigravida mothers attending antenatal clinic of a Medical College Hospital, Berhampur, Ganjam, Odisha. The study included those who had completed 37 weeks of pregnancy without any high risk factor. 50.0 % primigravida mothers had average knowledge, 28.3 % had poor knowledge and 21.6 % had good knowledge regarding BPCR. Those who had poor practice and satisfactory practice of preparation for birth and its complication contributed to 83.3 % and 16.6 % respectively. 66.6 % primi mothers had received information from health professional, 23.3 % from friends / relatives and 10.0 % through television. There was a moderate positive correlation between knowledge and practice of primigravida (r = 0.545 significant at 0.01 levels).[26]

A cross sectional study was conducted among 274 pregnant women who attended antenatal clinics in 2014 in rural field practice areas of Kamineni Academy of Medical Sciences and Research Centre (KAMSRC), Telangana. None of the subjects had knowledge regarding all eight danger signs during pregnancy, labour and postpartum period. 81.4 % of them knew only one danger sign. 77.4 % had saved

money for delivery. 75.9 % of the study participants were aware about JSY and 68.2 % knew about transport facility under JSY. 54.0 % pregnant women were well prepared by fulfilling at least four indicators of BPCR. Pregnant women were sensitized about danger signs by health worker and medical officer. Pregnant women in the age group of > 30 years, educational status of pregnant women and their husbands and joint family had significant associations for well birth preparedness and complication readiness ($p < 0.0005$). Occupational status of both pregnant women and their husbands and regular antenatal checks ups were significantly associated with birth preparedness and complication readiness ($p < 0.005$).[27]

A facility based cross sectional study conducted among 527 pregnant women to assess the status and factors associated with BPCR in 2015 at a primary health centre in Chirgaon district Jhansi, UP found the BPCR index to be 46.4 %. Mean age of the study participants was 21.8 ± 4.4 years. 21.4 % women had saved money needed in case of complications. 69.4 % of husbands accompanied their wives during antenatal care and 51.4 % accompanied them to labour room. 47.0 % of the pregnant women were aware towards the importance of registration during first trimester. 279 (52.9 %) participants were aware of excessive vomiting and 219 (41.5 %) were aware of bleeding as the danger signals during pregnancy. 97 (18.4 %) were aware of severe vaginal bleeding as danger signal during labour and 97 (18.4 %) participants were aware of severe vaginal bleeding as danger signal during postpartum. Socio – economic class IV was positively association with BPCR (Crude OR: 1.67, CI: 1.878 – 4.12). Secondary level of education of study participants was positively associated with BPCR (Crude OR: 3.447, CI: 1.343 – 5.45) and husbands with secondary (Crude OR: 1.90, CI: 0.998 – 3.128) or graduate level of education showed a positive association (Crude OR: 2.47, CI: 1.232 – 4.686).[28]

A hospital based cross sectional study was conducted in an urban field practice area under Bangalore Medical College and Research Institute (BMCRI) in 2016 among 144 antenatal mothers who were in second and third trimester. The aim was to know their BPCR status. 69.5 % of them belonged to age group of 21 - 29 years and the mean age of the study subjects was 23.8 ± 3.7 years. Out of 144 antenatal mothers participated in the study primigravida were 60 (41.7 %). Among the study participants, 92 (63.9 %) were in third trimester and 138 (95.8 %) had Mother Child Protection (MCP) card. Those who had registered during first trimester were 127 (88.2 %) and 133 (92.4 %) had undertaken more than 4 ANC visits. 122 (84.7 %) women had identified skilled birth attendant for delivery, and all had planned where to give birth. 92 (63.9 %) women had identified mode of transportation and 82 (56.9 %) had saved money for expenses. Those who had knowledge about financial assistance provided in JSY were 45 (31.3 %) women and 41 (28.0 %) were aware about transportation provided in JSY. The BPCR index was observed to be 43.9 %. Among the study participants, 27 (18.7 %) knew more than 8 danger signs of pregnancy and 21 (14.5 %) were unaware about any of the danger signs of pregnancy. 45 (31.2 %) of them knew about danger signs in labour and 55 (38.1 %) knew about danger signs during puerperium. The sources of knowledge about danger signs were from doctors among 80 (55.5 %), from mother / mother-in-law among 30 (20.8 %), from healthcare workers among 9 (6.2 %) and among 2 (1.4 %) from MCP card / thayi Card. 101 (70.1 %) knew about referral services, 110 (76.4 %) had identified birth companion during delivery and 38 (26.4 %) had identified a blood donor. Education of women up to middle / high school and above was statistically significantly associated with various factors like more than 4 ANC checkup ($\chi^2$ = 0.04, $p < 0.05$), knowledge about danger signs of pregnancy ($\chi^2$ = 0.008, $p < 0.01$),

saving money ($\chi^2$ = 0.004, p < 0.01), identifying mode of transport ($\chi^2$ = 0.008, p < 0.01), awareness about financial assistance in JSY ($\chi^2$ = 0.002, p < 0.01), and identifying blood donor ($\chi^2$ = 0.000, p < 0.01). Saving money was associated with parity ($\chi^2$ = 0.005, p < 0.01) and type of previous delivery ($\chi^2$ = 0.000, p < 0.01).[29]

A cross – sectional study was conducted in rural field practice area of Najafgarh Extension, Najafgarh, Delhi among 200 pregnant women to assess the status of BPCR. The mean age of the respondents was 24.2 ± 2.0 years. 49.5 % of the antenatal mothers were para two, 32.5 % were para one and 20 (10.0 %) were nulliparous. 5 (2.5 %) had a previous still birth. With respect to BPCR score it was found that out of a total score of 7, 42 (21.0 %) scored 4, 28 (14.0 %) scored 5, 27 (13.5 %) scored 6, 23 (11.5 %) scored 7, while 37 (18.5 %) scored 3, 18 (9 %) scored 0, 14 (7 %) scored 2 and 11 (5.5 %) scored 1. 52 (26.0 %) mothers were aware about more than eight danger signs of pregnancy, 193 (96.5 %) were aware about more than three essential ANC care, 162 (81.0 %) had identified skilled birth attendant for delivery, 118 (59.0 %) had identified mode of transportation, 41 (20.5 %) were aware about financial assistance provided by government in Janani Suraksha Yojana (JSY), 85 (42.5 %) had saved money to pay for expenses during pregnancy. The BPCR index was 50.4 %. There was a statistically significant association between age of the participants ($\chi^2$ = 5.934, p = 0.043), education of the mother ($\chi^2$ = 1.652, p = 0.037), parity ($\chi^2$ = 3.538, p = 0.027, df = 3) and their BPCR status.[5]

A study was conducted in Civil Hospital Ambala, Haryana in 2014 among primigravida mothers who attended OPD in selected hospitals during third trimester of pregnancy. The aim was to assess the knowledge, practice, to determine the correlation between knowledge and practice score of primigravida mothers and to

determine the association of knowledge and practices with their demographic variables regarding birth preparedness. 63.0 % of mothers were in age group of 18 - 23 years and 37.0 % were between 24 - 29 years. 56.0 % of pregnant women were having period of gestation of 28 - 32 weeks, 33.0 % were having period of gestation 32 - 36 weeks and 11.0 % of primigravida mothers were having gestational age between 36 - 40 weeks. 93.0 % of mothers had no knowledge regarding birth preparedness and 7.0 % had some knowledge regarding birth preparedness. Health personnel were the source of information for 85.0 % of primigravida mothers and family members were source for 14.3 % mothers. Mean knowledge score of primigravida mothers regarding birth preparedness was 14.5 ± 4.5 with the range of 4 - 25. Median of knowledge scores of primigravida was 14. Mean percentage was 48.3. Mean expressed practices score of participants regarding birth preparedness was 11 ± 0.7, mean percentage 48.3, median 11 with range of 9 - 12. There was a positive negligible co-relation between the knowledge and practice score of primigravida mothers regarding birth preparedness (r = + 0.14) which was found to be statistically non - significant (p = 0.16) at 0.05 level of significance.[30]

A cross sectional observational study was conducted among 200 pregnant women who attended antenatal clinics at Kamineni Academy of Medical Sciences and Research Centre, Hyderabad with the aim to assess the current level of women's knowledge and associated factors of obstetric danger signs. With respect to knowledge of danger signs in pregnancy, 78 (39.0 %) were aware of vaginal bleeding and convulsions and 67 (33.5 %) were aware of fever. 56 (28.0 %) were aware of severe head ache and 55 (27.5 %) were aware of leg swellings. 43 (20.0 %) had knowledge about reduced fetal movements and 40 (18.0 %) knew about water leak without pain. Regarding the knowledge of danger signs in labour and child birth,

48.5 % of the women reported convulsions as one of the danger signs, 39.0 % were aware of high fever and 36.0 % severe bleeding. 16.5 % were aware of placenta not delivered in 30 minutes after delivery. 44.0 % of the participants reported jaundice, 38.0 % reported convulsions and 36.5 % poor sucking as danger signs in newborn. This study revealed that the proportion of respondents aware of at least one key danger sign each of pregnancy, labour and newborn were 73.5 %, 67.5 %, and 65.0 % respectively. It was observed that not a single respondent could enumerate all key danger signs of pregnancy, labour, or newborn. All 200 pregnant women were divided in to three age categories ≤ 20, 21 to 30, ≥ 31 years. The women ≥ 31 years had better knowledge regarding danger signs when compared to the women of the other two categories and was not statistically significant. Primipara had better knowledge regarding danger signs when compared to multipara and the difference was not statistically significant. Women belonging to the upper class had better knowledge regarding danger signs when compared to women of the other classes. The difference was statistically significant ($p < 0.05$).[1]

A cross sectional study was conducted among 100 pregnant women visiting OPD of OBGY, Lata Mangeshkar Hospital, Nagpur, Maharashtra, to know the awareness of obstetric danger signs. 48.0 % were primigravida. 38.0 %, 10.0 % and 4.0 % participants were gravida two, three and more than three times respectively. 35.0 % subjects had delivered once, 7.0 % subjects had delivered two times and 3.0 % subjects had delivered three times. 30.0 % of the participants had normal spontaneous vaginal delivery, 20.0 % had cesarean section and 2.0 % had instrumental delivery. Place of delivery was home (9.0 %), government hospital (53.0 %), private hospital (23.0 %) and PHC / RHC (15.0 %). 61.0 % of the participants knew about danger signs of pregnancy. 6.3 % of subjects had good awareness about danger signs and

were of age group 20 to 25 years and 10.2 % of subjects with good awareness were from 25 to 30 years. 20.0 % of subjects had fair knowledge (knew about 50 to 75 % of obstetric danger signs). 73.0 % had poor knowledge about danger signs. Among those who had poor knowledge, 46.4 % were from age 20 to 25 years. 50.0 % of subjects knew about bleeding. Other danger signs which the subjects knew were blurred vision (35.0 %), swollen hand / feet / face (48.0 %), weakness (22.0 %), convulsions (10.0 %), retained placenta (23.0 %), labour lasting > 12 hours (16.0 %), high fever and headache (7.0 %).The sources of knowledge were health personnel (57.4 %) and mass media (42.6 %).[31]

A study was carried out in 2015 among 382 pregnant women above 18 years of age attending the antenatal clinic of JIPMER hospital, Puducherry, to determine the level of knowledge and the factors affecting the knowledge of danger signs during pregnancy and childbirth. The mean age was 24.7 ± 3 years. 19 (5.0 %) were teenage pregnancies. Among the pregnant women, 236 (61.7 %) were in their third trimester, 132 (34.5 %) were in their second trimester, and 3.7 % were in the first trimester. The mean period of gestation was 30.8 ± 7.9 weeks. 160 (41.9 %) participants had also attended a primary health centre, and 59 (15.4 %) women had also visited a private practitioner for antenatal checkup during this pregnancy. 61 (16.0 %) of the pregnant women were exposed to any formal awareness raising classes. 103 (27.0 %) of the study population had been informed about the danger signs during their antenatal visit by the doctors and health personnel. The study showed that the level of knowledge about danger signs during pregnancy, during labour, and after childbirth were 49.2 % (95 % CI: 44 % – 54 %), 27.2 % (95 % CI: 23 % – 32 %), and 21.2 % (95 % CI: 17 % – 26 %), respectively. 232 (60.7 %) participants were aware of severe abdominal pain and 216 (56.5 %) were aware of heavy bleeding as danger signs of pregnancy. 96

(25.0 %) were aware of heavy bleeding as the danger sign of labour and 125 (32.7 %) were aware of heavy bleeding and 112 (29.3 %) knew about high fever as the danger signs during postpartum. On univariate analysis, the study found that the lower education [OR = 1.5 (1.1 – 1.9), p = 0.0305], multi parity [OR = 1.1 (0.9 – 1.5), p = 0.053], lack of exposure to any formal awareness raising class [OR = 1.9 (1.2 – 2.8), p = 0.0003], and the lower education of husband [OR = 1.4 (1.1 – 1.8), p = 0.0342] were associated with the lack of knowledge about danger signs during pregnancy. Lower education of the women [OR = 1.2 (1.0 – 1.5), p = 0.0049] and lack of exposure to awareness raising classes [OR = 1.2 (1.0 – 1.5), p = 0.0204] were strongly associated with a lack of knowledge about danger signs during labour. Lower education of the women [OR = 1.2 (1.0 – 1.4), p = 0.0331] and lack of exposure to awareness raising classes [OR = 1.4 (1.1 – 1.7), p = 0.0001] were strongly associated with a lack of knowledge about danger signs after childbirth. On multivariable regression analysis, lack of exposure to formal awareness raising health counseling classes was found to independently predict a lack of knowledge about the danger signs of pregnancy [AOR = 1.8 (1.2 – 2.7)], and lack of knowledge about danger signs after childbirth [AOR = 1.4 (1.1 – 1.7)]. Lower education level [AOR = 1.2 (1.0 – 1.4)] independently predicted a lack of knowledge about danger signs of labour.[32]

A study was conducted among 100 antenatal mothers residing under the jurisdiction of Rural Health Centre, Mallunanga, Amritsar, Punjab, in 2014 to determine their extent of birth preparedness. 55.0 % of antenatal mothers were in age group 21 - 25 years. Mean age of the participants was 23.4 ± 3.2 years. The criterion used in the study was extent of score on birth preparedness. Maximum obtainable score was 44. The score was divided into three levels. Score 0 – 14 was considered as

poor, 15 – 28 as average and ≥ 29 as good. 70.0 % antenatal mothers had poor birth preparedness and 31.0 % mothers had average birth preparedness. None of them were found to be having good birth preparedness. 90.0 % of pregnant mothers had planned for the place of delivery, 83.0 % had made arrangement for availability of skilled birth attendant during delivery and 69.0 % had planned transportation to reach the health facility for delivery. 35.0 % antenatal mothers had saved money for their delivery and 10.0 % had arranged blood donor for any emergency during delivery. 73.0 % had planned to have someone to look after her health during & after childbirth. Out of 71 antenatal mothers who knew about danger signs of pregnancy, 75.0 % knew ≤ 3 danger signs and 25.0 % knew more than 3 danger signs. All antenatal mothers knew ≤ 3 danger signs during childbirth and first two days after birth. Out of 71 antenatal mothers who knew about danger signs during first seven days among newborn, 92.9 % knew ≤ 3 danger signs and 7.1 % knew more than 3 danger signs. 90.0 % had heard about birth preparedness and 69.0 % had made arrangement for delivery. 88.0 % had registered the pregnancy. Women in age group of 21 - 30 years were better prepared for birth as compared to younger & older age women ($F = 4.07$ , $p < 0.05$). It was found that the antenatal mothers who were highly educated were better prepared than less educated ($F = 9.04$, $p < 0.05$). The women in middle / lower middle class were significantly better prepared as compared to other social class women ($F = 7.23$, $p < 0.05$). The study observed that level of birth preparedness significantly increased with the advancement of pregnancy ($F = 4.23$, $p < 0.05$).[33]

A cross-sectional study was conducted among 672 pregnant women at the Department of Obstetrics and Gynecology, Faculty of Medicine Vajira Hospital, Bangkok, Thailand, in 2017 to assess the BPCR status and factors associated with BPCR. 52.2 % were multipara, 53.7 % had gestational age > 12 weeks at first ANC,

and 80.7 % had ≥ 4 ANC visits. The study found that 528 (78.6 %) pregnant women had good BPCR by fulfilling at least four BPCR indicators and 144 (21.4 %) had poor BPCR. 74.7 % knew eight key danger signs during pregnancy, labour, postpartum and, in the newborn. 70.4 % had planned to attend at least four antenatal care visits with a skilled provider and 76.0 % had attended first antenatal care session with a skilled provider during first trimester. 86.8 % had planned to give birth with a skilled provider, 50.7 % had planned to save money for a childbirth and 85.4 % had planned to identify a mode of transport to the place of delivery. 47.0 % knew about danger signs during labour. 87.5 % knew about severe vaginal bleeding as obstetric complication during pregnancy, 83.5 % and 87.5 % participants knew severe vaginal bleeding as obstetric complication during labour and postpartum, respectively. 43.5 % had knowledge about retained placenta. The adjusted OR estimated by multivariate logistic regression analysis revealed that the significant factors predicting good BPCR were pregnant women who had a diploma or a bachelor's degree (AOR 2.09, 95 % CI: 1.19 – 3.69, p = 0.010), had income over 10,000 Thai Baht (AOR 2.63, 95 % CI: 1.37 – 5.05, p = 0.004), had extended family (AOR 2.32, 95 % CI 1.41 – 3.82, p = 0.001) and were multiparous (AOR 1.56, 95 % CI: 1.01 – 2.42, p = 0.047).[34]

A descriptive cross sectional study was conducted at a Rural Health Centre, Mandra, Pakistan in 2016 among 320 pregnant women who were in the third trimester to assess the level of awareness about their birth preparedness and complication readiness (BPCR). The mean age of the participants was 29.0 ± 6.4 years. 161 (50.3 %) had 2 antenatal visits, 85 (26.5 %) had 3 antenatal visits and 74 (23.1 %) had one antenatal visit. Among 29 working women, 17 (58.6 %) were well prepared for their birth and had better knowledge regarding complications compared to 127 (43.6 %) housewives. 249 (77.8 %) had identified their place of delivery, 243

(75.9 %) had identified a companion in case of emergency or for normal labour, 153 (47.8 %) had even saved money for any kind of emergency. 87 (27.2 %) of the participants had identified mode of transportation needed during emergency or labour. Blood donor for emergency needs was identified by 4 (1.2 %) pregnant women. The knowledge of elements of BPCR was highest (7 out of 8) in 26 (8.1 %) followed by 6 elements in 47 (14.7 %), 5 elements in 78 (24.4 %), 4 elements in 83 (25.9 %) and 69 women (21.6 %) had poor knowledge of only three elements. Knowledge about danger signs of pregnancy was found in 318 (99.4 %) participants. The study observed that participants whose husband's income was high showed better BPCR ($p = 0.001$). Participants with better education showed statistically significant association with better BPCR ($p = 0.001$). Number of antenatal visits had a significant association with better BPCR scores ($p = 0.001$).[35]

In 2016 a descriptive cross sectional study was conducted at Teaching Hospital Mahamodara, Srilanka among 200 antenatal mothers who were in their third trimester. The aim was to assess awareness and practices on Birth Preparedness and Complication Readiness during antenatal period. Mean age was 29 years. 100 (50.0 %) participants were primipara. 93.5 % of pregnancy booking registration was done before $12^{th}$ week of period of gestation. Regression analysis found that better educational level (OR = 0.31; 95 % CI 0.11 to 0.91) and mothers who had expected pregnancy had better practices on Birth Preparedness and Complication Readiness (OR = 0.26; 95 % CI 0.10 to 0.70). Among all the participants, 177 (88.5 %) were aware of the concept of Birth Preparedness and Complication Readiness. 185 (92.5 %) pregnant women had above average knowledge of Birth Preparedness and 156 (78.0 %) had above average knowledge about Complication Readiness. 100 (50.0 %) antenatal mothers knew all the danger signs during pregnancy. Those who

knew all the danger signs during labour and childbirth were 87 (43.5 %). 111 (55.5 %) were aware of all the danger signs during post-partum period. 137 (68.5 %) had attended at least 5 ANC visits. 164 (82 %) pregnant women had participated in antenatal sessions of birth preparation. The study showed that 142 (71.0 %) pregnant mothers were satisfactorily prepared for childbirth. On regression analysis it was found that young mothers had better knowledge of Birth Preparedness than older mothers (OR = 3.77; 95 % CI: 1.16 – 12.24) and older mothers had better knowledge of Complication Readiness than younger mothers (OR = 3.77; 95 % CI: 1.16 – 12.24).[36]

In 2015, a community - based cross-sectional study was conducted in Tehulederie district in the Amhara State, northeast Ethiopia among 500 pregnant women to assess the practice of birth preparedness and complication readiness and associated factors. The mean age of the respondents was 28.8 ± 5 years. 135 (27.0 %) of the respondents were primigravida, 365 (73.0 %) had more than two pregnancies. 185 (37.0 %) respondents were in the first trimester and 25 (5.0 %) in the third trimester. 358 (71.6 %) respondents had at least 2 ANC visits. 492 (98.4 %) respondents had knowledge about danger signs during pregnancy, childbirth, and within two days of the postpartum period. 128 (25.6 %) were not knowledgeable about danger signs during pregnancy, 333 (66.6 %) were not knowledgeable about danger signs during labour / childbirth. 321 (64.2 %) participants were not knowledgeable about danger signs within two days of the postpartum period. All the respondents reported that they had received information about BPCR. 440 (88.0 %) said that they had saved money for delivery and possible obstetric emergencies, 429 (85.8 %) said that they had identified place of delivery, 109 (21.8 %) said that they had arranged potential blood donor, and 142 (28.4 %) said that they had

spontaneously chosen a skilled birth attendant. Among 500 participants, 391 (78.2 %), 175 (35.0 %), 336 (67.2 %), 202 (40.4 %), and 104 (20.8 %) had identified health facilities for delivery, skilled birth attendants, financial sources for delivery and any emergencies, modes of transport, and potential blood donors, respectively. 348 (69.6 %) had chosen a birth companion, 380 (76.0 %) had selected medical facility in case of obstetric emergency, and 346 (69.2 %) had nominated decision maker in case of obstetric emergency. The study found that 43.4 % of the women practiced BPCR. It was observed that women who were knowledgeable about danger signs during pregnancy were three times more likely to practice BPCR compared to those who had no knowledge about danger signs during pregnancy [AOR = 2.802, 95 % CI: 1.637 - 4.793] and the difference was statistically significant ($p < 0.001$). Pregnant women with a gestational age of 4 – 6 months were three times more likely to practice BPCR than women whose gestational age was up to three months [AOR = 3.379, 95 % CI: 2.114 - 5.401] and the difference was statistically significant ($p < 0.001$). Those who had started ANC follow-up within 3 – 4 months of their pregnancy were three times more likely to practice BPCR compared to with those who had started late [AOR = 2.841, 95 % CI: 1.330 - 6.068] and the difference was statistically significant ($p = 0.007$).[37]

In 2016, a facility - based cross-sectional study was conducted in the Bamenda Health District (BHD) of the North West Region of Cameroon among 345 pregnant who were at ≥ 32 weeks gestation. The aim was to analyze the awareness and practice of BPCR. The proportion of pregnant women who had heard of the term birth preparedness was at 46.1 %. 308 (89.3 %) pregnant women reported that they had received some information on preparations to be made during pregnancy from the health workers. 183 (53.0 %) women had received information on danger signs in

pregnancy, 298 (86.4 %) on where to go in case of health problem and 283 (82.0 %) on where to give birth. Those who received information on making arrangement for funds, arrangements for transportation, and arrangement for blood donors were 308 (89.3 %), 165 (47.8 %) and 102 (29.6 %) respectively. 231 (67.0 %) were informed on signs of labour. 87.5 % participants knew some danger signs and 12.2 % of them did not know any danger signs in pregnancy. 255 (73.9 %) were aware of vaginal bleeding as a danger sign. Other danger signs which the participants knew were severe abdominal pain (40.6 %), high fever (21.2 %), abnormal fetal movements (17.4 %), leakage of amniotic fluid before labour (15.7 %), difficult breathing (11.3 %), swollen hands / face / feet (6.7 %), convulsion (5.2 %), blurred vision (0.9 %), severe headaches (6.7 %), severe weakness (6.1 %), loss of consciousness (2.6 %), and others which included severe vomiting and foul-smelling discharge (2.0 %). With respect to BPCR practice, 287 (83.2 %) had saved money for incurring cost of delivery and obstetric emergencies, 197 (57.1 %) had identified and made arrangement for means of transportation, 23 (6.3 %) had identified skilled birth attendant, and 79 (22.9 %) had identified blood donor. 18.8 % of the pregnant women were considered well prepared for birth and complications. Multivariate logistic regression showed that monthly income (OR = 2.94, 95 % CI: 1.39 - 6.25, p = 0.005) and number of ANC visits (OR = 2.16, 95 % CI: 1.18 - 3.90, p = 0.013) were significantly associated with birth preparedness and complication readiness.[38]

A cross-sectional study was conducted among 350 pregnant women who were referred for obstetric emergencies to Ruhengeri hospital, Musanze district, Rwanda, in 2015 to assess practices of BPCR and factors associated with BPCR. Mean age was 27.7 ± 6 years. All respondents had attended ANC at least once during this pregnancy, 131 women (37.4 %) had completed ≥ 4 antenatal visits. Mean antenatal visits were

2.9 ± 0.9. 59.4 % had received education on the importance of knowing danger signs, knowing where to go if complications occur (73.1 %), where to give birth (76.3 %), identifying transport (67.1 %), identifying a skilled birth attendant (17.7 %) and saving money (76.9 %). 214 (61.1 %) women knew vaginal bleeding as complication during pregnancy. 256 (73.1 %) knew vaginal bleeding as complication during labour / birth and 203 (58.0 %) knew vaginal bleeding as complication during postpartum. Prolonged labour was reported by 13.7 %. Those who knew at least one key danger sign during pregnancy, labour / birth and postpartum were 296 (84.6 %), 271 (77.4 %) and 288 (82.3 %) respectively. 23 women (6.6 %) had knowledge of at least 3 key danger signs during the three periods. 46 women (13.1 %) had identified a skilled birth attendant, 68 (19.4 %) a facility to give birth, and 76 (21.7 %) mode of transportation. 306 pregnant women (87.4 %) had saved money for hospital costs / birth materials. The study found that 78 women (22.3 %) were 'well prepared' in terms of BPCR. The adjusted multivariate model showed that significant predictors for being well prepared were first time pregnancy (AOR = 3.2; 95 % CI 1.2 – 5.8), knowledge of at least two danger signs during pregnancy (AOR = 2.8; 95 % CI 1.7 – 3.9) and having seen a community health worker (AOR = 2.2, 95 % CI 1.3 – 3.7).[39]

A descriptive cross-sectional study was conducted on 60 antenatal mothers who had attended the OBGY in - patient Department of National Medical College Teaching Hospital (NMCTH), Birgunj, Nepal to assess the knowledge and practice regarding birth preparedness and complication readiness (BPCR). The study found that 13 (21.7 %) antenatal mothers had adequate knowledge regarding BPCR, 30 (50.0 %) had moderate knowledge and 17 (28.3 %) antenatal mothers had inadequate knowledge. 50 (83.3 %) were having poor practice of birth preparedness and complication readiness and 10 (16.7 %) antenatal mothers were having satisfactory

practice. 66.6 % had received information from health personnel regarding BPCR. The study observed that the knowledge of antenatal mothers and their practice were positively correlated to each other ($r = 0.545$, $p = 0.01$). There was statistically significant association between knowledge score and number of pregnancy ($\chi^2 = 3.84$, Yates correction = 3.948, $p < 0.05$) and between practice score and place of residence ($\chi^2 = 3.84$, Yates correction = 4.879, $p < 0.05$).[40]

A community based cross – sectional study done in 2013 in Duguna Fango District, Wolayta zone, Ethiopia among 578 pregnant women revealed that 104 (18.3 %) were well prepared. The mean age of the participants was 26.0 ± 4.0 years. 98 (17.2 %) were primigravida, 365 (64.1 %) pregnant women had two to four children and 106 (18.7 %) had five and above children. 342 (60.1 %) women attended antenatal care in their current pregnancy. The mean gestational age at first antenatal visit was 4.7 months. 251 (73.0 %) pregnant women said that a health care provider had given health advice regarding BPCR during ANC visits. 271 (79.2 %) pregnant women had received advice regarding where to go if health problems happen. 312 (91.2 %) were given advice on where to deliver, 96 (28.1 %) were advised to arrange transport to go to health facility, 150 (43.8 %) had received advice to save money for expense of emergency and birth related conditions, 20 (5.8 %) were advised to arrange blood donor for emergency and 138 (40.8 %) were advised to identify skilled birth attendant. 264 (46.4 %) had planned to give birth at home, 248 (43.6 %) had planned to deliver at health centre / hospital and 57 (10.0 %) had planned to go to health post for delivery. 230 (40.4 %) knew at least two danger signs during pregnancy. 383 (67.3 %) knew at least two danger sings during childbirth and 164 (28.8 %) had knowledge about two danger signs during postpartum. 17 (3.0 %) had arranged compatible blood donor, 62 (10.9 %) had identified skilled provider and 103

(18.1 %) had arranged transportation. 248 (43.6 %) had identified health facility and 308 (54.1 %) had saved money for delivery and emergency. Availing antenatal care services (AOR = 2.95, 95 % CI: 1.62 – 5.37), primigravida (AOR = 3.37, 95 % CI: 1.45 – 7.82) and having knowledge of at least two danger signs during pregnancy (AOR = 2.81, 95 % CI: 1.69 – 4.67) were predictors of BPCR.[41]

# METHODOLOGY

A community based cross – sectional study was conducted among the pregnant women in the rural field practice area of Primary Health Centre, Kinaye under the administration of Department of Community Medicine, J. N. Medical College, KAHER, Belagavi, Karnataka. The study was conducted for one year from 1st January 2019 to 31st December 2019.

The sample size was calculated using the formula $n = 4pq/d^2$, taking the prevalence (p) of BPCR index as 41 % and allowable error as 5 %. The estimated sample size was 387 and was rounded off to 400 (Based on an original study done by Lady Hardinge Medical College, New Delhi in 2012).[15] The information regarding the number of registered pregnant women in the year 2017 – 2018 was obtained from the ANC registers of Primary Health Centre, Kinaye, Belagavi.

The rural field practice area of Primary Health Centre, Kinaye has nine sub - centres with a mid – year population of 73,474. The total number of ANCs registered in the year 2017 – 2018 was 1,494. Population proportionate sampling was done to select the number of study participants from each sub - centre.

The studies conducted earlier were mostly among pregnant women of all trimesters and postnatal women. The evidences from previous studies showed that majority of the antenatal women were not aware about BPCR in the first and second trimesters of pregnancy. Hence, in the present study, pregnant women more than 28 weeks gestation age only were included.

The number of study participants from each sub - centre included in the study is shown below.

| Name of the sub - centre in Kinaye PHC | Total No. of ANCs registered in one year | Calculation for proportional sampling | No. of ANCs selected for study |
|---|---|---|---|
| **Desur** | 130 | 130/1494*400 | 35 |
| **Karle** | 133 | 133/1494*400 | 36 |
| **Kinaye** | 119 | 119/1494*400 | 32 |
| **Khadarwadi** | 152 | 152/1494*400 | 41 |
| **Macche – I** | 128 | 128/1494*400 | 34 |
| **Macche – II** | 252 | 252/1494*400 | 67 |
| **Peeranwadi** | 308 | 308/1494*400 | 82 |
| **Santibastwad** | 146 | 146/1494*400 | 39 |
| **Waghwade** | 126 | 126/1494*400 | 34 |
| **Total** | **1494** | | **400** |

**Inclusion criteria:**

1. Permanent residents of the study area (residing at least one year preceding the survey).
2. Registered antenatal women who were at more than 28 weeks of gestational age.

**Exclusion criteria:**

1. Those who did not respond after three consecutive attempts / visits.

Ethical clearance was obtained from the Institutional Ethics Committee for Human Subjects' Research of the Medical College dated 24.11.2018 vide under letter (MDC / DOME / 26). Written informed consent was obtained from all the study participants before the data collection.

Data collection was done through antenatal checkup camps conducted at each sub – centre. The details of number of registered pregnant women at more than 28 weeks of gestational age for every month was collected from the Auxiliary Nurse Midwife of each sub – centre under the Primary Health Centre, Kinaye. The data collection among the eligible participants who were not available during antenatal camps was done through house to house visits. The houses of the study participants were located with the help of Accredited Social Health Activist (ASHA) of the respective village. Pre – validated and tested questionnaire regarding knowledge, attitude and perception about BPCR and practice of BPCR from Safe Motherhood Population – Based Survey Questionnaire on monitoring of BPCR from the John Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) was used for the personal interview.[42]

The questionnaire included the following components:

1) Socio – demographic information,
2) History of previous live births, still births and abortions
3) Knowledge about Birth Preparedness and Complication Readiness (BPCR)
4) Attitude and perception about Birth Preparedness and Complication Readiness (BPCR)
5) Personal experience with current pregnancy
6) Media
7) Exposure to media interventions
8) Participation in community interventions

**Definition of study variables:**

1. **Age:** Age was recorded to the nearest completed years (As on last birthday).
2. **Religion**

The participant's religion was grouped under "Hindus", "Muslims", "Christians" and others which include Sikhs, Buddhists, and Jains. [43]

3. **Education**: (as per the Census of India criteria, 2011).

- **Illiterate** – A person who cannot read / write with understanding in any language and who has completed seven years of age.
- **Primary -** Person who has studied from $1^{st}$ to $5^{th}$ standard.
- **Secondary** – Person who has studied from $6^{th}$ to $10^{th}$ standard.
- **PUC / ITI / Diploma** - A person who had completed education up to PUC or any diploma or ITI.
- **Degree / Graduate** - A person who had completed any graduation degree course or any under-graduation course.

- **Post graduate** - A person who had completed any post - graduation course.[43]

**4. Occupation**

- **Homemaker** – A person whose primary activity is carrying out household tasks without being paid.

- **Self – employed** – A person who produces goods for sale or earns an income through provision of services to different people and / or who spends significant amount of time working for family business, farming or other similar activity.

- **Non – government employee** – A person who is hired to work and is paid a salary or wages. This includes any employee not working for the government.

**5. Socio – economic status**

Information regarding per capita income of the family (in rupees / month) was collected and socio economic status was classified using modified B.G. Prasad's classification for the study period of 2019.[44]

Monthly Per Capita Income = Total monthly income of family

Total number of family members

Modification was done using the Correction Factor.

Correction Factor (CF) was obtained as below,

The study period was from 1st January to 31st December 2019 and hence, the mean Consumer Price index for that period was taken.

Average Consumer price index for the year 2019 (by 2001 base) = 307.[44]

CF = Value of consumer index average (2019) x 4.93 x 4.63

100

= 307 x 4.93 x 4.63

100

= 70.07

**Modified B. G. Prasad's Classification** = Per capita family monthly income of 1961 (B. G. Prasad) x CF

| **Socio – economic class** | **Prasad's classification 1961 (per capita income in rupees / month)** | **Modified Prasad's classification 2019 (per capita income in rupees / month)[44]** |
|---|---|---|
| I | 100 and above | 7008 and above |
| II | 50 – 99 | 3504 – 7007 |
| III | 30 – 49 | 2102 - 3503 |
| IV | 15 – 29 | 1051 – 2101 |
| V | < 15 | 1050 and below |

6. **Gravidity –** A pregnant state both present and past, irrespective of the period of gestation.[45]

7. **Primigravida –** A woman who is pregnant for the first time.[45]

8. **Multigravida –** A woman who has been pregnant more than once.[45]

9. **Gestational age –** Fetal development period from the time of conception until birth.[45]

10. **Trimester**

    - **First trimester –** completion of 12 weeks of gestation.
    - **Second trimester –** above 12 weeks to completion of 28 weeks of gestation.
    - **Third trimester –** Above 28 weeks of gestation.[45]

11. **Still birth –** Any baby born with no signs of life at or after 28 weeks of gestation.[46]

12. **Live birth –** Complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breaths or shows any other evidence of life.[47]

13. **Abortion** – Expulsion or extraction from its mother of an embryo or fetus weighing 500 gram or less when it is not capable of independent survival.[45]

14. **Antenatal Care** - Systematic supervision (examination and advice) of a woman during pregnancy.[45]

15. **Janani Suraksha Yojana (JSY) –** JSY is a 100 % centrally sponsored scheme under National Rural Health Mission (NRHM) and it integrates cash assistance with delivery and post – delivery care.[48]

    Scale of Cash Assistance for Institutional Delivery [48]

| | | |
|---|---|---|
| High Performing States (Karnataka) | Rural | Mothers package – Rs.700 |

16. **Auxillary Nurse Midwife (ANM) –** Auxiliary Nurse Midwife / Multipurpose Worker Female is a worker who is most directly in touch with the community. Her duties range from conducting the community needs assessment to conducting delivery at the sub – centre or at home. Community or field level outreach is the responsibility of the ANM.[49]

17. **Accredited Social Health Activist (ASHA) –** A female community health activist (for every 1000 population) chosen by and accountable to the panchayat to act as the interface between the community and the public healthcare system. ASHA must be primarily a woman resident of the village -married / widow / divorced and preferably in the age group of 25 - 45 years. She should be a literate woman with formal education up to 8th class with communication and leadership qualities.[49]

18. **Skilled provider –** Accredited health professional like midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.[50]

The **BPCR index** was calculated using 12 indicators. The indicators are quantifiable, and the total score sums to 100. The index was calculated by taking the average of the percentages of the below indicators.[7]

**Knowledge of key danger signs:**

- Percentage of women who know key danger signs during pregnancy.
- Percentage of women who know key danger signs during labour and childbirth.
- Percentage of women who know key danger signs during postpartum.
- Percentage of women who know key danger signs in the newborn.

**Service use and planning actions: intentions and behaviours:**

- Percentage of women who had planned to attend at least four antenatal care visits with a skilled provider.
- Percentage of women who attended first ANC visit with a skilled provider during first trimester.
- Percentage of women who had planned to give birth with a skilled provider.
- Percentage of women who had saved money for childbirth.
- Percentage of women who had identified a mode of transport to place of birth.

**Knowledge of community resources:**

- Percentage of women who knew that their community has a financial support system.
- Percentage of women who knew that their community has a transportation system.
- Percentage of women who knew that their community has a blood donor system.

The **key danger signs** that were considered among the indicators for calculating the BPCR index are as follows: [7]

- **Key danger signs during pregnancy** include:
    - Severe vaginal bleeding
    - Swollen hands / face
    - Blurred vision
- **Key danger signs during labour and childbirth** include:
    - Severe vaginal bleeding
    - Prolonged labor (> 12 hours)
    - Convulsions
    - Retained placenta
- **Key danger signs during the postpartum period** include:
    - Severe vaginal bleeding
    - Foul smelling vaginal discharge
    - High fever

- **Key danger signs in the newborn** include:
    - Convulsions / spasm / rigidity
    - Difficult / fast breathing
    - Very small baby
    - Lethargy / unconsciousness
- **BPCR was categorized as well prepared and less prepared** based on the following indicators:

1) Knowledge of at least eight key danger signs during pregnancy, labour & childbirth, first two days after delivery and in the newborn (first seven days).
2) Planned to attend at least four antenatal care visits with a skilled provider.
3) Attended first ANC visit with a skilled provider during first trimester.
4) Planned to give birth with a skilled provider.
5) Saved money for childbirth.
6) Identified a mode of transport to place of birth.
7) Knew that their community has a financial support system.
8) Knew that their community has a transportation system.
9) Knew that their community has a blood donor system.

The participants who fulfilled at least five of the above BPCR indicators were considered as “well prepared” and who fulfilled less than five BPCR indicators were considered as “less prepared”.

- **Knowledge about BPCR included the following nine elements:**

1) Knowledge of at least three danger signs of pregnancy
2) Knowledge of at least two danger signs of labour and childbirth
3) Knowledge of at least three danger signs of postpartum (first two days after delivery)
4) Knowledge of at least three danger signs of newborn (first seven days after delivery)
5) Knowledge of at least two basic care of newborn immediate after delivery
6) Knowledge of at least two components of BPCR
7) Awareness of transport services provided by the community
8) Awareness of financial services provided by the community
9) Awareness of blood services provided by the community

To obtain the total knowledge score, each of these nine elements were given a score "1" if the response was YES and a score "0" if the response was NO or DON'T KNOW. The levels of knowledge were classified into Good, Average and Poor. The total score was 9. Scores ≤ 3 was considered as 'poor' knowledge, score in the range of 4 – 6 was considered as 'average' knowledge and score > 6 was considered as 'good' knowledge about BPCR.

- **Attitude and Perceptions towards BPCR**

There were 8 statements under this section. For positive statements, the scores given were four, three, two, one and zero for strongly agree, agree, disagree, strongly disagree and don't know respectively. For negative statements, the scores given were four, three, two, one and zero for strongly disagree, disagree, agree, strongly agree and don't know respectively. The total score was 32. Scores ≤ 16 were considered as negative attitude towards BPCR and scores > 16 were considered as positive attitude towards BPCR.

- **BPCR Practice included the following five elements:**

1) Identify transport
2) Save money
3) Identify blood donor
4) Identify skilled provider
5) Identify health facility for delivery

To obtain the total practice score, each of these five elements were given a score "1" if the response was YES and a score "0" was given if the response was NO. The total score was 5. If the participants scored at least 3 out of 5, they were considered under 'good' BPCR practice and those who scored < 3 were considered under 'poor' BPCR practice.

**Data analysis:**

The data collected were coded and entered in MS Excel sheet. SPSS 25.0 trial version was used to analyze the data. Frequency and percentages were calculated. Knowledge, attitude and practice scores were calculated and graded into different levels. BPCR index was calculated. The indicators used in BPCR index were used to categorize the study participants as “well prepared” and “less prepared”. Multiple logistic regression was used to find the association between dependent (level of BPCR) and independent (socio – demographic details) variables. Pearson’s correlation coefficient was used to find the relationship between knowledge, attitude and practice scores.

# RESULTS

The present study was a community based cross-sectional study conducted among 400 pregnant women who were more than 28 weeks gestation residing in the field practice area of Primary Health Centre, Kinaye, under the Department of Community Medicine, J. N. Medical College, KAHER, Belagavi. The study was conducted from 1st January 2019 to 31st December 2019.

The data collected was tabulated and analyzed under the following sections:

1) Socio – demographic information,
2) History of previous live births, still births and abortions
3) Knowledge about Birth Preparedness and Complication Readiness (BPCR)
4) Attitude and perception about Birth Preparedness and Complication Readiness (BPCR)
5) Their personal experience with current pregnancy
6) Media
7) Exposure to media interventions and community interventions

## A) Socio - demographic profile

**Table 1.Distribution of study participants according to age (n = 400)**

| Age group (years) | Frequency | Percentage |
|---|---|---|
| 18 - 20 | 54 | 13.5 % |
| 20 - 25 | 210 | 52.5 % |
| 25 – 30 | 115 | 28.8 % |
| >30 | 21 | 5.2 % |
| **Total** | **400** | **100.0 %** |

Among the 400 participants, the mean age was 24.3 ± 3.6 years. The age of the participants ranged from 18 – 40 years. 210 (52.5 %) were in the 20 – 25 years age group, 115 (28.8 %) were in the age group of 25 – 30 years, 54 (13.5 %) were in the age group of 18 - 20 years and 21 (5.2 %) were above 30 years.

**Graph 1.Distribution of study participants according to age (n = 400)**

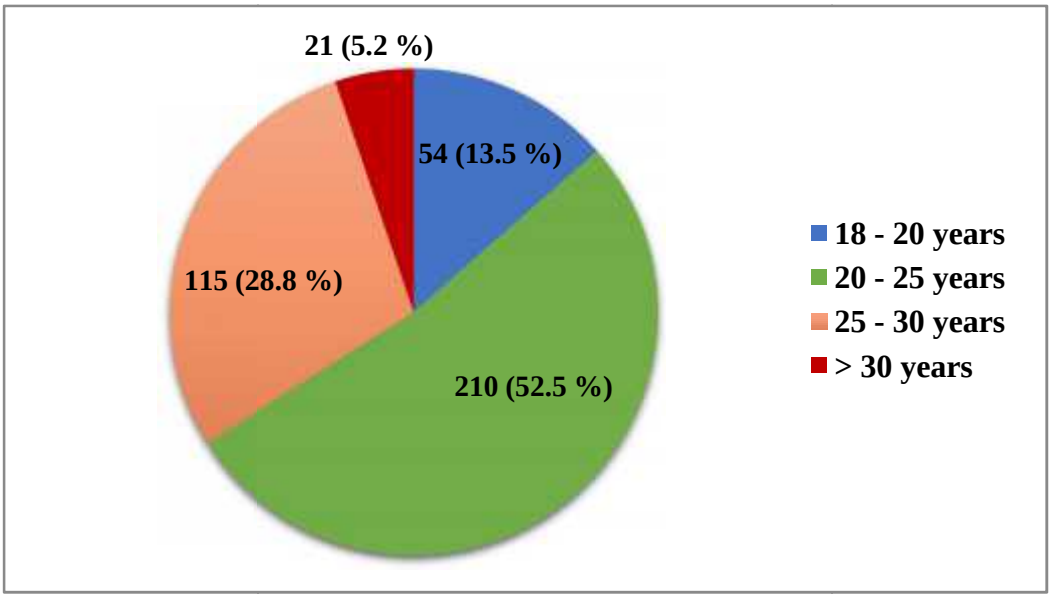


**Table 2.Distribution of study participants according to Religion (n = 400)**

| Religion | Frequency | Percentage |
|---|---|---|
| Hindu | 362 | 90.5 % |
| Muslim | 34 | 8.5 % |
| Christian | 4 | 1.0 % |
| **Total** | **400** | **100.0 %** |

In the present study, 362 (90.5 %) were Hindus, 34 (8.5 %) were Muslims and 4 (1.0 %) were Christians.

**Graph 2.Distribution of study participants according to Religion (n = 400)**

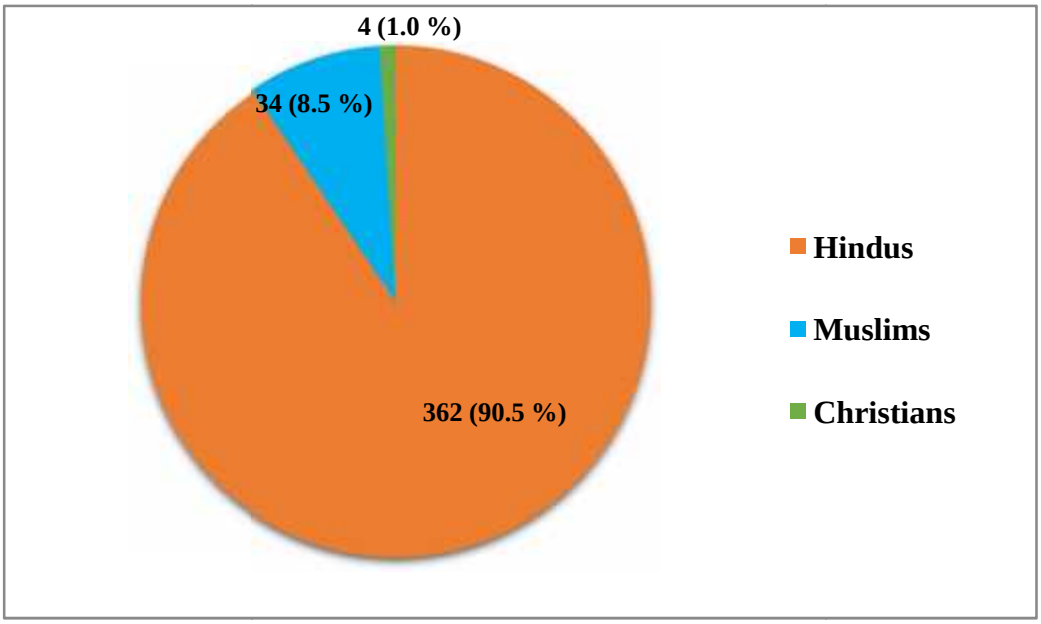


**Table 3.Distribution of study participants according to education (n = 400)**

| Education | Frequency | Percentage |
|---|---|---|
| Illiterate | 20 | 5.0 % |
| Primary (1 – 5$^{th}$) | 32 | 8.0 % |
| Secondary (6 – 10$^{th}$) | 195 | 48.8 % |
| PUC / ITI (11 – 12$^{th}$) | 97 | 24.2 % |
| Graduate | 52 | 13.0 % |
| Post graduate | 4 | 1.0 % |
| **Total** | **400** | **100.0 %** |

Out of 400 pregnant women, 195 (48.8 %) had completed secondary level of education, 97 (24.2 %) had attended up to pre – university college, 52 (13.0 %) were graduates, 32 (8.0 %) had completed primary level of education, 20 (5.0 %) were illiterates and 4 (1.0 %) were post – graduates.

**Graph 3.Distribution of study participants according to education (n = 400)**

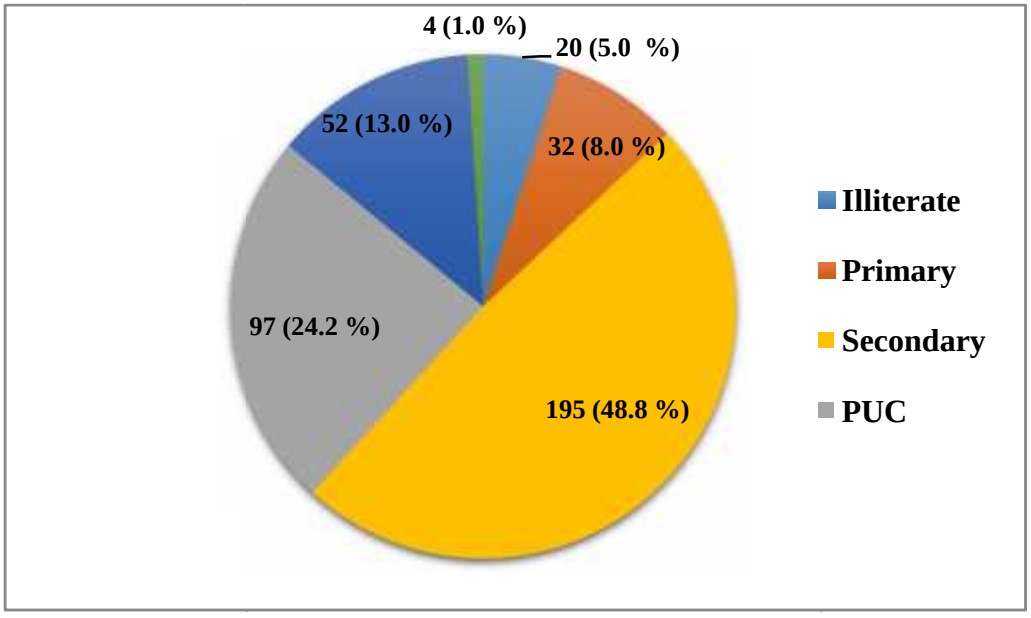


**Table 4.Distribution of study participants according to occupation (n = 400)**

| Occupation | Frequency | Percentage |
|---|---|---|
| Homemaker | 389 | 97.2 % |
| Self - employee | 7 | 1.8 % |
| Non – government employee | 4 | 1.0 % |
| **Total** | **400** | **100.0 %** |

Among the 400 study participants, 389 (97.2 %) were homemakers, 7 (1.8 %) were self – employed and 4 (1.0 %) were non – government employees.

**Table 5.Distribution of study participants according to Socio – economic status as per Modified B. G. Prasad's Classification (n = 400)**

| Socio – economic status | Frequency | Percentage |
|---|---|---|
| Class I | 29 | 7.2 % |
| Class II | 84 | 21.0 % |
| Class III | 117 | 29.3 % |
| Class IV | 133 | 33.3 % |
| Class V | 37 | 9.2 % |
| **Total** | **400** | **100.0%** |

According to Modified B. G. Prasad's Classification of socio – economic status, 133 (33.3 %) participants belonged to Class IV, 117 (29.3 %) belonged Class III, 84 (21.0 %) were in Class II, 37 (9.2 %) were in Class V and 29 (7.2 %) belonged to Class I.

**Graph 4.Distribution of study participants according to Socio – economic status as per Modified B. G. Prasad's Classification (n = 400)**

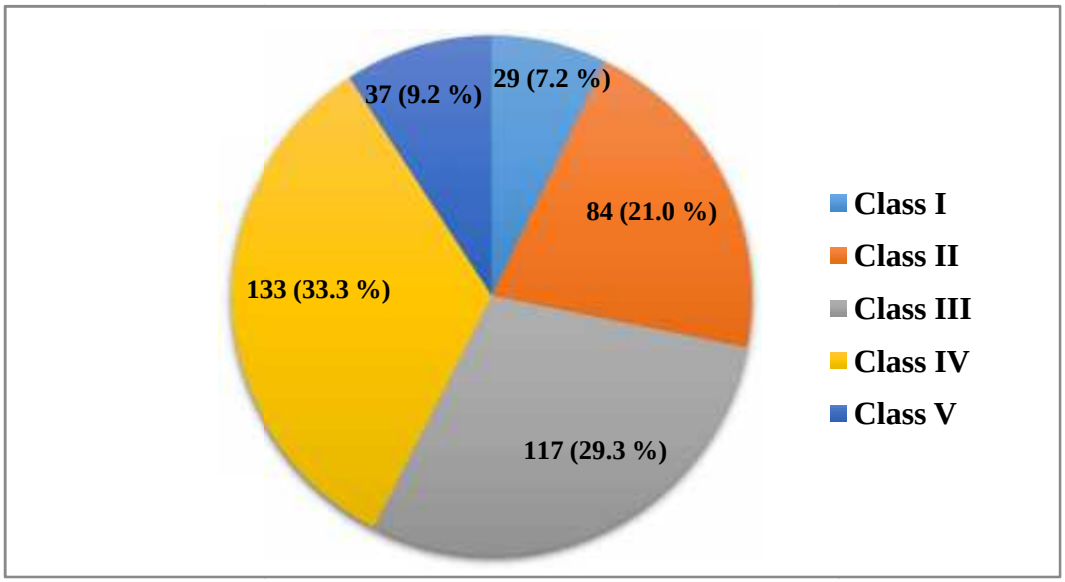


**Table 6.Distribution of study participants according to their gravida status(n = 400)**

| Gravida | Frequency | Percentage |
|---|---|---|
| Primigravida | 158 | 39.5 % |
| Multigravida | 242 | 60.5 % |
| **Total** | **400** | **100.0 %** |

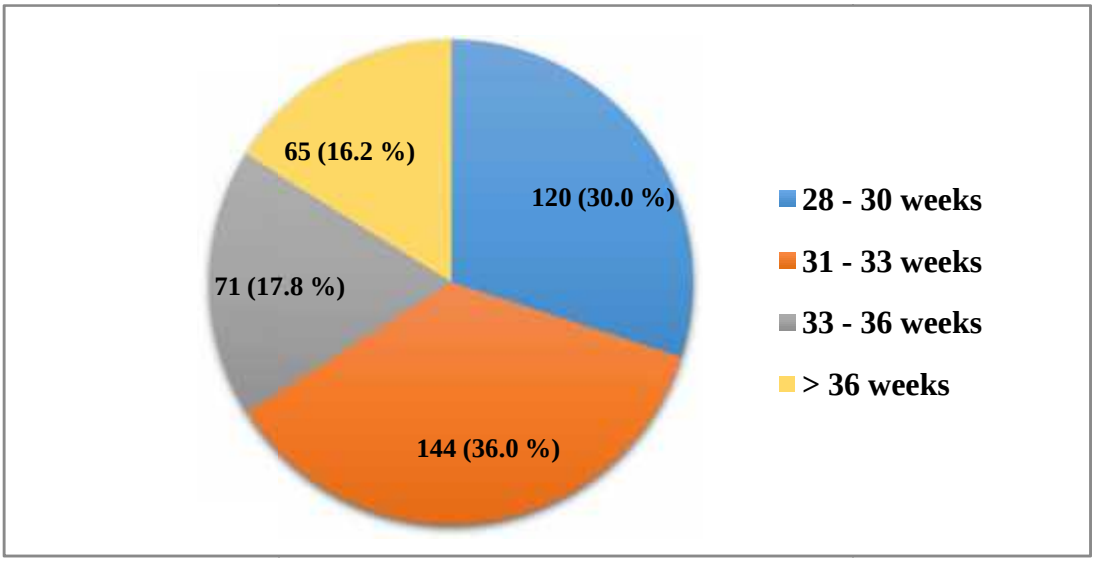
In the present study, 158 (39.5 %) were primigravida and 242 (60.5 %) pregnant women were multigravida.

**Table 7.Distribution of study participants according to their gestational age (n = 400)**

| Gestational age (weeks) | Frequency | Percentage |
|---|---|---|
| 28 – 30 | 120 | 30.0 % |
| 30 – 33 | 144 | 36.0 % |
| 33 – 36 | 71 | 17.8 % |
| >36 | 65 | 16.2 % |
| **Total** | **400** | **100.0%** |

Out of 400 study participants, 144 (36.0 %) were in 30 – 33 weeks of gestational age group, 120 (30.0 %) were in 28 – 30 weeks of gestational age group, 71 (17.8 %) were in 33 – 36 weeks of gestational age group and 65 (16.2 %) were in 36 weeks and above gestational age.

**Graph 5.Distribution of study participants according to their gestational age (n = 400)**



**B) Births and Stillbirths**

Among the 242 multigravida in the study, 239 (98.8 %) had previous history of still births and 3 (1.2 %) had no previous history of still births. 209 (86.4 %) had previous history of live births and 33 (13.6 %) had no previous history of live births. 177 (73.1%) had previous history of abortion and 65 (26.9 %) had no previous history of abortion.

**C) Knowledge**

**Table 8.Distribution of study participants according to awareness about serious health problems during pregnancy (n = 400)**

| Awareness | Frequency | Percentage |
|---|---|---|
| Present | 321 | 80.2 % |
| Absent | 79 | 19.8 % |
| **Total** | **400** | **100.0 %** |

Among the 400 study participants, 321 (80.2 %) had awareness about the serious health problems during pregnancy and 79 (19.8 %) were not aware about it.

**Table 9.Distribution of study participants according to knowledge about each serious health problem during pregnancy among those who had awareness (n = 321)**

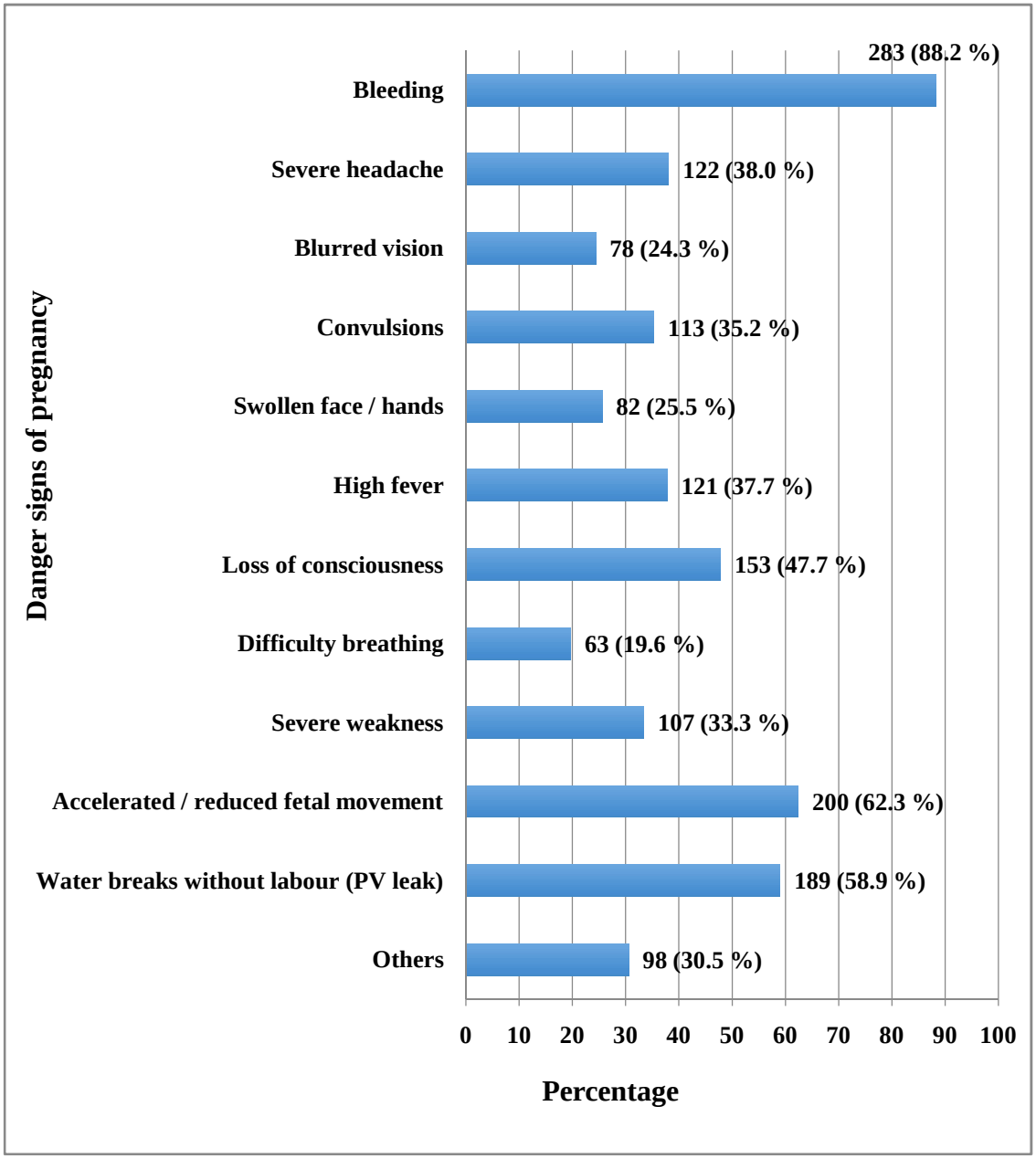
| Danger signs of pregnancy | Frequency | Percentage |
|---|---|---|
| Bleeding | 283 | 88.2 % |
| Severe headache | 122 | 38.0 % |
| Blurred vision | 78 | 24.3 % |
| Convulsions | 113 | 35.2 % |
| Swollen face / hands | 82 | 25.5 % |
| High fever | 121 | 37.7 % |
| Loss of consciousness | 153 | 47.7 % |
| Difficulty breathing | 63 | 19.6 % |
| Severe weakness | 107 | 33.3 % |
| Accelerated / reduced fetal movement | 200 | 62.3 % |
| Water breaks without labour (PV leak) | 189 | 58.9 % |
| Others | 98 | 30.5 % |

- **Others – High blood pressure – 30 (30.6 %), Severe abdominal pain – 60 (61.2 %), Severe vomiting – 55 (56.1 %)**

  ***Multiple responses obtained.**

In the present study, among 321 participants who had awareness about the serious health problems in pregnancy, 283 (88.2 %) had knowledge about bleeding, 200 (62.3 %) knew accelerated / reduced fetal movement, 189 (58.9 %) were aware of water breaks without labour (PV leak), 153 (47.7 %) knew loss of consciousness, 122 (38.0 %) were aware of headache, 121 (37.7 %) had knowledge about high fever, 113 (35.2 %) knew convulsions, 107 (33.3 %) were aware of severe weakness, 82 (25.5 %) knew swollen face / hands, 78 (24.3 %) knew blurred vision, 63 (19.6 %) were aware of difficult breathing and 98 (30.5 %) knew other health problems like high blood pressure, severe abdominal pain and severe vomiting.

**Graph 6.Distribution of study participants according to knowledge about each serious health problem during pregnancy among those who had awareness (n = 321)**




- **Others – High blood pressure – 30 (30.6 %), Severe abdominal pain – 60 (61.2 %), Severe vomiting – 55 (56.1 %)**

***Multiple responses obtained.**

**Table 10.Distribution of study participants according to awareness of number of serious health problems during pregnancy (n = 400)**

| Number of serious health problems | Frequency | Percentage |
|---|---|---|
| < 3 | 168 | 42.0 % |
| ≥ 3 | 232 | 58.0 % |
| **Total** | **400** | **100.0 %** |

Among the 400 study participants, 232 (58.0 %) were aware of at least 3 serious health problems of pregnancy and 168 (42.0 %) were aware of < 3 serious health problems of pregnancy.

**Table 11.Distribution of study participants according to presence of awareness about serious health problems during labour and childbirth (n = 400)**

| Awareness | Frequency | Percentage |
|---|---|---|
| Present | 313 | 78.2 % |
| Absent | 87 | 21.8 % |
| **Total** | **400** | **100.0 %** |

Out of the 400 study participants, 313 (78.2 %) had awareness about serious health problems during labour and childbirth and 87 (21.8 %) were not aware about it.

**Table 12.Distribution of study participants according to knowledge about each serious health problem during labour and childbirth among those who had awareness (n = 313)**

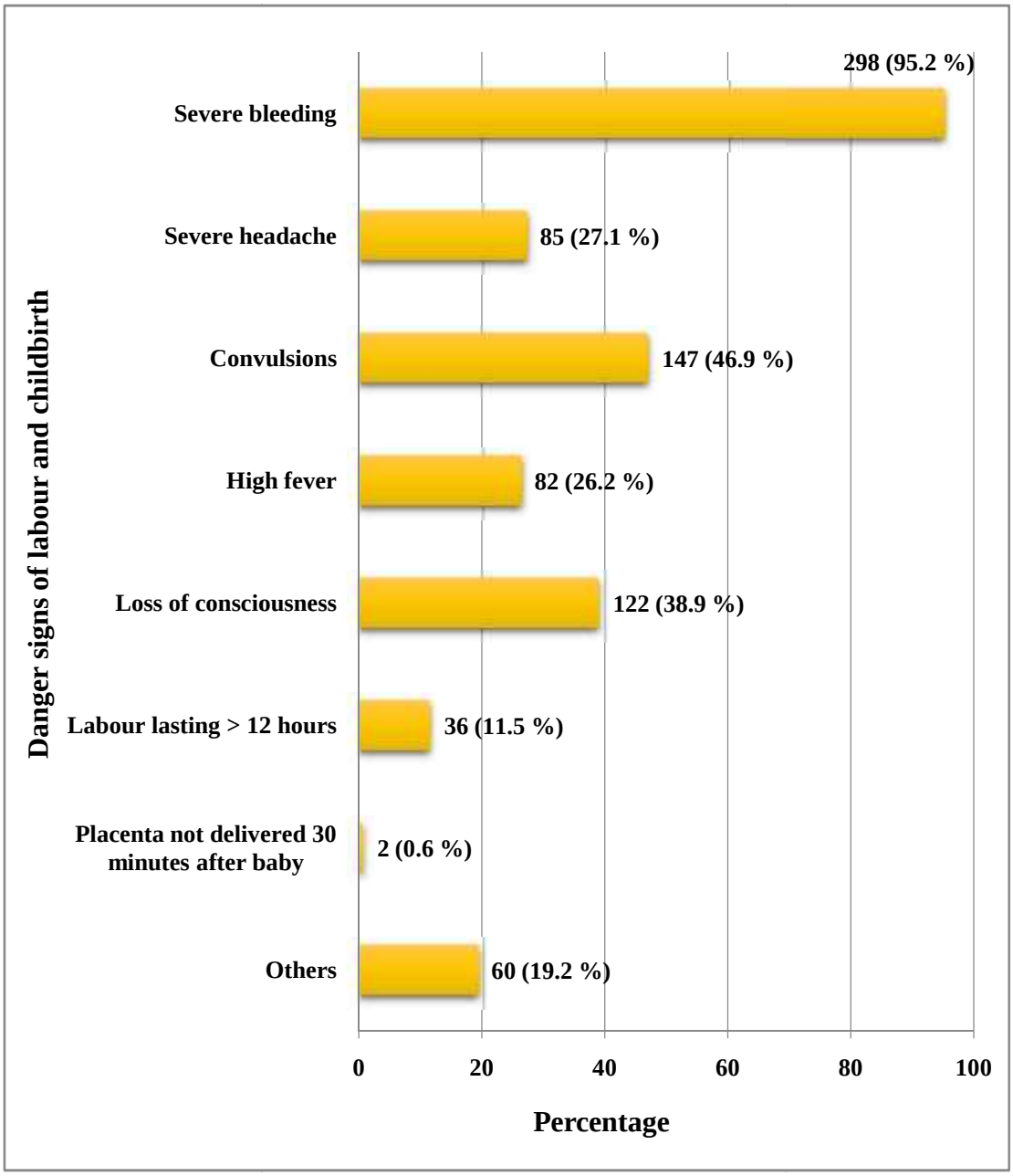
| Danger signs of labour and childbirth | Frequency | Percentage |
|---|---|---|
| Severe bleeding | 298 | 95.2 % |
| Severe headache | 85 | 27.1 % |
| Convulsions | 147 | 46.9 % |
| High fever | 82 | 26.2 % |
| Loss of consciousness | 122 | 38.9 % |
| Labour lasting > 12 hours | 36 | 11.5 % |
| Placenta not delivered 30 minutes after baby | 2 | 0.6 % |
| Others | 60 | 19.2 % |

**Others – Absent labour pain – 23 (38.3 %), High BP – 37 (61.6 %)**

***Multiple responses obtained.**

Among the 313 pregnant women in the study who had awareness about the serious health problems during labour and childbirth, 298 (95.2 %) were aware of severe bleeding, 147 (46.9 %) knew about convulsions, 122 (38.9 %) had knowledge about loss of consciousness, 85 (27.1 %) knew about severe headache, 82 (26.2 %) were aware of high fever, 36 (11.5 %) had awareness about labour lasting > 12 hours, 2 (0.6 %) had knowledge about placenta not delivered 30 minutes after baby and 60 (19.2 %) knew about other health problems like absent labour pain and high blood pressure.

**Graph 7.Distribution of study participants according to knowledge about each serious health problem during labour and childbirth among those who had awareness (n = 313)**




**Others – Absent labour pain – 23 (38.3 %), High BP – 37 (61.6 %)**

***Multiple responses obtained.**

**Table 13.Distribution of study participants according to awareness of number of serious health problems during labour and childbirth (n = 400)**

| Number of serious health problems | Frequency | Percentage |
|---|---|---|
| < 2 | 208 | 52.0 % |
| ≥ 2 | 192 | 48.0 % |
| **Total** | **400** | **100.0 %** |

Among the 400 study participants, 208 (52.0 %) were aware of < 2 serious health problems of labour and childbirth and 192 (48.0 %) were aware of at least 2 serious health problems of labour and childbirth.

**Table 14.Distribution of study participants according to awareness about serious health problems during first two days after delivery (n = 400)**

| Awareness | Frequency | Percentage |
|---|---|---|
| Present | 227 | 56.7 % |
| Absent | 173 | 43.3 % |
| **Total** | **400** | **100.0 %** |

Out of the 400 study participants, 227 (56.7 %) had awareness about serious health problems during first two days after delivery and 173 (43.3 %) were not aware about it.

**Table 15.Distribution of study participants according to knowledge about each serious health problem during first two days after delivery among those who had awareness(n = 227)**

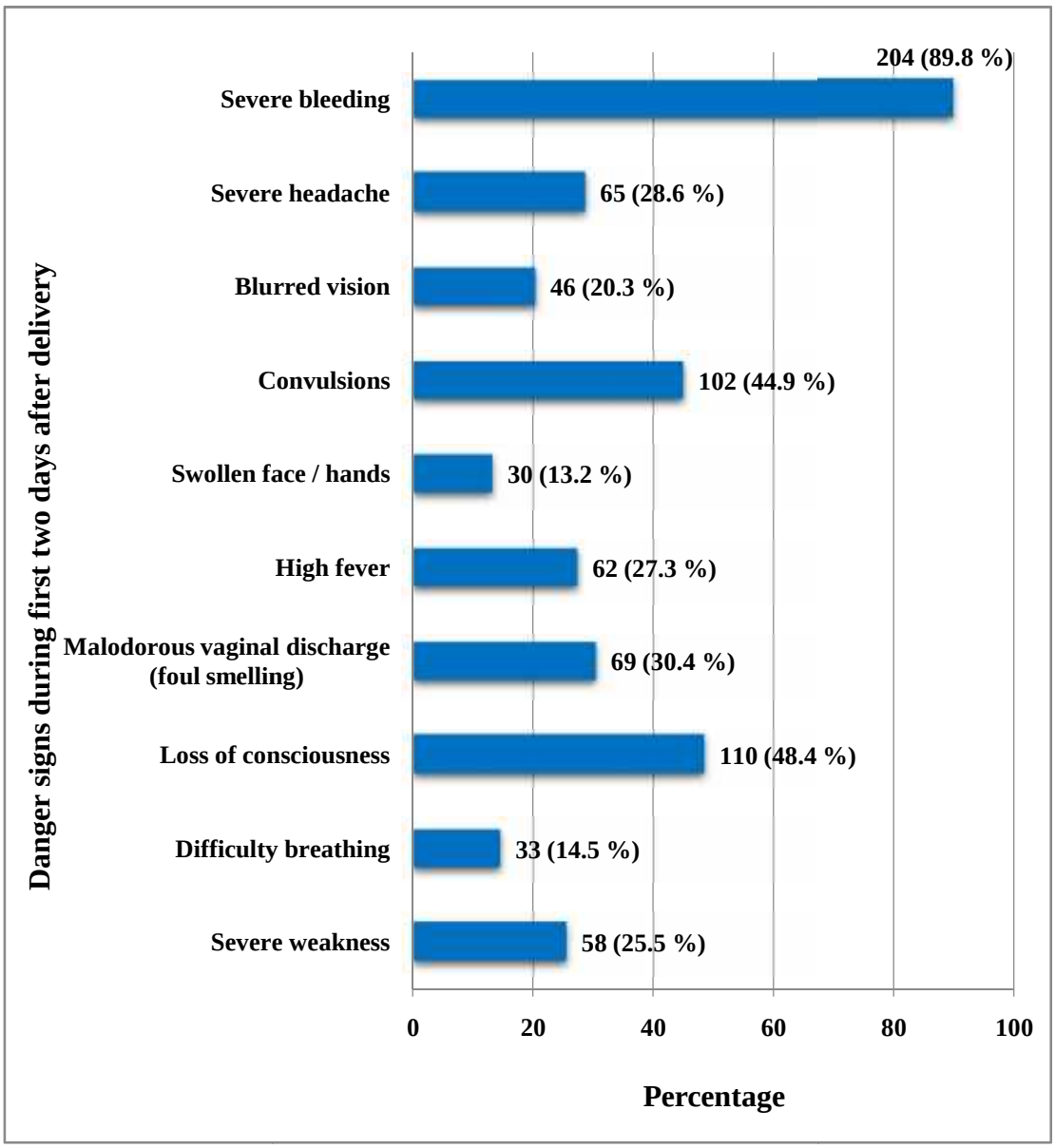
| Danger signs of postpartum | Frequency | Percentage |
|---|---|---|
| Severe bleeding | 204 | 89.8 % |
| Severe headache | 65 | 28.6 % |
| Blurred vision | 46 | 20.3 % |
| Convulsions | 102 | 44.9 % |
| Swollen face / hands | 30 | 13.2 % |
| High fever | 62 | 27.3 % |
| Malodorous vaginal discharge (foul smelling) | 69 | 30.4 % |
| Loss of consciousness | 110 | 48.4 % |
| Difficulty breathing | 33 | 14.5 % |
| Severe weakness | 58 | 25.5 % |

***Multiple responses obtained.**

Among the 227 participants who were aware about the serious health problems during first two days after delivery, 204 (89.8 %) knew about severe bleeding, 110 (48.4 %) were aware of loss of consciousness, 102 (44.9 %) had knowledge about convulsions, 69 (30.4 %) were aware of foul smelling discharge, 65 (28.6 %) had knowledge about severe headache, 62 (27.3 %) knew about high fever, 58 (25.5 %) had awareness about severe weakness, 46 (20.3 %) were aware of blurred

vision, 33 (14.5 %) had knowledge about difficult breathing and 30 (13.2 %) knew about swollen face / hands.

**Graph 8.Distribution of study participants according to knowledge about each serious health problem during first two days after delivery among those who had awareness(n = 227)**




***Multiple responses obtained.**

**Table 16.Distribution of study participants according to awareness of number of serious health problems during first two days after delivery (n = 400)**

| Number of serious health problems | Frequency | Percentage |
|---|---|---|
| < 3 | 281 | 70.3 % |
| ≥ 3 | 119 | 29.7 % |
| **Total** | **400** | **100.0 %** |

Out of the 400 study participants, 281 (70.3 %) were aware of < 3 serious health problems during first two days after delivery and 119 (29.7 %) were aware of ≥ 3 serious health problems during first two days after delivery.

**Table 17.Distribution of study participants according to awareness about serious health problems in newborn during first seven days after delivery (n = 400)**

| Awareness | Frequency | Percentage |
|---|---|---|
| Present | 249 | 62.3 % |
| Absent | 151 | 37.7 % |
| **Total** | **400** | **100.0 %** |

Among the 400 study participants, 249 (62.3 %) had awareness about serious health problems in newborn during first 7 days after delivery and 151 (37.7 %) were not aware about it.

**Table 18.Distribution of study participants according to knowledge about each serious health problem in newborn during first 7 days after delivery among those who had awareness (n = 249)**

| Danger signs of newborn | Frequency | Percentage |
|---|---|---|
| Difficult or fast breathing | 127 | 51.0 % |
| Yellow skin / eye Colour (jaundice) | 209 | 83.9 % |
| Poor sucking or feeding | 151 | 60.6 % |
| Pus, bleeding or discharge from around the umbilical cord | 67 | 26.9 % |
| Baby very small | 145 | 58.2 % |
| Skin lesions or blisters | 47 | 18.8 % |
| Convulsions / spasms / rigidity | 138 | 55.4 % |
| Lethargy / unconsciousness | 81 | 32.5 % |
| Red or swollen eyes with pus | 26 | 10.4 % |
| Others | 40 | 16.1 % |

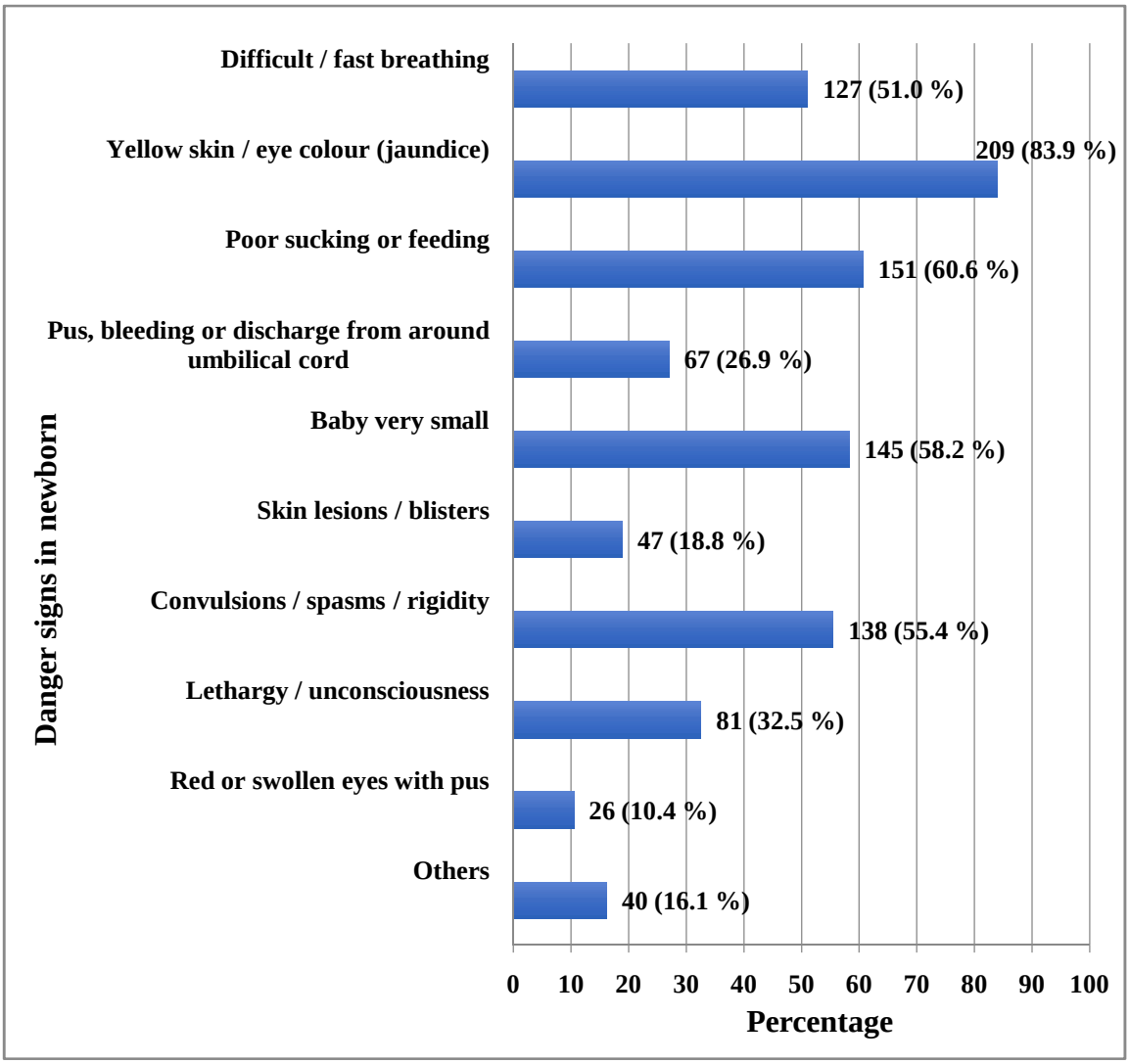
- **Others – High fever – 40 (100 %)**

***Multiple responses obtained.**

Among the 249 study participants who were aware of serious health problems in newborn during first 7 days after delivery, 209 (83.9 %) knew about yellow skin / eye colour (jaundice), 151 (60.6 %) were aware of poor sucking / feeding, 145 (58.2 %) had knowledge about very small baby, 138 (55.4 %) knew about convulsions / spasms / rigidity, 127 (51.0 %) were aware of difficult / fast breathing, 81 (32.5 %)

were aware of lethargy / unconsciousness, 67 (26.9 %) were aware about pus, bleeding or discharge from / around umbilical cord, 47 (18.8 %) knew about skin lesions or blisters, 26 (10.4 %) knew about red / swollen eyes with pus and 40 (16.1 %) knew about other health problems like high fever.

**Graph 9.Distribution of study participants according to knowledge about each serious health problem in newborn during first 7 days after delivery among those who had awareness (n = 249)**




- **Others – High fever – 40 (100 %)**

***Multiple responses obtained.**

**Table 19.Distribution of study participants according to awareness of number of serious health problems in newborn during first seven days after delivery (n = 400)**

| Number of serious health problems | Frequency | Percentage |
|---|---|---|
| < 3 | 223 | 55.7 % |
| ≥ 3 | 177 | 44.3 % |
| **Total** | **400** | **100.0 %** |

Out of the 400 study participants, 233 (55.7 %) were aware of < 3 serious health problems in newborn during first 7 days after deliveryand 177 (44.3 %) were aware of at least 3 serious health problems in newborn during first 7 days after delivery.

**Table 20.Distribution of study participants according to presence of knowledge about basic care of newborn immediately after birth (n = 400)**

| Awareness | Frequency | Percentage |
|---|---|---|
| Present | 308 | 77.0 % |
| Absent | 92 | 23.0 % |
| **Total** | **400** | **100.0 %** |

Among the 400 study participants, 308 (77.0 %) had knowledge about basic care of newborn immediately after birth and 92 (23.0 %) had no knowledge about the same.

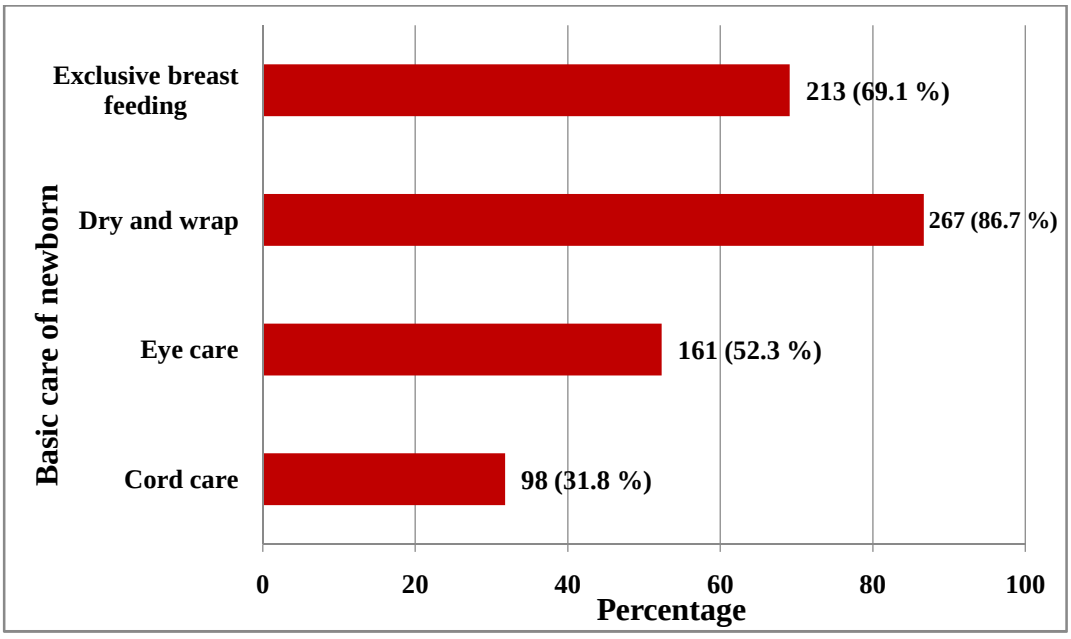
**Table 21.Distribution of study participants according to knowledge of each basic care of newborn immediately after birth (n = 308)**

| Basic care of newborn | Frequency | Percentage |
|---|---|---|
| Exclusive breast feeding | 213 | 69.1 % |
| Dry and wrap | 267 | 86.7 % |
| Eye care | 161 | 52.3 % |
| Cord care | 98 | 31.8 % |

***Multiple responses obtained.**

Among the 308 study participants who had knowledge about basic care of newborn immediately after birth, 267 (86.7 %) were aware of dry and wrap, 213 (69.1 %) were aware of exclusive breast feeding, 161 (52.3 %) knew about eye care and 98 (31.8 %) knew about cord care.

**Graph 10.Distribution of study participants according to knowledge of each basic care of newborn immediately after birth (n = 308)**




***Multiple responses obtained.**

**Table 22.Distribution of study participants according to awareness of number of basic care for newborn immediately after birth (n = 400)**

| Number of serious health problems | Frequency | Percentage |
|---|---|---|
| < 2 | 188 | 47.0 % |
| ≥ 2 | 212 | 53.0 % |
| **Total** | **400** | **100.0 %** |

Among the 400 study participants, 212 (53.0 %) were aware of ≥ 2 basic care for newborn immediately after birth and 188 (47.0 %) were aware of < 2 basic care for newborn immediately after birth.

**Table 23.Distribution of study participants according to whether they have heard the term "birth preparedness" (n = 400)**

| Heard term birth preparedness | Frequency | Percentage |
|---|---|---|
| Yes | 219 | 54.7 % |
| No | 181 | 45.3 % |
| **Total** | **400** | **100.0 %** |

In the present study, 219 (54.7%) had heard the term "birth preparedness" and 181 (45.3%) had not heard the term.

**Table 24.Distribution of study participants according to presence of knowledge of components of birth preparedness (n = 400)**

| Knowledge of components of birth preparedness | Frequency | Percentage |
|---|---|---|
| Present | 311 | 77.7 % |
| Absent | 89 | 22.3 % |
| **Total** | **400** | **100.0 %** |

311 (77.7 %) had knowledge about components of birth preparedness and 89 (22.3 %) had no knowledge about components of birth preparedness.

**Table 25.Distribution of study participants according to knowledge of components of birth preparedness (n = 311)**

| Components of birth preparedness | Frequency | Percentage |
|---|---|---|
| Identify mode of transport | 182 | 58.5 % |
| Save money | 137 | 44.0 % |
| Identify blood donor | 34 | 10.9 % |
| Identify skilled provider | 242 | 77.8 % |
| Others (Nutrition and hygiene) | 14 | 4.5 % |

- **Others – Nutrition – 12 (85.7 %), Hygiene – 9 (64.2 %)**

***Multiple responses obtained.**

Among the 311 participants who had knowledge about BPCR components, 242 (77.8 %) knew about identifying skilled provider, 182 (58.5 %) knew about identifying mode of transport, 137 (44.0 %) knew about saving money, 34 (10.9 %) knew about identifying blood donor and 14 (4.5 %) knew about other things to prepare for birth like nutrition and personal hygiene.

**Table 26.Distribution of study participants according to knowledge of services in the community (n = 400)**

| Community services | Frequency | Percentage |
|---|---|---|
| **Transport** | | |
| Yes | 328 | 82.0 % |
| No | 14 | 3.5 % |
| Don't know | 58 | 14.5 % |
| **Financial** | | |
| Yes | 236 | 59.0 % |
| No | 89 | 22.2 % |
| Don't know | 75 | 18.8 % |
| **Blood donor** | | |
| Yes | 12 | 3.0 % |
| No | 256 | 64.0 % |
| Don't know | 132 | 33.0 % |

Out of 400 study participants, 328 (82.0 %) knew that transport services were provided by community, 236 (59.0 %) knew that financial services were provided by the community and 12 (3.0 %) knew that services to arrange blood donor were provided by the community. 14 (3.5 %) said that transport services were not provided, 89 (22.2 %) said that financial services were not provided and 256 (64.0 %) said that services to arrange blood donor were not provided by the community. 58 (14.5 %) did not know whether transport services were provided by the community, 75 (18.8

%) did not know whether financial services were provided and 132 (33.0 %) did not know whether services for arranging blood donor were provided by the community.

In the present study, 264 (66.0 %) were aware of JananiSurakshaYojana (JSY) and 136 (34.0 %) were not aware of JananiSurakshaYojana (JSY). Among the 264 participants with awareness about JSY, 123 (46.7 %) knew the cash incentive given to the beneficiaries correctly, 27 (10.2 %) did not know correctly the cash incentive given to the beneficiaries and 114 (43.1%) did not know the cash incentive provided under JSY.

**D) <u>Attitudes and Perception</u>**

**Table 27.Distribution of study participants according to Attitude and perception about birth preparedness and complication readiness (n = 400)**

| Attitude and perception | Frequency | Percentage |
|---|---|---|
| **"A woman should plan ahead of time where she will give birth to her baby"** | | |
| Strongly agree | 90 | 22.5 % |
| Agree | 181 | 45.3 % |
| Disagree | 19 | 4.7 % |
| Strongly Disagree***** | 0 | 0.0 % |
| Don't know | 110 | 27.5 % |
| **"A woman should plan ahead of time how she will get to the place where she will give birth"** | | |
| Strongly agree | 115 | 28.8 % |
| Agree | 218 | 54.5 % |
| Disagree | 6 | 1.5 % |
| Strongly Disagree***** | 0 | 0.0 % |
| Don't know | 61 | 15.2 % |

***None of the study participants strongly disagreed to the above statements.**

| | | |
|---|---|---|
| **"It is not necessary for a husband to accompany his wife to antenatal care visits"** | | |
| Strongly agree | 8 | 2.0 % |
| Agree | 155 | 38.7 % |
| Disagree | 140 | 35.0 % |
| Strongly Disagree | 95 | 23.8 % |
| Don't know | 2 | 0.5 % |
| **"When women do not go to a health facility to give birth, it is mainly because it is too expensive"** | | |
| Strongly agree | 18 | 4.5 % |
| Agree | 154 | 38.5 % |
| Disagree | 140 | 35.0 % |
| Strongly Disagree | 7 | 1.8 % |
| Don't know | 81 | 20.2 % |
| **"When women do not go to a health facility to give birth, it is mainly because it is too difficult to get there"** | | |
| Strongly agree | 95 | 23.8 % |
| Agree | 158 | 39.5 % |
| Disagree | 117 | 29.2 % |
| Strongly Disagree | 2 | 0.5 % |
| Don't know | 28 | 7.0 % |
| **"When women do not go to a health facility to give birth, it is mainly because the staffs there do not treat women respectfully"** | | |
| Strongly agree | 1 | 0.2 % |
| Agree | 14 | 3.5 % |
| Disagree | 269 | 67.3 % |
| Strongly Disagree | 30 | 7.5 % |
| Don't know | 86 | 21.5 % |
| **It is not necessary for a husband to accompany his wife when she is giving birth** | | |
| Strongly agree | 38 | 9.5 % |
| Agree | 200 | 50.0 % |
| Disagree | 74 | 18.5 % |
| Strongly Disagree | 81 | 20.2 % |
| Don't know | 7 | 1.8 % |

| | | |
|---|---|---|
| **Giving birth is mostly a woman's matter. Husbands have little to contribute** | | |
| Strongly agree | 7 | 1.7 % |
| Agree | 165 | 41.3 % |
| Disagree | 150 | 37.5 % |
| Strongly Disagree | 73 | 18.2 % |
| Don't know | 5 | 1.3 % |

In the present study, eight statements were used to assess the attitude and perception about BPCR.

Among the 400 pregnant women in the study, 90 (22.5 %) strongly agreed, 181 (45.3 %) agreed, 19 (4.7 %) disagreed that a woman should plan ahead of time where she will give birth to her baby and 110 (27.5 %)replied that they did not know.

In the present study 115 (28.8 %) strongly agreed, 218 (54.5 %) agreed, 6 (1.5 %) disagreed that a woman should plan ahead of time how she will get to the place where she will give birth and 61 (15.2 %) said that they did not know.

With respect to attitude on the statement "It is not necessary for a husband to accompany his wife to antenatal care visits" 8 (2.0 %) strongly agreed, 155 (38.7 %) agreed, 140 (35 %) disagreed, 95 (23.75 %) strongly disagreed to the statement and 2 (0.5 %) answered that they did not know.

Among the participants, 18 (4.5 %) strongly agreed, 154 (38.5 %) agreed, 140 (35.0 %) disagreed, 7 (1.8 %) strongly disagreed to the statement "When women do not go to a health facility to give birth, it is mainly because it is too expensive", and 81 (20.2 %) said that they did not know.

For the statement "When women do not go to a health facility to give birth, it is mainly because it is too difficult to get there", 95 (23.8 %) strongly agreed, 158 (39.5 %) agreed, 117 (29.2 %) disagreed, 2 (0.5 %) strongly disagreed and 28 (7.0 %) replied that they did not know.

Out of the 400 participants, 1 (0.2 %) strongly agreed, 14 (3.5 %) agreed, 269 (67.3 %) disagreed, 30 (7.5 %) strongly disagreed to the statement "When women do not go to a health facility to give birth, it is mainly because the staffs there do not treat women respectfully**"** and 86 (21.5 %) replied that they did not know.

Regarding the attitude on "It is not necessary for a husband to accompany his wife when she is giving birth", 38 (9.5 %) strongly agreed, 200 (50.0 %) agreed, 74 (18.5 %) disagreed, 81 (20.2 %) strongly disagreed to the statement and 7 (1.8 %) said that did not know.

With respect to attitude on "Giving birth is mostly a woman's matter. Husbands have little to contribute", 7 (1.7 %) strongly agreed, 165 (41.3 %) agreed, 150 (37.5 %) disagreed, 73 (18.2 %) strongly disagreed to the statement and 5 (1.3 %) said that did not know.

**E) Personal experience with current pregnancy**

All the 400 (100 %) pregnant women had seen healthcare worker or doctor for antenatal care.

The mean and standard deviation of number of antenatal care visits was 5.4 ± 1.8.

**Table 28.Distribution of study participants according to trimester of first antenatal care(n = 400)**

| First Antenatal care | Frequency | Percentage |
|---|---|---|
| I Trimester | 339 | 84.7 % |
| II Trimester | 61 | 15.3 % |
| **Total** | **400** | **100.00%** |

Among the 400 study participants, first antenatal care was received in the first trimester among 339 (84.7 %) and 61 (15.3 %) had received their first antenatal care in the second trimester.

255 (63.7 %) pregnant women received their first antenatal care by doctor and 145 (36.3 %) received their first antenatal care by Auxillary Nurse Midwife (ANM).

Out of 400 study participants, 238 (59.5 %) had planned to go monthly for antenatal care visits and 162 (40.5 %) had planned to go for antenatal care visits as per medical advice. 208 (52 %) had enrolled under JSY, 158 (39.5 %) had not enrolled under JSY and 34 (8.5 %) did not know whether they had enrolled under JSY or not.

In the present study, 391 (97.7 %) participants said that health worker had advised regarding birth preparedness and 9 (2.3 %) said that no advice was given.

**Table 29.Distribution of study participants according to each advice given by health worker (at least once) (n = 391)**

| Health worker advice | Frequency | Percentage |
|---|---|---|
| Danger signs | 228 | 58.3 % |
| Where to go if danger signs present | 261 | 66.7 % |
| Where to deliver | 326 | 83.3 % |
| Transport | 293 | 74.9 % |
| Money | 139 | 35.5 % |
| Blood donor | 89 | 22.7 % |
| Health professional | 358 | 91.5 % |

***Multiple responses obtained.**

Among the 391 participants who had received health worker advice regarding birth preparedness, 358 (91.5 %) had received advice regarding identifying health professional, 326 (83.3 %) had received advice regarding where to deliver, 293 (74.9 %) had received advice regarding arranging transport, 261 (66.7 %) had received advice regarding where to go if danger signs are observed, 228 (58.3 %) had received advice regarding danger signs, 139 (35.5 %) had received advice regarding saving money and 89 (22.7 %) had received advice regarding arranging blood donor.

**Table 30.Distribution of study participants according to discussion about health worker advice (n = 391)**

| Discussion about health worker advice | Frequency | Percentage |
|---|---|---|
| Husband | 320 | 81.8 % |
| Mother | 173 | 44.2 % |
| Mother – in - law | 212 | 54.2 % |
| Sister | 44 | 13.7 % |

***Multiple responses obtained.**

Among the 391 study participants who received any health worker advice, 320 (81.8 %) had discussed about it with their husband, 212 (54.2 %) had discussed with their mother – in – law, 173 (44.2 %) had discussed with their mother and 44 (13.7 %) had discussed with their sister.

**Table 31.Distribution of study participants according to whether arrangements made for birth of the child (n = 400)**

| Arrangements | Frequency | Percentage |
|---|---|---|
| Yes | 388 | 97.0 % |
| No | 12 | 3.0 % |
| **Total** | **400** | **100.0 %** |

Out of 400 participants, 388 (97.0 %) had made some arrangements for birth of the child and 12 (3.0 %) had not made any arrangements.

**Table 32.Distribution of study participants according to each arrangement made for birth of the child (n = 388)**

| Arrangements | Frequency | Percentage |
|---|---|---|
| Identify transport | 229 | 59.0 % |
| Save money | 259 | 66.7 % |
| Identify blood donor | 53 | 13.6 % |
| Identify skilled provider | 356 | 91.7 % |

***Multiple responses obtained.**

Among the 388 study participants who had made some arrangements for birth preparedness, 356 (91.7 %) had identified skilled provider for delivery, 259 (66.7 %) had saved money to meet the delivery expenses, 229 (59.0 %) pregnant women had

identified transport for emergency / delivery and 53 (13.6 %) had identified blood donor for emergency / delivery.

**Table 33.Distribution of study participants according to planned place of health care delivery (n = 400)**

| Planned health care facility for delivery | Frequency | Percentage |
|---|---|---|
| Government hospital | 155 | 38.7 % |
| Government health Centre | 47 | 11.8 % |
| Private hospital | 138 | 34.5 % |
| Maternity / Nursing home | 18 | 4.5 % |
| Not yet decided | 42 | 10.5 % |
| **Total** | **400** | **100 %** |

Among the 400 participants, 155 (38.7 %) had planned to go to government hospital for delivery, 138 (34.5 %) had planned to go to private hospital for delivery, 47 (11.8 %) had planned to go to government health centre, 18 (4.5 %) had planned to go to maternity / nursing home for delivery and 42 (10.5 %) had not decided the place of delivery at the time of interview.

**Table 34.Distribution of study participants according to final decision maker for place of delivery among who have decided the place of delivery (n = 358)**

| Final decision maker for place of delivery | Frequency | Percentage |
|---|---|---|
| Respondent | 216 | 60.3 % |
| Husband | 291 | 81.3 % |
| Mother | 66 | 18.4 % |
| Mother – in - law | 93 | 25.9 % |
| Father – in - law | 31 | 8.6 % |
| Health professional | 6 | 1.6 % |

***Multiple responses obtained.**

Out of 358 participants who had decided the place of delivery, 216 (60.3 %) made the final decision by themselves, among 291 (81.3 %) decision was made by husband, among 66 (18.4 %) decision was made by mother, among 93 (25.9 %) decision was made by mother – in – law, among 31 (8.6 %) decision was made by father – in – law and among 6 (1.6 %) decision was made by health professional.

**Table 35.Distribution of study participants according to whom they expect will assist with the birth (n = 358)**

| Assist with the birth | Frequency | Percentage |
|---|---|---|
| Doctor | 283 | 79.0 % |
| Nurse | 41 | 11.5 % |
| ANM | 24 | 6.7 % |
| Doctor and Nurse | 10 | 2.8 |
| **Total** | **358** | **100.0 %** |

***Multiple responses obtained.**

Among the 358 participants who had decided the place of delivery, 283 (79.0 %) expected that doctor will assist with their birth, 41 (11.5 %) expected that nurse will assist with their birth, 24 (6.7 %) expected that ANM will assist with their birth and 10 (2.8 %) expected that both doctor and nurse will assist with their birth.

**Table 36.Distribution of study participants according to planned post natal health care facility (n = 400)**

| Planned health care facility for post natal care | Frequency | Percentage |
|---|---|---|
| Government hospital | 166 | 41.5 % |
| Government health centre | 36 | 9.0 % |
| Private hospital | 138 | 34.5 % |
| Maternity / Nursing home | 18 | 4.5 % |
| Not yet decided | 42 | 10.5 % |
| **Total** | **400** | **100.0 %** |

In the present study, 166 (41.5 %) pregnant women had planned to go to government hospital, 138 (34.5 %) had planned to go to private hospital, 36 (9.0 %) had planned to go to government health centre, 18 (4.5 %) had planned to go to maternity / nursing home for post natal care and 42 (10.5 %) had not decided about the facility for post natal care at the time of interview.

**F) Media**

**Table 37.Distribution of study participants according to helpful sources for awareness about BPCR (n = 400)**

| Important sources of awareness about BPCR | Frequency | Percentage |
|---|---|---|
| TV | 50 | 12.5 % |
| Newspaper | 15 | 3.7 % |
| Friends / Neighbours | 102 | 25.5 % |
| Mother | 45 | 11.2 % |
| Mother in law | 48 | 12.0 % |
| Hospitals | 224 | 56.0 % |
| Community health workers | 311 | 77.7 % |
| Booklets | 36 | 9.0 % |
| Internet | 68 | 17.0 % |

***Multiple responses obtained.**

In the present study, 311 (77.7 %) participants said that community health workers were helpful source for awareness about BPCR, 224 (56.0 %) said that hospitals were helpful source, 102 (25.5 %) said that friends / neighbours were helpful source, 68 (17.0 %) considered internet as helpful source, 50 (12.5 %) considered

television as helpful source, mother – in laws were helpful source for 48 (12.0 %) pregnant women, mothers were helpful source for 45 (11.2 %) pregnant women, 36 (9.0 %) said that booklets were helpful source and 15 (3.7 %) considered newspaper as helpful source of awareness about BPCR.

**G) Exposure to media intervention and community activities**

Among the 400 antenatal women in the study, 324 (81.0 %) had exposure to media or community interventions about BPCR in the last 6 months and 76 (19.0 %) did not have exposure in the last 6 months.

**Table 38.Distribution of study participants according to sources of messages received among those exposed to media or community activities regarding BPCR (last 6 months) (n = 324)**

| Sources of message | Frequency | Percentage |
|---|---|---|
| Television | 20 | 6.2 % |
| Written sources | 27 | 8.3 % |
| Friends / Neighbours | 56 | 17.3 % |
| Hospitals | 156 | 48.1 % |
| ANC camps / VHND | 273 | 84.2 % |
| Mother / Mother in law | 86 | 26.5 % |
| Internet | 38 | 11.7 % |

**VHND – Village Health and Nutrition Day**

***Multiple responses obtained.**

Among the 324 participants who had exposure to media or community activities, 273 (84.2 %) had received BPCR messages through antenatal camps, 156 (48.1 %) through hospitals, 86 (26.5 %) received BPCR messages through their mother / mother in law, 56 (17.3 %) through friends / neighbours, 38 (11.7 %) had received BPCR message through internet, 27 (8.3 %) had received message through written sources and 20 (6.2 %) had received BPCR messages through television.

**Table 39.Distribution of study participants according to messages received through each source in the last 6 months (n = 324)**

| Source of message | Frequency | Percentage |
|---|---|---|
| **Television (20)** | | |
| Transport | 17 | 85.0 % |
| Blood donor | 4 | 20.0 % |
| Nutrition | 6 | 30.0 % |
| **Written sources (27)** | | |
| Nutrition | 27 | 100.0 % |
| **Friends / Neighbours (56)** | | |
| Transport | 33 | 58.9 % |
| Money | 20 | 35.7 % |
| Skilled provider | 27 | 48.2 % |
| Nutrition | 15 | 26.7 % |
| **Hospitals (156)** | | |
| Money | 23 | 14.7 % |
| Blood donor | 87 | 55.7 % |
| Skilled provider | 86 | 55.1 % |
| Nutrition | 82 | 52.5 % |
| Personal hygiene | 23 | 14.7 % |
| **ANC camps / VHND (273)** | | |
| Transport | 216 | 79.1 % |
| Money | 145 | 53.1 % |
| Blood donor | 75 | 27.4 % |
| Skilled provider | 229 | 83.8 % |
| Nutrition | 175 | 64.7 % |
| **Mother / Mother in law (86)** | | |
| Transport | 38 | 44.2 % |
| Money | 52 | 60.4 % |
| Nutrition | 42 | 48.8 % |
| **Internet (38)** | | |
| Nutrition | 33 | 86.8 % |
| Personal hygiene | 14 | 36.8 % |

**VHND – Village Health and Nutrition Day**

***Multiple responses obtained.**

In the present study, among the 20 study participants whose source of message was television, 17 (85.0 %) had received message regarding identifying transport, 6 (30.0 %) had received message regarding nutrition and 4 (20.0 %) had received message regarding identifying blood donor.

Among the 27 study participants whose source of message was written sources, all 27 (100.0 %) had received message regarding nutrition.

Out of the 56 study participants whose source of message was friends / neighbours, 33 (58.9 %) had received message regarding identifying transport, 27 (48.2 %) had received message regarding identifying skilled provider, 20 (35.7 %) had received message regarding saving money and 15 (26.7 %) had received message regarding nutrition.

Among the 156 study participants whose source of message was hospitals, 87 (55.7 %) had received message regarding identifying blood donor, 86 (55.1 %) had received message regarding skilled provider, 82 (52.5 %) had received message regarding nutrition, 23 (14.7 %) had received message regarding personal hygiene and 23 (14.7 %) had received message regarding saving money.

Out of 273 study participants whose source of message was antenatal camps, 229 (83.8 %) had received message regarding identifying skilled provider, 216 (79.1 %) had received message regarding identifying transport, 175 (64.7 %) had received message regarding nutrition, 145 (53.1 %) had received message regarding saving money and 75 (27.4 %) had received message regarding identifying blood donor.

Among the 86 study participants who had received message from their mother / mother – in – law, 52 (60.4 %) had received message regarding saving money, 42

(48.8 %) had received message regarding nutrition and 38 (44.2 %) had received message regarding identifying transport.

Out of the 38 participants who had received message through internet, 33 (86.8 %) had received message regarding nutrition and 14 (36.8 %) had received message regarding personal hygiene.

**Table 40.Distribution of study participants according to discussion about the messages received through different sources in last 6 months (n = 324)**

| Discussion about messages received | Frequency | Percentage |
|---|---|---|
| Husband | 304 | 93.8 % |
| Mother | 151 | 46.6 % |
| Mother – in - law | 140 | 43.2 % |
| Sister | 19 | 5.8 % |
| Health worker | 30 | 9.2 % |

***Multiple responses obtained.**

Among the 324 study participants who had received various BPCR messages through media or community activities, 304 (93.8 %) had discussed about the messages with their husband, 151 (46.6 %) had discussed with their mother, 140 (43.2 %) had discussed with their mother – in – law, 30 (9.2 %) had discussed with health worker and 19 (5.8 %) had discussed with their sister.

Out of 324 pregnant women in the study who had received and discussed about BPCR messages, 310 (95.7 %) took some action regarding birth preparedness and 14 (4.3 %) did not take any action after discussion.

**Table 41.Distribution of study participants according to what action regarding birth preparedness made after discussing about the BPCR messages (n = 310)**

| Action taken | Frequency | Percentage |
|---|---|---|
| Arrange transport | 194 | 62.5 % |
| Arrange money | 173 | 55.8 % |
| Arrange blood donor | 45 | 14.5 % |
| Arrange skilled provider | 306 | 98.7 % |
| Others | 202 | 50.5 % |

- **Others – Nutrition – 202 (100 %), Hygiene – 34 (16.8 %)**

***Multiple responses obtained.**

Among the 310 participants who took some action regarding birth preparedness after discussing about the received BPCR messages, 306 (98.7 %) had arranged skilled provider, 194 (62.5 %) had arranged transport, 173 (55.8 %) had saved money, 45 (14.5 %) had arranged blood donor for the birth of the child and 202 (50.5 %) had taken other actions like improving nutrition and personal hygiene during pregnancy.

**Table 42.Distribution of study participants according to levels of knowledge about BPCR (n = 400)**

| Level of BPCR knowledge | Frequency | Percentage |
|---|---|---|
| Poor | 157 | 39.2 % |
| Average | 168 | 42.0 % |
| Good | 75 | 18.8 % |
| **Total** | **400** | **100.0 %** |

Among the 400 study participants, 168 (42.0 %) had moderate knowledge of BPCR, 157 (39.2 %) had poor knowledge of BPCR and 75 (18.8 %) had good knowledge of BPCR.

**Graph 11.Distribution of study participants according to level of BPCR knowledge (n = 400)**

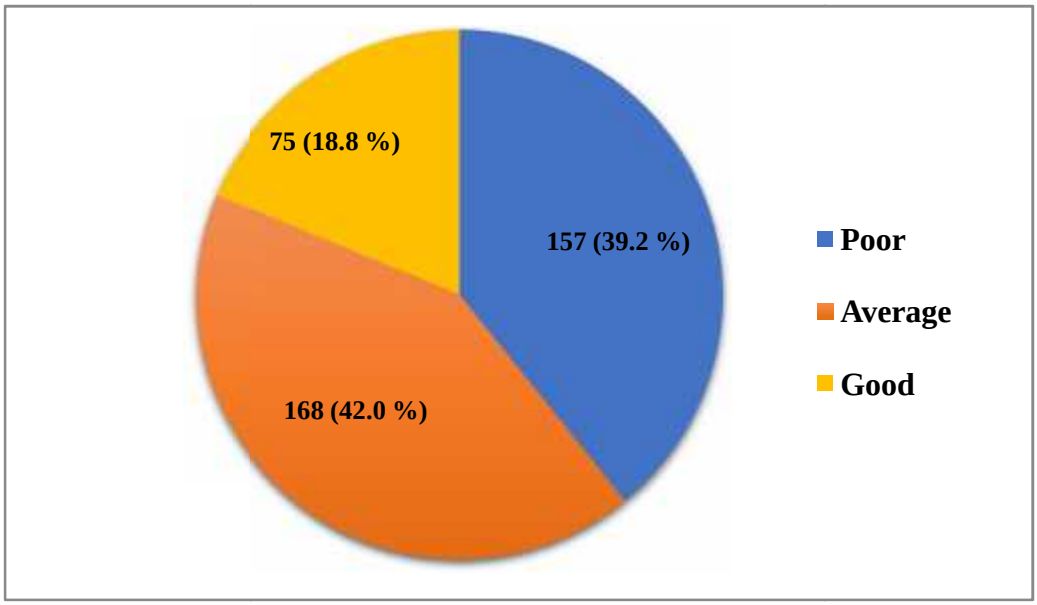



**Table 43.Distribution of study participants according to levels of attitude towards BPCR (n = 400)**

| Attitude towards BPCR | Frequency | Percentage |
|---|---|---|
| Negative | 112 | 28.0 % |
| Positive | 288 | 72.0 % |
| **Total** | **400** | **100 %** |

In the present study, 288 (72.0 %) had positive attitude towards BPCR, 112 (28.0 %) had negative attitude towards BPCR.

**Graph 12.Distribution of study participants according to level of attitude towards BPCR (n = 400)**

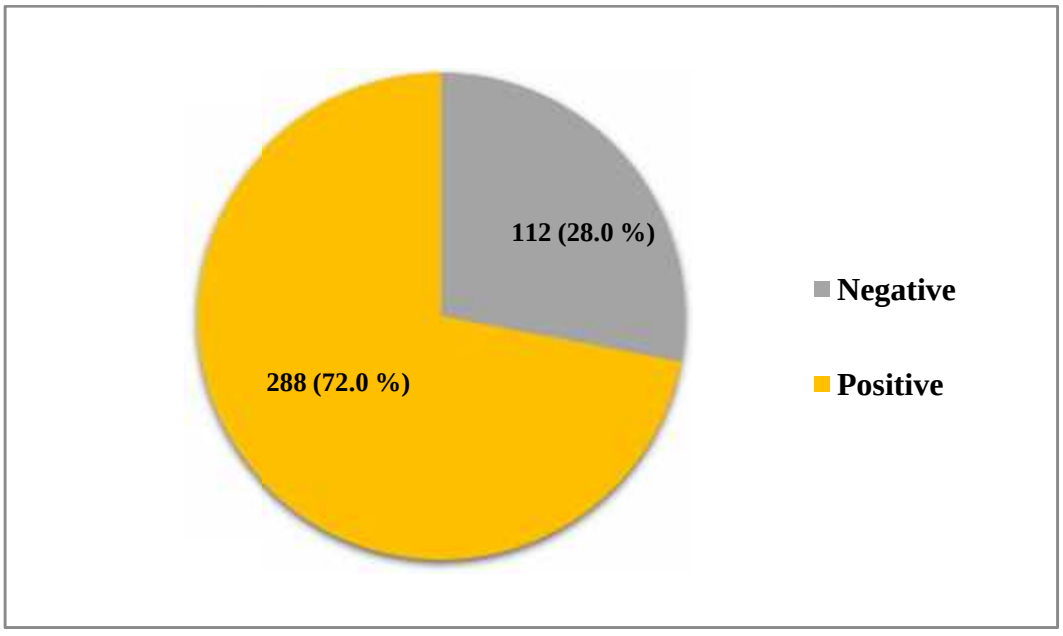



**Table 44.Distribution of study participants according to levels of BPCR practice (n = 400)**

| Level of BPCR Practice | Frequency | Percentage |
|---|---|---|
| Poor | 138 | 34.5 % |
| Good | 262 | 65.5 % |
| **Total** | **400** | **100 %** |

In the present study, 262 (65.5 %) had good BPCR practice, 138 (34.5 %) had poor BPCR practice.

**Graph 13.Distribution of study participants according to level of practice (n = 400)**

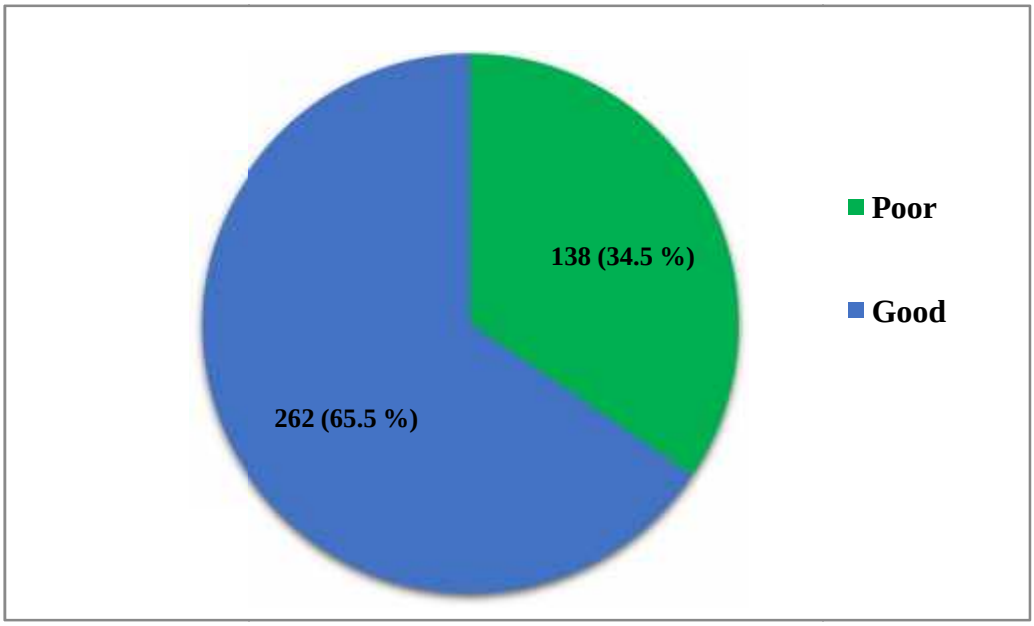



**Table 45.Distribution of participants according to elements / indicators of BPCR index (n = 400)**

| Indicators | Frequency | Percentage |
|---|---|---|
| Knew all three key danger signs during pregnancy | 36 | 9.0 % |
| Knew all four key danger signs during labour and childbirth | 2 | 0.5 % |
| Knew all three key danger signs during first two days after delivery | 23 | 5.8 % |
| Knew all four key danger signs in the newborn (first seven days after delivery) | 46 | 11.5 % |
| Planned to attend at least four antenatal care visits with a skilled provider. | 395 | 98.7 % |
| Attendedfirst ANC visit with a skilled provider during first trimester. | 339 | 84.7 % |
| Planned to give birth with a skilled provider. | 356 | 89.0 % |
| Saved money for childbirth. | 259 | 64.7 % |
| Identified a mode of transport to place of birth. | 229 | 57.2 % |
| Knew that their community has a financial support system. | 236 | 59.0 % |
| Knew that their community has a transportation system. | 328 | 82.0 % |
| Knew that their community has a blood donor system. | 12 | 3.0 % |

Among the 400 pregnant women in the study, 395 (98.7 %) hadplanned to attend at least four antenatal care visits with a skilled provider, 356 (89.0 %) had planned to give birth with a skilled provider, 339 (84.7 %) had attendedfirst ANC visit

with a skilled provider during first trimester, 328 (82.0 %) knew that their community has a transportation system, 259 (64.7 %) had saved money for childbirth, 236 (59.0 %) knew that their community has a financial support system, 229 (57.2 %) had arranged a mode of transport to place of birth, 46 (11.5 %) knew all four key danger signs in the newborn (first seven days after delivery), 36 (9.0 %) knew all three key danger signs during pregnancy, 23 (5.8 %) knew all four key danger signs during first two days after delivery, 12 (3.0 %) knew that their community has a blood donor system and 2 (0.5 %) knew all four key danger signs during labour and childbirth. The BPCR index based on these 12 indicators was found to be 47.1 % which was due to lack of knowledge regarding key danger signs during pregnancy, labour and childbirth, during first two days after delivery and in newborn during first seven days after delivery.

**Graph 14.Distribution of participants according to elements / indicators of BPCR index (n = 400)**

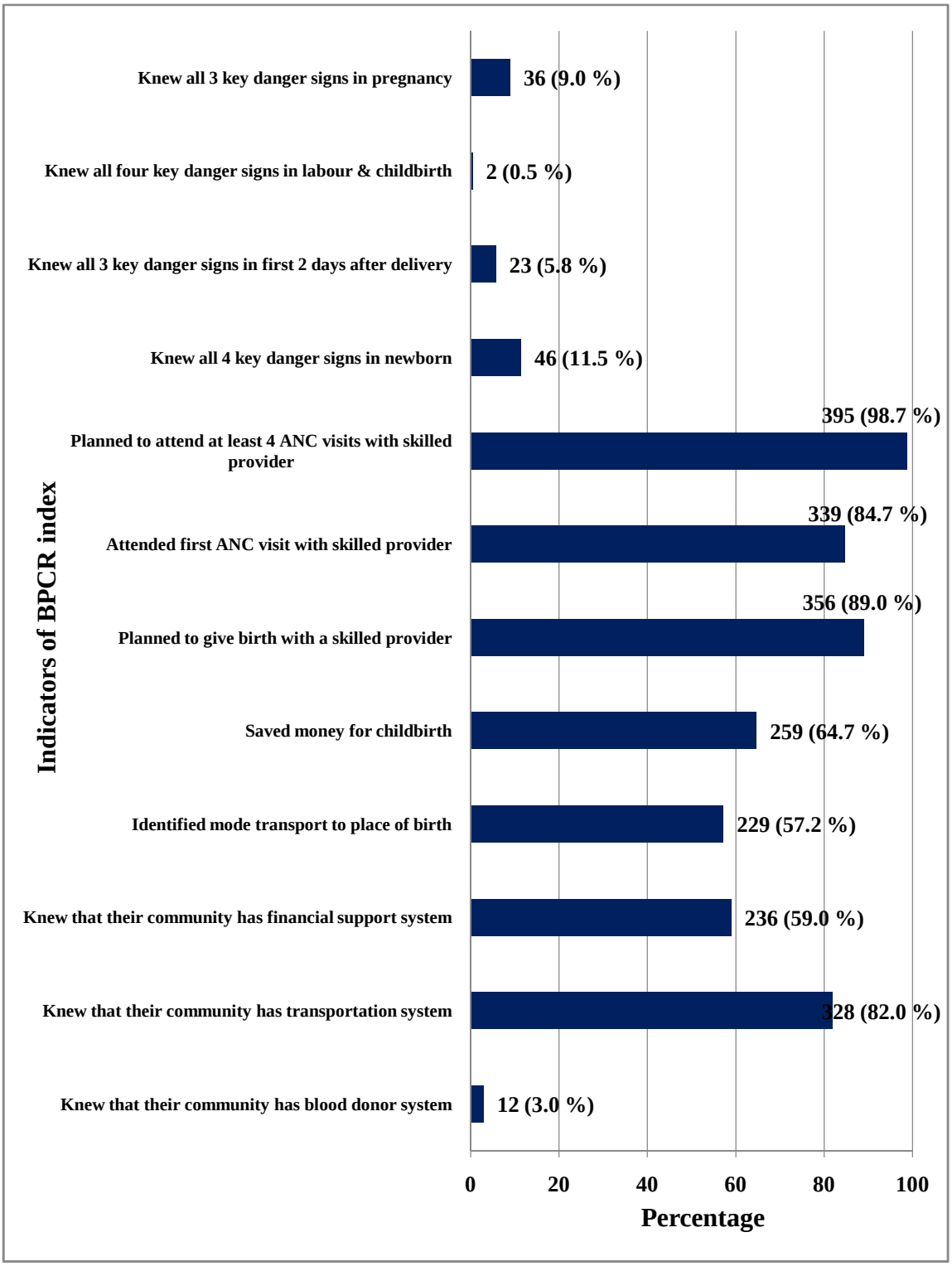



**Table 46.Distribution of participants according to level of BPCR (n = 400)**

| Level of BPCR | Frequency | Percentage |
|---|---|---|
| Less prepared | 104 | 26.0 % |
| Well prepared | 296 | 74.0 % |
| **Total** | **400** | **100.0 %** |

In the present study, the level of BPCR was calculated using BPCR indicators. 296 (74.0 %) were well prepared and 104 (26.0 %) were less prepared with respect to BPCR.

**Graph 15.Distribution of participants according to level of BPCR (n = 400)**

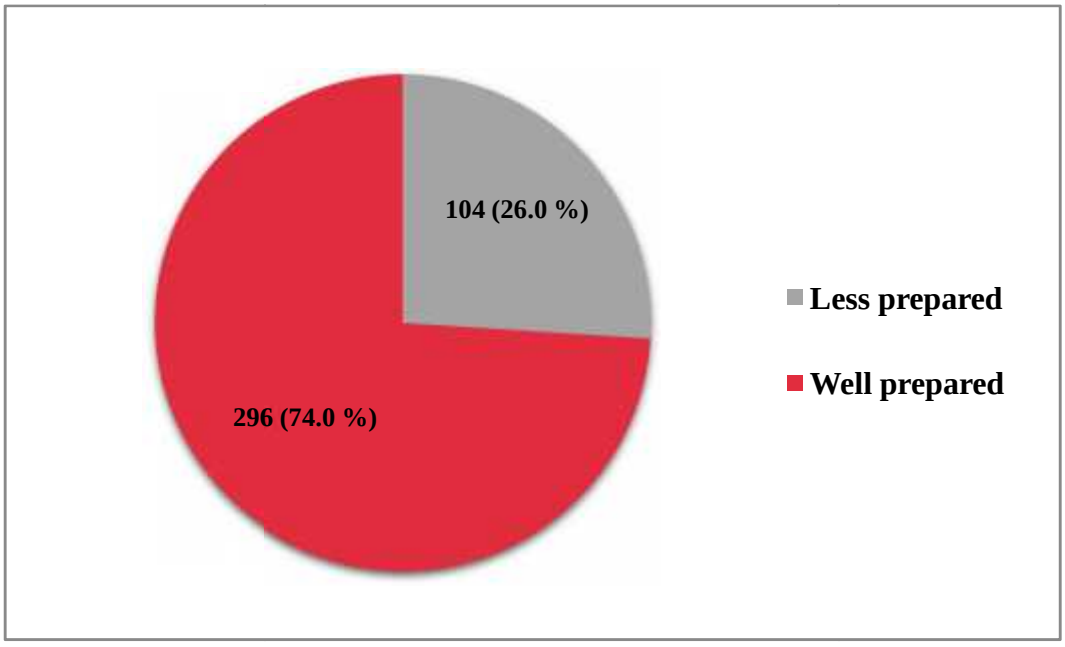


**Table 47.Association between socio – demographic details and level of BPCR (n = 400)**

| Variable | Crude Odds Ratio | 95 % CI | Adjusted Odds Ratio | 95 % CI | P value |
|---|---|---|---|---|---|
| **Age (in years)** | | | | | |
| < 25 | 1 | | 1 | | |
| ≥ 25 | 1.868 | 1.172 – 2.977 | 1.244 | 0.719 – 2.151 | 0.435 |
| **Education** | | | | | |
| Illiterate | 1 | | 1 | | |
| Literate | 1.571 | 0.609 – 4.051 | 1.473 | 0.480 – 4.524 | 0.498 |
| **Occupation** | | | | | |
| Homemaker | 1 | | 1 | | |
| Employed | 3.601 | 0.455 – 28.481 | 3.446 | 0.396 – 29.972 | 0.262 |
| **SES** | | | | | |
| Lower | 1 | | 1 | | |
| Upper & Middle | 1.590 | 1.014 – 2.492* | 1.795 | 1.070 – 3.014 | **0.027** |
| **Gravida** | | | | | |
| Primigravida | 1 | | 1 | | |
| Multigravida | 2.755 | 1.742 – 4.356* | 2.989 | 1.751 – 5.103 | **< 0.001** |
| **Gestational age** | | | | | |
| < 34 weeks | 1 | | 1 | | |
| ≥ 34 weeks | 2.511 | 1.474 – 4.278* | 3.098 | 1.717 – 5.588 | **< 0.001** |
| **First ANC visit** | | | | | |
| First trimester | 5.268 | 2.972 – 9.335* | 6.641 | 3.507 – 12.576 | **< 0.001** |
| Second trimester | 1 | | 1 | | |

Multivariate logistic regression showed that those who belonged to upper and middle SES had higher odds (AOR: 1.795, 95 % CI: 1.070 – 3.014) of being well prepared for birth compared to lower SES and the difference was statistically significant (p = 0.027). Those who were multigravida had higher odds (AOR: 2.989, 95 % CI: 1.751 – 5.103) of being well prepared for birth compared to primigravida and the difference was statistically significant (p < 0.001). Those who were at ≥ 34 weeks of gestational age had higher odds (AOR: 3.098, 95 % CI: 1.717 – 5.588) of being well prepared for birth compared to those who were at < 34 weeks of gestational age and the difference was statistically significant (p < 0.001). Those who availed their first antenatal care in their first trimester had higher odds (AOR: 6.641, 95 % CI: 3.507 – 12.576) of being well prepared for birth compared to those who availed their first ANC in second trimester and the difference was statistically significant (p = < 0.001). Those who were ≥ 25 years of age had higher odds (AOR: 1.244, 95 % CI: 0.719 – 2.15) of being well prepared for birth compared to < 25 years age group and the difference was not statistically significant (p = 0.435). Literates had higher odds (AOR: 1.473, 95% CI: 0.480 – 4.524) of being well prepared for birth compared to illiterates and the difference was not statistically significant (p = 0.498). Those who were employed had higher odds (AOR: 3.446, 95 % CI: 0.396 – 29.972) of being well prepared for birth compared to homemakers and the difference was not statistically significant (p = 0.262).

**Table 48.Association between socio – demographic details and attitude towards BPCR (n = 400)**

| Variable | Crude Odds ratio | 95 % CI | Adjusted Odds ratio | 95 % CI | p value |
|---|---|---|---|---|---|
| **Age (in years)** | | | | | |
| < 25 | 1 | | 1 | | |
| ≥ 25 | 3.111 | 1.921 – 5.037* | 2.507 | 1.509 – 4.164 | < **0.001** |
| **Education** | | | | | |
| Illiterate | 1 | | 1 | | |
| Literate | 1.108 | 0.415 – 2.958 | 1.054 | 0.370 – 3.001 | 0.922 |
| **Occupation** | | | | | |
| Homemaker | 1 | | 1 | | |
| Employed | 3.993 | 0.505 – 31.559 | 3.497 | 0.428 – 28.551 | 0.243 |
| **SES** | | | | | |
| Lower | 1 | | 1 | | |
| Upper & Middle | 1.249 | 0.805 – 1.937 | 1.109 | 0.695 – 1.770 | 0.665 |
| **Gravida** | | | | | |
| Primigravida | 1 | | 1 | | |
| Multigravida | 2.612 | 1.671 – 4.084* | 2.047 | 1.276 – 3.283 | **0.003** |
| **Gestational age** | | | | | |
| < 34 weeks | 1 | | 1 | | |
| ≥ 34 weeks | 1.413 | 0.879 – 2.273 | 1.384 | 0.840 – 2.280 | 0.203 |
| **First ANC visit** | | | | | |
| First trimester | 1.310 | 0.729 – 2.353 | 1.334 | 0.718 – 2.478 | 0.361 |
| Second trimester | 1 | | 1 | | |

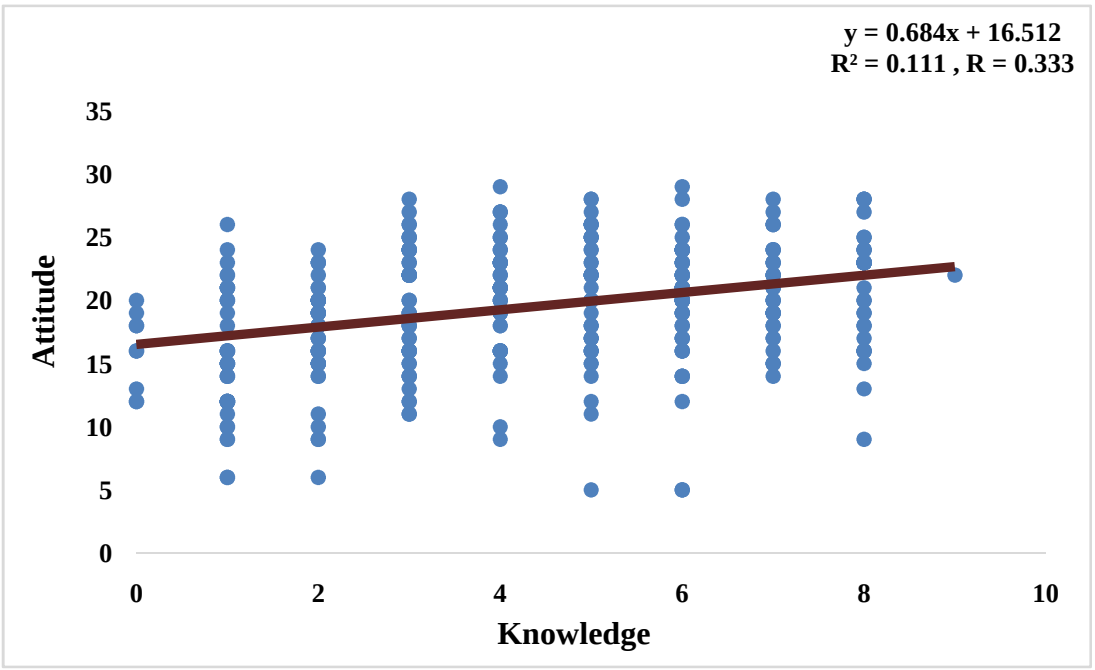
Multivariate logistic regression showed that those who were ≥ 25 years age had higher odds (AOR: 2.507, 95 % CI: 1.509 – 4.164) of having positive attitude towards BPCR compared to those < 25 years age and the difference was statistically significant (p < 0.001). Multigravida had higher odds (AOR: 2.047, 95 % CI: 1.276 – 3.283) of having positive attitude towards BPCR compared to primigravidaand the difference was statistically significant (p = 0.003). Literates had higher odds (AOR: 1.054, 95 % CI: 0.370 – 3.001) of having positive attitude towards BPCR compared to literates and the difference was not statistically significant (p = 0.922). Those who were employed had higher odds (AOR: 3.497, 95 % CI: 0.428 – 28.551) of having positive attitude towards BPCR compared to homemakers and the difference was not statistically significant (p = 0.243). Those who belonged to upper and middle SES had higher odds (AOR: 1.109, 95 % CI: 0.695 – 1.770) of having positive attitude towards BPCR compared to those who belonged to lower SES and the difference was not statistically significant (p = 0.665). Those who were at ≥ 34 weeks of gestational age had higher odds (AOR: 1.384 (95 % CI: 0.840 – 2.280) of having positive attitude towards BPCR compared to those who were at < 34 weeks of gestational age and the difference was not statistically significant (p = 0.203). Those who received their first ANC at first trimester had higher odds (AOR: 1.334, 95 % CI: 0.718 -2.478) of having positive attitude towards BPCR compared to those who availed their first ANC at second trimester and the difference was not statistically significant (p = 0.361).

**Table 49.Correlation between knowledge, attitude and practice scores regarding BPCR (n = 400)**

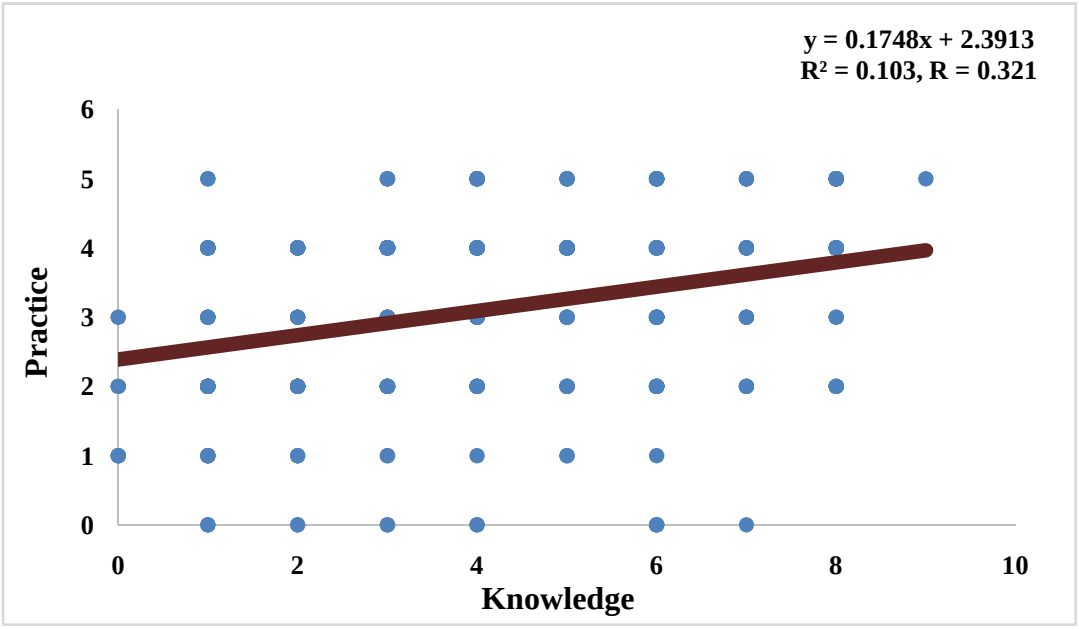
| Variables | Correlation coefficient | p value |
|---|---|---|
| Knowledge VS Attitude | 0.333 | < 0.001 |
| Knowledge VS Practice | 0.321 | < 0.001 |
| Attitude VS Practice | 0.332 | < 0.001 |

In the present study, there was a weak positive correlation between knowledge & attitude (r = 0.333), knowledge & practice (r = 0.321) and attitude & practice (r = 0.333) of the study participants regarding BPCR which were statistically significant (p < 0.001) at 0.01 level of significance.

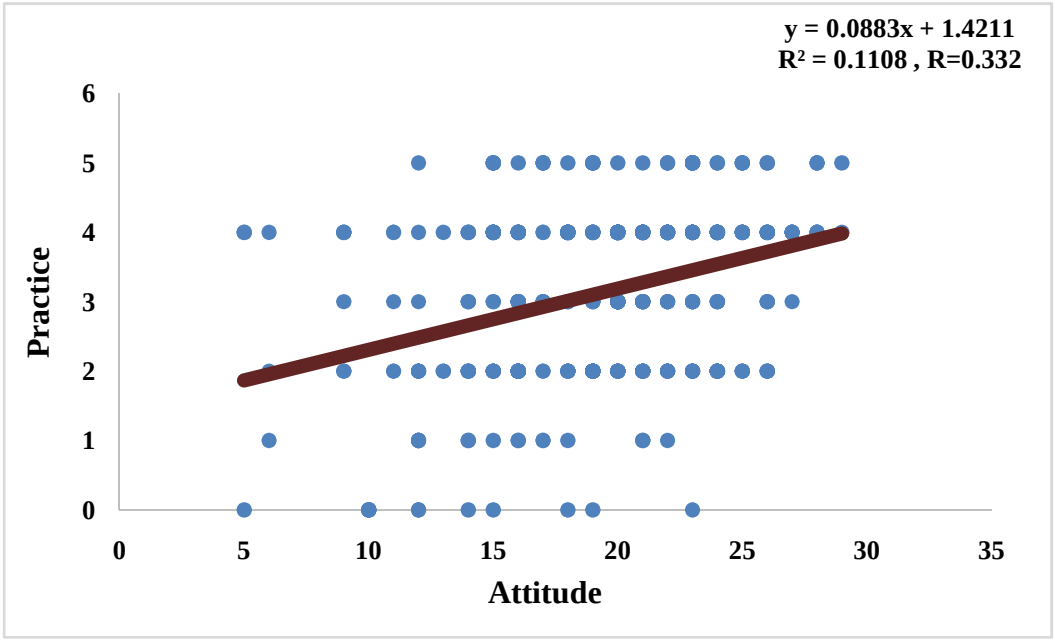
**Graph 16.Correlation between knowledge and attitude scores regarding BPCR (n = 400)**



**Graph 17.Correlation between knowledge and practice scores regarding BPCR (n = 400)**




**Graph 18.Correlation between attitude and practice scores regarding BPCR (n = 400)**



# DISCUSSION

The present study about knowledge, attitude and practices of birth preparedness and complication readiness (BPCR) among rural pregnant women was conducted in the rural field practice areas of Kinaye, Belagavi, attached to the Department of Community Medicine, J. N. Medical College, KAHER, Belagavi. The study population consisted of 400 pregnant women who were more than 28 weeks gestational age.

**Tables 1 & 2: Distribution of study participants according to their age and their religion**

In the present study, 52.5 % pregnant women were in the age group of 21 – 25 years. Majority of the pregnant women in the study (90.5 %) were Hindus.

**Table 3: Distribution of study participants according to their education**

In the present study, 48.8 % had completed secondary level of education and 24.2 % had attended Pre – University College (PUC).

**Tables 4 & 5: Distribution of study participants according to their occupation and socio – economic status**

Most of the participants (97.2 %) in the study were homemakers.

In the present study, more than one – third of the participants (33.3 %) belonged to Class IV socio – economic status and 29.3 % belonged to Class III socio – economic status.

**Tables 6 & 7: Distribution of study participants according to their gravida status and gestational age**

In the present study, 60.5 % were multigravida. 36.0 % of the antenatal women were in 31 – 33 weeks of gestational age.

**Table 8: Distribution of study participants according to awareness about serious health problems during pregnancy**

In the present study, 80.2 % had awareness about the serious health problems during pregnancy. In a study conducted among 100 antenatal mothers in Amritsar in 2014, 71.0 % were aware of the danger signs during pregnancy which was similar to the present study.[33] In a study conducted in 2017 among 110 antenatal women in Chhattisgarh, 25.5 % had awareness about the serious health problems during pregnancy which was low compared to the present study. It was probably because the health workers had focused only on the targets of registration of pregnancy but failed to educate the pregnant women.[24]

**Table 9: Distribution of study participants according to knowledge about each serious health problem during pregnancy among those who had awareness**

In the present study, among 321 pregnant women had awareness about the serious health problems during pregnancy, 88.2 % knew about bleeding, 62.3 % knew about accelerated / reduced fetal movement, 58.9 % were aware of water breaks without labour (PV leak), 47.7 % were aware of loss of consciousness, 38.0 % were aware of headache, 37.7 % knew about high fever, 35.2 % were aware of convulsions, 33.3 % were aware of severe weakness and 25.5 % knew about swollen face / hands. 24.3 % knew about blurred vision, 19.6 % were aware of difficult breathing and

30.5 % knew about other health problems like high blood pressure (30.6 %), severe abdominal pain (61.2 %) and severe vomiting (56.1 %).

In a study conducted in 2017 among 110 pregnant women in Chhatisgarh, 16.4 % were aware of severe abdominal pain, 11.8 % knew about vaginal bleeding, convulsions and fever, 6.4 % knew about swollen face / extremities and 1.8 % knew about severe headache and blurred vision which were lower than the present study. This was probably because majority of the pregnant women preferred home delivery and did not anticipate any danger signs.[24] In another study conducted in 2015 among 400 primigravida in Beed district, Maharashtra, 56.0 % were aware of reduced fetal movement and 32.0 % were aware of pain in abdomen similar to the present study. 30.0 % knew about severe bleeding and leakage per vagina. 7.5 % knew about swollen face / extremities, severe weakness and difficult breathing, 6.0 % knew about headache, 4.0 % were aware of excessive vomiting and fever and 2.0 % were aware of blurring of vision which was lower than the present study. This could be because all were primigravida and the information given during ANC visits by the health care workers was probably inadequate.[22]

**Table 10: Distribution of study participants according to awareness of number of serious health problems during pregnancy**

In the present study, 58.0 % pregnant women were aware of at least three danger signs during pregnancy. A study conducted from 2012 – 2014 in Hyderabad among 600 pregnant women showed that 20.0 % were aware of at least three danger signs during pregnancy. This was low compared to the present study. It could be because the pregnant women believed that everything will be normal and did not want to anticipate any undesirable events in pregnancy.[18]

**Table 11: Distribution of study participants according to presence of awareness about serious health problems during labour and childbirth**

In the present study, 78.2 % antenatal women had awareness about serious health problems during labour and childbirth. In a study conducted among 200 antenatal women in Hyderabad, 67.5 % were aware of danger signs during labour and childbirth similar to the present study. [1]

**Table 12: Distribution of study participants according to knowledge about each serious health problem during labour and childbirth among those who had awareness**

In the present study, among the 313 pregnant women who had awareness about the serious health problems during labour and childbirth, 95.2 % were aware of severe bleeding, 46.9 % knew about convulsions, 38.9 % had knowledge about loss of consciousness, 27.1 % knew about severe headache, 26.2 % were aware of high fever, 11.5 % had awareness about labour lasting more than 12 hours, 0.6 % had knowledge about placenta not delivered 30 minutes after baby and 19.2 % knew about other health problems like absent labour pain (38.3 %) and high blood pressure (61.6 %).

In a study conducted among 200 antenatal women in Hyderabad, 48.5 % of the women knew about convulsions, 39.0 % were aware of high fever, 23.5 % were aware of labour lasting > 24 hours and 16.5 % were aware of placenta not delivered in 30 minutes after delivery which were higher compared to the present study. 36.0 % knew about severe bleeding which was lower than the present study and 33.0 % knew about severe headache similar to the present study. This difference was because the

study was conducted among urban residents and they usually have better access to health information and maternal health services compared to rural residents.[1]

In another study conducted among 100 antenatal women in Nagpur, 50.0 % knew about severe bleeding and 7.0 % knew about high fever and headache which were lower than the present study. 23.0 % were aware of retained placenta and16.0 % were aware of labour lasting > 12 hours which were higher than the present study. This difference could be because of lack of planned strategies regarding awareness of danger signs.[31]

**Table 13: Distribution of study participants according to awareness of number of serious health problems during labour and childbirth**

In the present study, 48.0 % were aware of at least two serious health problems during labour and childbirth. In a study conducted in 2013 among 578 pregnant women in Wolayta zone, Ethiopia, 67.3 % knew at least two serious health problems during childbirth which was higher compared to the present study. This was due to difference in study area, socio – cultural characteristics and implementation of related health program.[41]

**Table 14: Distribution of study participants according to awareness about serious health problems during first two days after delivery**

In the present study, 56.7 % pregnant women had awareness about serious health problems during first two days after delivery. In a study conducted in 2016 among 144 antenatal women in Bengaluru, Karnataka, 38.1 % were aware of serious health problems during puerperium which was low compared to the present study. It could be due to lack of sensitization regarding danger signs by the health workers.[29]

**Table 15: Distribution of study participants according to knowledge about each serious health problem during first two days after delivery among those who had awareness**

In the present study, out of the 227 study participants who were aware about the serious health problems during first two days after delivery, 89.8 % knew about severe bleeding, 48.4 % knew about loss of consciousness, 44.9 % had knowledge about convulsions, 30.4 % were aware of foul smelling discharge, 28.6 % had knowledge about severe headache, 27.3 % knew about high fever, 25.5 % had awareness about severe weakness, 20.3 % were aware of blurred vision, 14.5 % had knowledge about difficult breathing and 13.2 % knew about swollen face / hands.

In a study conducted among 100 antenatal mothers in Amritsar, Punjab, in 2014, 14.0 % knew about severe bleeding as a danger sign during first two days after delivery, 5.0 % were aware of foul smelling vaginal discharge and 1.0 % knew about convulsions and loss of consciousness which were lower than the present study. 31.0 % knew about high fever and 16.0 % knew about other danger signs like severe headache and edema similar to the present study.[33] In another study conducted in 2015 among 527 antenatal women in Uttar Pradesh, 18.4 % knew about severe vaginal bleeding and 5.4 % knew about fever which was lower than the present study.[28] In another study conducted among 360 pregnant women in Lagos, Nigeria, 58.0 % were aware of severe bleeding and 8.1 % knew about loss of consciousness which was low compared to the present study. 55.6 % knew about severe headache, 36.4 % knew about blurred vision and convulsion and 33.9 % knew about swollen hands / face and foul smelling vaginal discharge which was higher than the present study. 30.9 % were aware of high fever similar to the present study.[51]

**Table 16: Distribution of study participants according to awareness of number of serious health problems during first two days after delivery**

In the present study, 29.7 % antenatal women were aware of at least three serious health problems during first two days after delivery.

**Table 17: Distribution of study participants according to awareness about serious health problems in newborn during first seven days after delivery**

In the present study, 62.3 % pregnant women had awareness about serious health problems in newborn during first seven days after delivery. In a study conducted among 200 antenatal women in Hyderabad, 65.0 % were aware of serious health problems in newborn during first seven days after delivery which was similar to the present study.[1]

**Table 18: Distribution of study participants according to knowledge about each serious health problem in newborn during first 7 days after delivery among those who had awareness**

In the present study, among the 249 study participants who were aware of serious health problems in newborn during first seven days after delivery, the most common danger sign (83.9 %) known was yellow skin / eye colour (jaundice), 60.6 % were aware of poor sucking / feeding, 58.2 % had knowledge about very small baby, 55.4 % knew about convulsions / spasms / rigidity, 51.0 % were aware of difficult / fast breathing, 32.5 % were aware of lethargy / unconsciousness, 26.9 % were aware about pus, bleeding or discharge from / around umbilical cord, 18.8 % knew about skin lesions or blisters, 10.4 % knew about red / swollen eyes with pus and 16.1 % knew about other health problems like high fever.

In a study conducted among 100 antenatal mothers in Amritsar in 2014, 62.0 % knew about severe jaundice, 38.0 % knew about poor sucking / feeding, 14.0 % were aware of difficult/fast breathing, 10.0 % knew about lethargy / unconsciousness, 3.0 % knew about pus, bleeding or discharge around umbilical cord and 59.0 % were aware of other danger signs in newborn like fever which were low compared to the present study. 13.0 % were aware of red or swollen eyes with pus and 9.0 % were aware of skin lesions / blisters similar to the present study.[33] In another study conducted among 200 pregnant women in Hyderabad, the most commonly known danger sign (44.0 %) in newborn during first seven days after delivery was yellow colour of skin / eye (jaundice), 38.0 % were aware of convulsion, 36.5 % knew about poor sucking or feeding and 31.0 % knew about difficult or fast breathing which were lower than the present study. 23.5 % were aware of swollen eyes with pus which was higher than the present study. The reasons for the difference could be poor quality and content of health education by the health workers.[1]

**Table 19: Distribution of study participants according to awareness of number of serious health problems in newborn during first seven days after delivery**

In the present study, 44.3 % antenatal women were aware of at least three serious health problems in newborn during first seven days after delivery. A study conducted in 2012 – 2014 among 600 pregnant women in Hyderabad showed that 12.0 % were aware of at least three serious health problems in newborn during first seven days after delivery. This was low compared to the present study probably because of poor content and quality of health education and counseling services by the health – care workers and other sources like TV, internet, etc.[18]

**Table 20: Distribution of study participants according to presence of knowledge about basic care for newborn immediately after birth**

In the present study, 77.0 % pregnant women had knowledge about basic care of newborn immediately after birth.

In a study conducted in 2017 among 384 pregnant women in Belagavi, 68.2 % were aware about basic care of newborn immediately after birth similar to the present study.[19] In another study conducted in 2011 in West Bengal among 117 pregnant women who were in their second / third trimester and 238 women who had delivered recently (within the last 12 months preceding the date of survey), 56.4 % of the pregnant were aware about essential newborn care. This was low compared to the present study. The reasons could be poor health communication with the beneficiaries.[17]

**Table 21: Distribution of study participants according to knowledge of each basic care for newborn immediately after birth**

Among the 308 study participants who had knowledge about basic care of newborn immediately after birth, 267 (86.7 %) were aware of dry and wrap, 213 (69.1 %) were aware of exclusive breast feeding, 161 (52.3 %) knew about eye care and 98 (31.8 %) knew about cord care.

In a study conducted in 2016 among 392 pregnant women in South West Ethiopia, 75.5 % knew about exclusive breast feeding similar to the present study. 16.3 % were aware of cord care and 8.2 % knew about dry and wrap which were lower than the present study. The reason was probably different study setting and poor educational status of the pregnant women.[52]

**Table 22: Distribution of study participants according to awareness of number of basic care of newborn immediately after birth**

In the present study, 53.0 % were aware of at least two basic care of newborn immediately after birth.

**Table 23: Distribution of study participants according to whether they have heard the term "birth preparedness"**

In the present study, 54.7 % pregnant women had heard the term "birth preparedness". In another study conducted in 2017 among 384 antenatal women in Belagavi, 39.3 % had heard the term "birth preparedness" which was different from the present study probably because it was a facility – based study and there was a lack of community based education regarding birth preparedness.[19]

**Table 24: Distribution of study participants according to presence of knowledge of components of birth preparedness**

In the present study, 77.7 % had knowledge about components of birth preparedness. A study conducted in West Bengal in 2011 among 117 pregnant women in their second / third trimester and 238 recently delivered women (within twelve months of the survey) showed that 34.2 % of the pregnant women had knowledge about components of birth preparedness. The knowledge was low compared to the present study. The reason could be lack of adequate health education regarding BPCR components by the health care workers.[17]

**Table 25: Distribution of study participants according to knowledge of components of birth preparedness**

In the present study, 60.5 % knew about identifying skilled provider, 52.6 % knew about identifying mode of transport, 39.6 % knew about saving money, 9.8 % knew about identifying blood donor and 4.0 % knew about other things to prepare for birth like nutrition and personal hygiene.

In a study conducted in West Bengal in 2011 among 117 pregnant women in their second / third trimester and 238 recently delivered women (within twelve months of the survey), 32.5 % knew about saving money, 15.4 % knew about identifying mode of transport and only 1.7 % knew about identifying blood donor. Knowledge regarding saving money and identifying blood donor was similar to the present study. Knowledge regarding identifying transport was low compared to the present study.[17]

**Table 26: Distribution of study participants according to knowledge of services in the community**

In the present study, 82.0 % antenatal women knew that transport services were provided by the community, 59.0 % knew that financial services were provided by the community and 3.0 % knew that services to arrange blood donor were provided by the community.

In a study conducted among 360 pregnant women in Lagos, Nigeria, 4.4 % were aware about financial services in the community, 8.1 % were aware about transport services in the community and 0.8 % knew about blood donor system in the community which was different from the present study. This was probably because

either these services were unavailable or because information about them was not given to the antenatal women.[51]

**Table 27: Distribution of study participants according to Attitude and perception about birth preparedness and complication readiness**

In the present study, 22.5 % pregnant women strongly agreed and 45.3 % agreed that "a woman should plan ahead of time where she will give birth to her baby". 28.8 % strongly agreed, and 54.5 % agreed that "a woman should plan ahead of time how she will get to the place where she will give birth". 35 % disagreed and 23.8 % strongly disagreed to the statement "It is not necessary for a husband to accompany his wife to antenatal care visits". 4.5 % strongly agreed and 38.5 % agreed that "heavy expense is a reason when women do not go to a health facility for delivery". 23.8 % strongly agreed and 39.5 % agreed that "difficulty in reaching the facility is a reason when women do not go to a health facility to give birth". 67.3 % disagreed and 7.5 % strongly disagreed to the statement "When women do not go to a health facility to give birth, it is mainly because the staffs there do not treat women respectfully**"** and 21.5 % replied that they don't know. 18.5 % disagreed and 20.2 % strongly disagreed to the statement "It is not necessary for a husband to accompany his wife when she is giving birth". 37.5 % disagreed and 18.2 % strongly disagreed to the statement "Giving birth is mostly a woman's matter and husbands have little to contribute" and 1.3 % said that they don't know.

In a study conducted in 2012 among 252 pregnant women in Nigeria, 95.2 % strongly agreed / agreed that place of delivery should be planned ahead. 98.2 % strongly agreed /agreed that transport to reach the place of delivery should be planned ahead. This was higher than the present study. 25.4 % strongly agreed /agreed that

their husbands should accompany them for ANC visits. 14.7 % strongly agreed /agreed that cost of care is reason when women do not go to health facility for delivery. 11.2 % strongly agreed / agreed that bad road is a reason when women do not go to health facility for delivery. 7.5 % strongly agreed / agreed that their spouse should be present during delivery. These were lower compared to the present study. 92.5 % strongly disagreed / disagreed / were not sure about whether poor attitude of health care professionals is a reason when women do not go to health facility for delivery which was higher than the present study. 90.5 % strongly disagreed / disagreed / were not sure about whether men contribute little in giving birth which was higher than the present study. The reasons could be different study setting, high antenatal registration and better availability and accessibility to health care facilities.[53]

**Table 28: Distribution of study participants according to trimester of first antenatal care**

In the present study, 84.7 % pregnant women received their first antenatal care in the first trimester. A study conducted in 2017 among 110 pregnant women in Chhattisgarh showed that 71.8 % had availed their first antenatal care in the first trimester similar to the present study.[24] In a study conducted among 126 antenatal women in Mumbai, 81.7 % had received their first antenatal care in the first trimester which was similar to the present study.[25]

**Table 29: Distribution of study participants according to each advice given by health worker (at least once)**

In the present study, among the 391 study participants who had received health worker advice regarding birth preparedness, 91.5 % had received advice regarding identifying health professional, 83.3 % had received advice regarding where to deliver, 74.9 % had received advice regarding arranging transport, 66.7 % had received advice regarding where to go if danger signs are observed, 58.3 % had received advice regarding danger signs, 35.5 % had received advice regarding saving money and 22.7 % had received advice regarding arranging blood donor.

In a study conducted in Cameroon in 2016 among 345 pregnant women who were in ≥ 32 weeks of gestation, 89.3 % had received advice regarding financial arrangements and 86.4 % had received advice regarding where to go if serious health problems are observed which were higher compared to the present study. Similar to the present study, 82.0 % had received advice regarding where to give birth to their baby, 53.0 % had received advice regarding danger signs in pregnancy and 29.6 % had received information regarding arranging blood donor. 47.8 % had received information regarding arranging transport, and 15.7 % advice regarding identifying health worker for delivery which were low compared to the present study. The difference was probably due to different study setting and different elements considered important for birth preparedness.[38]

**Table 30: Distribution of study participants according to discussion about health worker advice (multiple response obtained)**

In the present study, among the 391 study participants who received any health worker advice, 81.8 % had discussed about it with their husband, 54.2 % had discussed with their mother – in – law, 44.2 % had discussed with their mother and 13.7 % had discussed with their sister.

A study conducted among 217 pregnant women (> 28 weeks gestation) or recently delivered women (within last six months) in 2013 in Dakshina Kannada district, Karnataka, 63.6 % of the study participants had discussed about BPCR with their family members.[16]

**Table 31: Distribution of study participants according to whether arrangements made for birth of the child**

In the present study, 97.0 % pregnant women had made some arrangements for birth of the child. In a study conducted among 100 antenatal mothers in Amritsar in 2014, 69.0 % had made some arrangements for delivery.[33]

**Table 32: Distribution of study participants according to each arrangement made for birth of the child (multiple responses obtained)**

In the present study, among the 388 study participants who had made some arrangements for birth preparedness, 91.7 % had identified skilled provider for delivery, 66.7 % had saved money to meet the delivery expenses, 59.0 % pregnant women had identified transport for emergency / delivery and 13.6 % had identified blood donor for emergency / delivery.

In a study conducted in 2015 among 305 pregnant women in Upudi taluk, Karnataka, 100.0 % had arranged transport which was high compared to the present study probably because of higher literacy rate and 99.0 % had identified skilled birth attendant for delivery similar to the present study. 26.2 % pregnant women had saved money to meet delivery expenses and 1.0 % had identified a blood donor which was low compared to the present study. The reason for not saving money was because majority had obtained help from parents, relatives during emergencies, free delivery services in the government hospitals and did not feel the need to save money for pregnancy as it can be utilized for other purposes. Identifying blood donor was neglected and could be due to lack of sufficient knowledge regarding the complications of blood loss during pregnancy or delivery time and their previous pregnancy / delivery did not require blood transfusion.[21]

In another study conducted in 2015 among 527 antenatal women in Uttar Pradesh, 83.0 % had identified skilled birth attendant for delivery similar to the present study. 41.0 % had identified mode of transportation and 45.0 % had saved money to meet delivery expenses which were low compared to the present study. The difference in the finding could be because most of the pregnant women were dependent on Government services for transport and money.[28]

**Table 33: Distribution of study participants according to planned place of delivery**

In the present study, 38.7 % antenatal women had planned to go to government hospital for delivery, 34.5 % had planned to go to private hospital for delivery, 11.8 % had planned to go to government health centre, 4.5 % had planned to

go to maternity / nursing home for delivery and 10.5 % had not decided the place of delivery.

Similar to the present study, a study conducted among 217 pregnant women (> 28 weeks gestation) or recently delivered women (within last six months) in 2013 in Dakshina Kannada district, Karnataka showed that 52.7 % preferred public health sector for delivery and 47.3 % preferred private health sector for delivery.[16]

**Table 34:Distribution of study participants according to final decision maker for place of delivery among who have decided the place of delivery.**

In the present study, out of 358 study participants who had decided the place of delivery, 60.3 % pregnant women made the final decision by themselves, among 81.3 % decision was made by husband, among18.4 % by mother, among 25.9 % by mother – in – law, among 8.6 % by father – in – law and among 1.6 % by health professional.

In a study conducted during 2012 – 2014 in Hyderabad among 600 antenatal women, among 35.3 % the decision on the place of delivery was made by husband, among 15.6 % by in-laws and among 5.5 % by the respondent herself. This was lower than the present study. Among 43.5 % decision was made by parents. This was higher than the present study.[18] In another study conducted among 217 pregnant women (> 28 weeks gestation) or recently delivered women (within last six months) in 2013 in Dakshina Kannada district, Karnataka, 10.3 % were decision maker by themselves which was lower than the present study. Among 89.7 %, the decision maker was husband / others higher than the present study.[16]

**Table 35: Distribution of study participants according to whom they expect will assist with the birth**

In the present study, among the 358 study participants who had decided the place of delivery, 79.0 % expected that doctor will assist with their birth, 11.5 % expected that nurse will assist with their birth, 6.7 % expected that ANM will assist with their birth and 2.8 % expected that both doctor and nurse will assist with their birth.

In a study conducted in Southern Ethiopia in 2007 among 812 pregnant women, 20.1 % expected that health professional will assist with their birth, 31.2 % expected that trained birth attendant will assist with their birth, 13.6 % expected that community health worker will assist with their birth, 24.1 % expected that friends / relatives will assist with their birth, 7.8 % expected that husband's mother will assist with their birth and 3.2 % said that they don't know. This was different from the present study probably because majority had planned to deliver at home and lack of TBAs as referral linkage for escorting women to the health facilities.[54]

**Table 36.Distribution of study participants according to planned post natal health facility**

In the present study, 41.5 % pregnant women had planned to go to government hospital, 34.5 % had planned to go to private hospital, 9.0 % had planned to go to government health centre, 4.5 % had planned to go to maternity / nursing home for post natal care and 10.5 % had not decided about the facility for post natal care.

**Table 37: Distribution of study participants according to helpful sources for awareness about BPCR (multiple responses obtained)**

In the present study, 77.7 % pregnant women said that health workers were helpful source of awareness about BPCR, 56.0 % said that hospitals were helpful source, 25.5 % said that friends / neighbours were helpful source, 17.0 % considered internet as helpful source, 12.5 % considered television as helpful source, 12.0 % pregnant women said that mother – in laws were helpful source, mothers were helpful source for 11.2 % pregnant women, 39.0 % said that booklets were helpful source and 3.7 % considered newspaper as helpful source of awareness about BPCR.

In a study conducted among 60 primigravida (> 37 weeks of gestation) in Odisha, the important sources of information were health professional among 66.7 % participants, 23.3 % received information from friends / relatives and 10.0 % received information through television similar to the present study.[26] In another study conducted in 2015 among 350 antenatal women in Ahmedabad, the important sources of information were health professionals (58.5 %), community health workers (47.1 %), friends and relatives (30.0 %) and media (9.8 %).[20]

**Table 38: Distribution of study participants according to sources of messages received among those exposed to media or community activities regarding BPCR (last 6 months)**

In the present study, among the 324 study participants who had exposure to media or community activities regarding BPCR, the major source was through antenatal camps / VHND (84.2 %) and hospitals (48.1 %).

**Table 39: Distribution of study participants according to messages received through each source in the last 6 months (multiple responses obtained)**

In the present study, among the 20 study participants whose source of message was television, 85.0 % had received message regarding identifying transport. Among the 27 study participants whose source of message was written sources, 100.0 % had received message regarding nutrition. Out of the 56 study participants whose source of message was friends / neighbours, the most common (58.9 %) message received was regarding identifying transport. Among the 156 study participants whose source of message was hospitals, 55.7 % had received message regarding identifying blood donor. Out of 273 study participants whose source of message was antenatal camps / Village Health and Nutrition Day, the most common (83.8 %) message received was regarding identifying skilled provider. Among the 86 study participants who had received message from their mother / mother – in – law, 60.4 % received message regarding saving money. Out of the 38 participants who had received message through internet, 86.8 % had received message regarding nutrition and 36.8 % had received message regarding personal hygiene.

**Table 40: Distribution of study participants according to discussion about the messages received through different sources in last 6 months (multiple responses obtained)**

In the present study, among the 324 study participants who had received various BPCR messages through media or community activities, 93.8 % had discussed about the messages with their husband, 46.6 % had discussed with their mother, 43.2 % had discussed with their mother – in – law, 9.2 % had discussed with health worker and 5.8 % had discussed with their sister.

**Table 41: Distribution of study participants according to what action regarding birth preparedness made after discussing about the BPCR messages (multiple responses obtained)**

In the present study, among the 310 study participants who took some action regarding birth preparedness after discussing about the received BPCR messages, 98.7 % had arranged skilled provider, 62.5 % had arranged transport, 55.8 % had saved money, 14.5 % had arranged blood donor for the birth of the child and 50.5 % had taken other actions like improving nutrition and personal hygiene during pregnancy.

**Table 42: Distribution of study participants according to levels of knowledge about BPCR**

In the present study, 42.0 % had moderate knowledge about BPCR, 39.2 % had poor knowledge about BPCR and 18.8 % had good knowledge of BPCR.

In a study conducted among 60 primigravida (> 37 weeks of gestation) in Odisha, 50.0 % had average knowledge about BPCR, 28.3 % had poor knowledge and 21.7 % had good knowledge about BPCR similar to the present study.[26]

In another study conducted in 2017 among 384 antenatal women in Belagavi, 77.1 % had moderate knowledge about BPCR, 17.2 % had poor knowledge about BPCR and 5.7 % had good knowledge about BPCR. This was different from the present study because it was facility based study and majority of the pregnant women had visited antenatal clinic for approximately 6 to 10 times.[19]

**Table 43: Distribution of study participants according to levels of attitude towards BPCR**

In the present study, 72.0 % pregnant women had positive attitude towards BPCR. In a study conducted in 2012 among 252 pregnant women in Nigeria, 94.4 % of the participants had a positive attitude towards BPCR. This was higher than the present study probably due to different study setting, high antenatal registration and better availability of health care services.[53]

**Table 44: Distribution of study participants according to levels of BPCR practice**

In the present study, 65.5 % had good BPCR practice. In a study conducted in 2015 among 305 pregnant women (in their second and third trimester) in Udupi taluk, Karnataka,51.0 % had good BPCR practice similar to the present study.[21]

**Table 45: Distribution of participants according to elements / indicators of BPCR index**

In the present study, based on 12 indicators, the BPCR index was found to be 47.1 %. In a study conducted among 126 pregnant women in Mumbai, based on seven indicators, the BPCR index was found to be 51.0 % similar to the present study.[25] In a study conducted in 2017 among 110 antenatal women in Chhattisgarh, based on 7 indicators, the BPCR index was found to be 27.8 % which was low compared to the present study. The reasons could be because of low education levels of the pregnant women, their unemployed working status, dependency on family, low socio economic status, ignorance and poor communication between health care workers and the community.[24]

**Table 46: Distribution of participants according to level of BPCR**

In the present study, 74.0 % were well prepared with respect to BPCR. In a study conducted in 2018 among 48 pregnant women (> 24 weeks of gestation) and 48 recently delivered women (within last 12 months) in Odisha, 16.7 % were well prepared which was low compared to the present study. This was probably because of lack of educational activities regarding BPCR by the grass root level workers.[23] In another study conducted in 2014 among 274 pregnant women in Telangana, 54.0 % were well prepared which was lower than the present study.[27]

**Table 47: Association between socio – demographic details and level of BPCR**

In this present study, socio – economic status, gravida status, gestational age and trimester at first antenatal care were significant factors associated with level of BPCR. Those who belonged to upper and middle SES (AOR: 1.795, 95 % CI: 1.070 – 3.014, $p = 0.027$), multigravida (AOR: 2.989, 95 % CI: 1.751 – 5.103, $p < 0.001$), those who were at ≥ 34 weeks of gestational age (AOR: 3.098, 95 % CI: 1.717 – 5.588, $p < 0.001$) and those who availed their first antenatal care in their first trimester (AOR: 6.641, 95 % CI: 3.507 – 12.576, $p < 0.001$) were positively associated with level of BPCR.

In a study conducted in 2014 among 274 pregnant women in Telangana, age > 30 years ($p < 0.001$), educational status of pregnant women ($p = 0.001$), occupational status ($p < 0.002$) and regular antenatal care visits ($p < 0.001$) were significantly associated with well birth preparedness and complication readiness.[27]

In another study conducted in New Delhi, age ($\chi^2 = 5.934$, $p = 0.043$), education ($\chi^2 = 1.652$, $p = 0.037$) and parity of the participants ($\chi^2 = 3.538$, $p = 0.027$)

were significantly associated with their BPCR status.[5] In a study conducted among 371 antenatal women in 2015 in Tumkur, Karnataka, educational status of the pregnant women (p = 0.004) and parity (p = 0.006) were significantly associated with birth preparedness. Those who had completed high school education and women with parity of two were better prepared.[14]

**Table 48: Association between socio – demographic details and attitude towards BPCR**

In the present study, age and gravida status were significant factors associated with attitude towards BPCR. Those who were ≥ 25 years of age (AOR: 2.507, 95 % CI: 1.509 – 4.164, p < 0.001) and multigravida (AOR: 2.047, 95 % CI: 1.276 – 3.283, p = 0.003) were positively associated with attitude towards BPCR. In a study conducted in Nigeria among 252 pregnant women, previous history of pregnancy (F = 4.465, p = 0.040) was significantly associated with attitude towards BPCR.[53]

**Table 49: Correlation between knowledge, attitude and practice scores regarding BPCR**

In the present study, there was a correlation between knowledge and practice (r = 0.321) of the study participants regarding BPCR. It was a weak positive correlation and was found to be statistically significant (p < 0.001) at 0.01 level of significance.

In a study conducted among 100 primigravida in 2014 in Haryana, there was a correlation between knowledge and practice regarding birth preparedness (r = 0.14) similar to the present study. It was a weak positive correlation statistically non – significant (p = 0.16) at 0.05 level of significance [30].

In another study conducted among 60 primigravida (> 37 weeks of gestation) in Odisha, there was a moderate positive correlation between knowledge and practice (r = 0.545) which was significant at 0.01 levels. This was higher than the present study [26].

# CONCLUSION

- Among the 400 rural pregnant women studied, four out of ten pregnant women had moderate knowledge of BPCR.
- Seven out of ten antenatal women had positive attitude towards BPCR.
- More than half of the pregnant women had good BPCR practice.
- Nearly three – fourth of the pregnant women were well prepared for birth.
- Less than one –fourth of the pregnant women had knowledge regarding at least eight key danger signs during pregnancy, labour and childbirth, during first two days after delivery and in the newborn during first seven days after delivery.
- Level of BPCR was associated with upper and middle SES, multigravida, those who were at ≥ 34 weeks of gestational age and those who availed their first antenatal care in their first trimester.
- Attitude towards BPCR was associated with those who were ≥ 25 years of age and multigravida.
- Correlation between knowledge & attitude, knowledge & practice and attitude & practice of the study participants regarding BPCR was weakly positive.

# RECOMMENDATIONS

- **At the individual and family level**

- Both the individual and the family members should be aware of the complications due to blood loss and prior identification of 2 – 3 voluntary compatible blood donors with their contact numbers required for any emergency during delivery should be done to reduce the delay in receiving the adequate and appropriate treatment.
- They should arrange for transport by their own / rented vehicle or through the help of the community services (Gram Panchayats or Self-help groups) well ahead./in advance
- Money needed for any emergency during delivery can be saved through chit funds / self – help groups / Mahila mandals.

- **At the community level**

- The volunteers / NGOs / Panchayat / self - help groups can identify the vehicle providers, blood donors with their contact details in the respective areas and can also provide financial assistance to the pregnant women to assist them during any emergency.

- **At the Primary Health Centre / Sub - centre level**

- Health education programs should be started earlier during antenatal period and those belonging to < 25 years age group, lower socio – economic status and primigravida need to be targeted.
- Awareness programs regarding the government financial and transport schemes (JSY, JSSK, NAS) for the pregnant women should be done regularly during health education and it is necessary to ensure that health education

sessions are conducted with emphasis on the complications of blood loss during pregnancy and child birth and the need for prior arrangements for transport and blood donor.

- Medical Officers of the PHCs should monitor the activities conducted by the grass root level workers (ASHA & ANM) regarding BPCR on a regular basis.
- ASHA / ANM / AWW / TBAs need to be trained periodically regarding BPCR by the Medical Officers.

❖ **At the district level**

- Regular orientation and training programs should be conducted involving the grass root level workers with emphasis on importance of BPCR in both uncomplicated and complicated child birth. Effectiveness of BPCR in reducing the obstetric delays and maternal mortality should be emphasized.
- The health workers at the grass root level need to be trained to identify the key danger signs as mentioned in BPCR and give adequate health education to the pregnant women regarding identification of key danger signs of pregnancy, labour and childbirth, during first two days after delivery and in newborn during first seven days after delivery to reduce the delay in seeking health care.
- Apart from the regular antenatal camps and Village Health and Nutrition Day, other health education methods like television, mobile phones, pamphlets, posters and Mother and Child Protection (MCP) cards can be used effectively to increase the awareness regarding BPCR further.
- Training sessions on BPCR should be given to the undergraduate students, postgraduate students and nursing students so that they can educate the

antenatal women and their family members attending the regular ANC visits at their respective medical / nursing college or health facility.

❖ **At the State level and National level**

- The BPCR component should be an essential part in the antenatal care under RMNCH + A and should be included in the Thai card.
- Monitoring of the BPCR program can be done through the Mother Child Tracking System (MCTS) / RCH portal.
- The MCI / INC should incorporate BPCR in their respective UG / PG curriculum.
- Qualitative research studies like Focus group discussions to find out reasons for lack of awareness and practice of BPCR and intervention studies on different health education methods can be conducted.

# STRENGTHS OF THE STUDY

- It was a community – based study conducted among a sample size of 400 rural antenatal women. Hence, the study results can be generalized.
- A standard questionnaire from Safe Motherhood Population – Based Survey Questionnaire on monitoring of BPCR from John Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) was used for the personal interview with standard cut off scores.
- It is one of the very few studies which included many aspects of BPCR including knowledge, attitude, personal experience during current pregnancy, exposure to media and community interventions regarding BPCR.

# LIMITATIONS OF THE STUDY

- The study was conducted only among antenatal women and did not include the post natal women. Hence, there would have been lack of knowledge of danger signs.
- An experimental study could have been conducted to know the effect of different health education activities and programs to the pregnant women. This was not done in this study due to lack of time.
- No feedback was collected from health care workers.

# SUMMARY

The present study was a community based cross – sectional study conducted to assess the birth preparedness and complication readiness among rural pregnant women. The study was conducted among 400 rural pregnant women who were more than 28 weeks of gestational age in Kinaye, which is the rural field practice area of the Department of Community Medicine, J.N. Medical College, KAHER, Belagavi. The duration of the study was one year from 1st January 2019 to 31st December 2019.

Among the 400 participants, the mean age was 24.3 ± 3.6 years. The age of the participants ranged from 18 – 40 years. Half of the participants (52.5 %) were in the 21 – 25 years age group and 28.8 % were in the age group of 26 – 30 years. Majority (90.5 %) were Hindus. Nearly half of the participants (48.8 %) had completed secondary level of education and 24.2 % had attended up to pre – university college. 97.2 % were homemakers. According to Modified B. G. Prasad's Classification of socio – economic status, 42.5 % belonged to class III and IV. More than half of the pregnant women (60.5 %) were multigravida. More than half of the study participants (66.0 %) were in 28 – 33 weeks of gestational age group.

Majority of the participants (80.2 %) had awareness about the serious health problems during pregnancy, 78.2 % had awareness about serious health problems during labour and childbirth, 56.7 % had awareness about serious health problems during first two days after delivery and 62.3 % had awareness about serious health problems in newborn during first 7 days after delivery. More than three - fourth (77.0 %) of the pregnant women had knowledge about basic care of newborn immediately after birth.

Among 321 participants who had awareness about the serious health problems in pregnancy, the most common danger signs known were bleeding (88.2 %), accelerated / reduced fetal movement (62.3 %) and water breaks without labour / PV leak (58.9 %). The least commonly known danger sign was difficult breathing (19.6 %). Among the 313 pregnant women who had awareness about the serious health problems during labour and childbirth, majority (95.2 %) were aware of severe bleeding. The less commonly known danger signs were labour lasting > 12 hours (11.5 %) and placenta not delivered 30 minutes after baby (0.6 %). Among the 227 participants who were aware about the serious health problems during first two days after delivery, the most common health problem known was severe bleeding (89.8 %) and the least commonly known health problem was swollen face / hands (13.2 %). Among the 249 study participants who were aware of serious health problems in newborn during first 7 days after delivery, majority (83.9 %) knew about yellow skin / eye colour (jaundice), 60.6 % were aware of poor sucking / feeding, 58.2 % had knowledge about very small baby and only 10.4 % knew about red / swollen eyes with pus. Among the 308 study participants who had knowledge about basic care of newborn immediately after birth, majority (86.7 %) were aware of dry and wrap, 69.1 % were aware of exclusive breast feeding and only 31.8 % knew about cord care.

More than half of the participants (58.0 %) were aware of at least three serious health problems of pregnancy, less than half of the pregnant women (48.0 %) were aware of at least two serious health problems of labour and childbirth and only 29.7 % were aware of at least three serious health problems during first two days after delivery. 44.3 % were aware of at least three serious health problems in newborn during first 7 days after delivery and 53.0 % were aware of at least two basic care for newborn immediately after birth.

54.7 % had heard the term “birth preparedness” and 77.7 % had knowledge about components of birth preparedness. Among the 311 participants who had knowledge about BPCR components, majority (77.8 %) knew about identifying skilled provider and only 10.9 % knew about identifying blood donor. Majority of the participants (82.0 %) knew that transport services were provided by the community, 59.0 % knew that financial services were provided by the community and 3.0 % knew that services to arrange blood donor were provided by the community.

Among the 400 antenatal women 22.5 % strongly agreed and 45.3 % agreed that a woman should plan ahead of time where she will give birth to her baby. 28.8 % strongly agreed and 54.5 % agreed that a woman should plan ahead of time how she will get to the place where she will give birth. 23.8 % strongly disagreed and 35.0 % disagreed that it is not necessary for a husband to accompany his wife to antenatal care visits. 4.5 % strongly agreed and 38.5 % agreed that heavy expense is a reason when women do not go to a health facility for delivery. 23.8 % strongly agreed and 39.5 % agreed that difficulty in reaching the facility is a reason when women do not go to a health facility to give birth. 67.3 % disagreed and 7.5 % strongly disagreed that disrespectful treatment of women by the staffs is a reason when women do not go to a health facility to give birth. 18.5 % disagreed and 20.2 % strongly disagreed that it is not necessary for a husband to accompany his wife when she is giving birth. 37.5 % disagreed and 18.2 % strongly disagreed that giving birth is mostly a woman’s matter and husbands have little to contribute.

All the pregnant women (100.0 %) had seen someone for antenatal care. Majority (84.7 %) had received their first antenatal care in the first trimester and 15.3 % had received their first antenatal care in the second trimester. 97.7 % pregnant

women in the study said that health worker had advised regarding birth preparedness. Among the 391 study participants who had received health worker advice regarding birth preparedness, majority (91.5 %) had received advice regarding identifying health professional and least commonly received message was regarding arranging blood donor (22.7 %).

97.0 % of the antenatal women had made some arrangements for birth of the child. Among the 388 pregnant women who had made arrangements for birth preparedness, 91.7 % had identified skilled provider for delivery, 66.7 % had saved money to meet the delivery expenses, 59.0 % pregnant women had identified transport for emergency during delivery and only 13.6 % had identified blood donor for emergency during delivery. Out of 400 pregnant women, 89.5 % had identified the place for delivery and post natal health care facility.

Among the 400 antenatal women in the study, more than three – fourths (81.0 %) had exposure to media or community interventions about BPCR in the last 6 months. The major source of message was through antenatal camps / VHND (84.2 %) and hospitals (48.1 %). The other sources of message were their mother / mother in law (26.5 %), friends / neighbours (17.3 %), internet (11.7 %), written sources (8.3 %) and television (6.2 %). Among the 324 antenatal women who had received BPCR messages through media or community activities, 93.8 % had discussed about the messages with their husband. 310 pregnant women took some action regarding birth preparedness after discussing about the received BPCR messages, of which 98.7 % had arranged skilled provider and only 14.5 % had arranged blood donor for the birth of the child.

Among the 400 pregnant women in the study, 42.0 % had moderate knowledge of BPCR, 39.2 % had poor knowledge of BPCR and 18.8 % had good knowledge of BPCR. Nearly three – fourths (72.0 %) had positive attitude towards BPCR. 65.5 % pregnant women had good BPCR practice. Based on 12 indicators, the BPCR index was found to be 47.1 %. Nearly three – fourth of the pregnant women (74.0 %) were well birth prepared.

Socio – economic status, gravida status, gestational age and trimester at first antenatal care were significant factors associated with level of BPCR. Those who belonged to upper and middle SES (AOR: 1.795, 95 % CI: 1.070 – 3.014, p = 0.027), multigravida (AOR: 2.989, 95 % CI: 1.751 – 5.103, p = < 0.001), those who were at ≥ 34 weeks of gestational age (AOR: 3098, 95 % CI: 1.717 – 5.588, p = < 0.001) and those who availed their first antenatal care in their first trimester (AOR: 6.641, 95 % CI: 3.507 – 12.576, p = < 0.001) were positively associated with level of BPCR. Age group and gravida status were significant factors associated with attitude towards BPCR. Those who were ≥ 25 years of age (AOR: 2.507, 95 % CI: 1.509 – 4.164, p < 0.001) and multigravida (AOR: 2.047, 95 % CI: 1.276 – 3.283, p = 0.003) were positively associated with attitude towards BPCR.

There was a correlation between knowledge & attitude (r = 0.333), knowledge & practice (r = 0.321) and attitude & practice (r = 0.333) of the study participants regarding BPCR. It was weak positive and statistically significant (p < 0.001) at 0.01 level of significance.

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# ANNEXURES

## ANNEXURE I – ETHICAL CLEARANCE LETTER

K.L.E. ACADEMY OF HIGHER EDUCATION AND RESEARCH
(Deemed – to- be- University)
Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category 'A' by MHRD (GoI)
**JAWAHARLAL NEHRU MEDICAL COLLEGE,**
**NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)**
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Fax No. +91 (0)831 – 2470759

**Ref: MDC/DOME/** 26 **Date: 24/11/2018**

To,

**Reg.No.BD0118003.**

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"BIRTH PREPAREDNESS AND COMPLICATION READINESS AMONG RURAL PREGNANT WOMEN – A COMMUNITY BASED CROSS – SECTIONAL STUDY"**, is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

**(Dr. Arathi Darshan)**
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

**(Dr. Roopa M Bellad)**
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

## ANNEXURE II - INFORMED CONSENT

**"Birth Preparedness and Complication Readiness among rural pregnant women - A community based cross – sectional study"**

**Principle investigator: _____**

**Guide: _____**

**Introduction**:

Maternal mortality is a major burden in developing countries. Every day, approximately 830 women around the world die from preventable causes related to pregnancy and childbirth. Maternal mortality is higher in women living in rural areas and among poorer communities. Birth Preparedness and Complication readiness (BPCR) is one of the interventions implemented by World Health Organization to overcome these problems and thus reduce maternal and neonatal mortality. This is a one year study is to assess the knowledge, attitude and practices regarding BPCR in the rural field practice area of Kinaye, Belagavi.

**Objective / Purpose of the study:**

You are being invited to participate in the study to assess the knowledge, attitude, perception and practices of Birth Preparedness and Complication Readiness. The study will be carried out in the rural field practice area of Kinaye at Belagavi.

**Procedures:**

In this study you will have to answer a few predesigned questions about your socio- demography details and about your knowledge, attitude and practices regarding

birth preparedness and complication readiness. The entire procedure may take 20-30 minutes. If you agree to participate, the required information will be collected.

**Possible benefits:**

You will not be benefited individually during this study. If you become aware you can plan for child birth and be prepared for complications and educate others in the community regarding birth preparedness and complication readiness. No risk is involved in this study.

**Incentives:**

You will not be eligible for any kind of monetary benefits or free services by virtue of your participation in the study at PHC, Kinaye or at Dr. PBK Hospital and MRC, Belagavi.

**Possible risks:**

There are no risks involved in this study.

**Cost of participation:**

You will not bear any costs attached to your participation.

**Legal rights:**

By signing this consent form, you are not waiving off any of your legal rights.

**Privacy and Confidentiality:**

The results of the study may be published for scientific purposes. However your personal identity will not be revealed. All information collected will be coded so that no one other than investigator will know your identity.

**Withdrawal from the study:**

Participation in this study is voluntary. If you don't wish to participate in this study, you will not lose benefits to which you are entitled. You can withdraw from the study anytime, if you wish to do so.

**Authorization to present / publish the results:**

The investigator may use the information gathered from this study for presentation in conferences or publication in scientific journals. However your personal identity will not be revealed.

**Questions:**

If you have any questions about rights as a research participant you can contact Dr. (Mrs.) Roopa Bellad Chairperson, Institutional Ethical Committee on Human Subjects Research JNMC, KAHER, Belagavi-590010 and Dr. (Mrs.) N.S Mahantashetti, Principal, JNMC, KAHER, Belagavi-590010 on Phone no: 0831-2471350.

## CONSENT STATEMENT

"I have been explained all the contents of this consent form in my local language and have understood and clarified all my queries about the study to the best of my knowledge. Furthermore I recognize that I have the complete right to withdraw this consent at any point during the study. I understand that the information given by me will be confidential and will be used for research purpose only, further I am aware that the result of this research will be presented/published without disclosing any personal identification of the participants.

I hereby give my voluntary consent for participation in the study. I do sign the informed consent form in front of an eyewitness whom I recognize."

Name and Signature/left thumb impression of the participant:

Name and Signature/left thumb impression of the witness:

Name and Signature of the interviewer:

Date:

Place:

## ANNEXURE III - QUESTIONNAIRE

### A) Socio – demographic information

1. Name
2. Age ( < 15 or > 49, stop )
3. Address
4. What is your religion?

   1. Hindu  2. Muslim  3. Christian  4. Others

5. Have you ever attended school?

   1. Yes  2. No

6. What is the highest grade you have completed?

7. What is your occupation?
8. What is your family income per month?
9. No. of family members
10. Socio – economic status (According to Revised Modified BG Prasad SE classification scale, 2016).

    1. Upper class
    2. Upper middle class
    3. Middle class
    4. Lower middle class
    5. Lower class

11. Have you ever been pregnant in the past?

    1. Yes  2. No

**B) Births and Stillbirths**

12. How many months pregnant are | | | you?

13. Is this your first pregnancy?

1. Yes (go to knowledge Qs) 2. No

14. Have any of your pregnancies resulted in a baby that was born dead (a stillbirth)?

1. Yes 2. No

15. Have any of your pregnancies resulted in a baby that was born alive?

1. Yes 2. No

16. Have any of your pregnancies resulted in abortion?

1. Yes 2. No

**C)Knowledge**

17. In your opinion, can unforeseen problems related to pregnancy occur during any pregnancy or childbirth that could endanger the life of a woman?

1. Yes 2. No 3. Don't know

18. In your opinion, what are some serious health problems that can occur during pregnancy that could endanger the life of a pregnant woman? PROBE: Any others?

1. Bleeding
2. Severe headache
3. Blurred vision
4. Convulsions
5. Swollen face/hands
6. High fever
7. Loss of consciousness
8. Difficulty breathing
9. Severe weakness
10. Accelerated/reduced fetal movement
11. Water breaks without labour
12. Other (Specify)
13. None
14. Don't know

19. In your opinion, what are some serious health problems that can occur during labour and childbirth that could endanger the life of a pregnant woman? PROBE: Any others?

| | |
|---|---|
| 1. Severe bleeding<br>2. Severe headache<br>3. Convulsions<br>4. High fever<br>5. Loss of consciousness<br>6. Labour lasting > 12 hours | 7. Placenta not delivered 30 minutes after baby.<br>8. Other (SPECIFY)<br>9. None<br>10. Don't know |

20. In your opinion, what are some serious health problems that can occur during the first 2 days after birth that could endanger the life of the woman? PROBE: Any others?

| | |
|---|---|
| 1. Severe bleeding<br>2. Severe headache<br>3. Blurred vision<br>4. Convulsions<br>5. Swollen face/hands<br>6. High fever<br>7. Malodorous vaginal discharge | 8. Loss of consciousness<br>9. Difficulty breathing<br>10. Severe weakness<br>11. Other (SPECIFY)<br>12. None<br>13. Don't know |

21. In your opinion, what are some serious health problems that can occur during the first 7 days after birth that could endanger the life of a newborn baby? PROBE: Any others?

| | |
|---|---|
| 1. Difficult or fast breathing<br>2. Yellow skin/eye colour (jaundice)<br>3. Poor sucking or feeding<br>4. Pus, bleeding, or discharge from around the umbilical cord<br>5. Baby very small<br>6. Skin lesions or blisters | 7. Convulsions/ spasms/ rigidity<br>8. Lethargy/unconsciousness<br>9. Red or swollen eyes with pus<br>10. Other (SPECIFY)<br>11. NONE<br>12. Don't know |

22. Could you name some types of basic care that can be provided to a newborn baby immediately after birth?

| | |
|---|---|
| 1. Exclusive breastfeeding<br>2. Dry and wrap<br>3. Eye care | 4. Cord care<br>5. Other (SPECIFY)<br>6. Don't know |

23. Have you ever heard the term "birth preparedness"?

1. Yes 2. No

24. In your opinion, what are some things a woman can do to prepare for birth?

| | |
|---|---|
| 1. Identify mode of transport<br>2. Save money<br>3. Identify blood donor | 4. Identify skilled provider<br>5. Other (SPECIFY) |

25. Does your community provide services to assist women in preparing for birth? For instance, are there: Transportation services for women? Ways to get money to help families pay for birth? Ways to get blood donated during pregnancy or complications? Any other services?

| | YES | NO | DK |
|---|---|---|---|
| a. TRANSPORT | | | |
| b. FINANCIAL | | | |
| c. BLOOD | | | |
| d. OTHER (SPECIFY) | | | |

26. Are you aware of Janani Suraksha Yojana Scheme?

1. Yes 2. No

27. If Yes, How much incentive do you get from government in rural area?

**D) Attitudes and perceptions**

Codes (SA - strongly agree - 01, A – agree - 02, D – Disagree - 03, SD – strongly disagree - 04, DK – Don't know - 9)

28. A woman should plan ahead of time where she will give birth to her baby.

29. A woman should plan ahead of time how she will get to the place where she will give birth.

30. It is not necessary for a husband/partner to accompany his wife to antenatal care visits.

31. When women do not go to a health facility to give birth, it is mainly because it is too expensive.

32. When women do not go to a health facility to give birth, it is mainly because it is too difficult to get there.

33. When women do not go to a health facility to give birth, it is mainly because the staffs there do not treat women respectfully.

34. It is not necessary for a husband/partner to accompany his wife when she is giving birth.

35. Giving birth is mostly a woman's matter. Husbands/partners have little to contribute.

**E) Personal experience with current pregnancy**

36. Have you seen anyone for antenatal care during your current pregnancy?

1. Yes 2. No

37. How many times in total have you received antenatal care during this pregnancy?

| | |
|---|---|

Don't know……

38. How many months pregnant were you when you first received antenatal care for this pregnancy?

| | |
|---|---|
| | |

Don't know/don't remember…….

39. Whom did you first see for a checkup on your current pregnancy?

| **HEALTH PROFESSIONAL** | **OTHER PERSON** |
|---|---|
| • Doctor<br>• Nurse<br>• ANM | • AWW<br>• ASHA<br>• Relative/friend<br>• OTHER (SPECIFY)<br>• DON'T KNOW/DON'T REMEMBER |

40. How many antenatal visits have you planned to go during this pregnancy?

| | |
|---|---|
| | |

Don't know……

41. Have you enrolled in Janani Suraksha Yojana?

1. Yes 2. No

42. During this pregnancy, has a health worker advised you about any of the following at least once?

Danger signs of serious health problems during pregnancy, childbirth, or soon after? Where to go if you had danger signs of serious health problems?

Where you should give birth to your baby? Arrangements for transportation? Arrangements for funds/finances? Arrangements for a blood donor? Arrangements for a health care professional to deliver your child?

| | YES | NO | DK |
|---|---|---|---|
| 1. DANGER SIGNS | | | |
| 2. WHERE TO GO | | | |
| 3. WHERE TO DELIVER | | | |
| 4. TRANSPORT | | | |
| 5. MONEY | | | |
| 6. BLOOD DONOR | | | |
| 7. HEALTH PROF. | | | |

43. Did you speak with anyone outside of a health facility about danger signs of serious health problems during pregnancy, childbirth, or soon after? IF YES: Whom did you speak with?

YES NO DK

Danger signs
1. Husband
2. Mother – in – law
3. Other family member
4. Friend/neighbour
5. Community health worker

44. Did you speak with anyone outside of a health facility about where to go if you had danger signs of serious health problems? IF YES: Whom did you speak with?

YES NO DK

Where to go
1. Husband
2. Mother – in - law
3. Other family member
4. Friend/neighbour
5. Community health worker

45. Did you speak with anyone outside of a health facility about where you should give birth to your baby? IF YES: Whom did you speak with?

YES NO DK

Where to give birth
1. Husband
2. Mother – in - law
3. Other family member
4. Friend/neighbour
5. Community health worker

46. Did you speak with anyone outside of a health facility about arrangements for transportation? IF YES: Whom did you speak with?

YES NO DK

Transport
1. Husband
2. Mother – in - law
3. Other family member
4. Friend/neighbour
5. Community health worker

47. Did you speak with anyone outside of a health facility about arrangements for funds/finances? IF YES: Whom did you speak with?

| | YES | NO | DK |
|---|---|---|---|
| Money | | | |
| 1. Husband | | | |
| 2. Mother – in - law | | | |
| 3. Other family member | | | |
| 4. Friend/neighbour | | | |
| 5. Community health worker | | | |

48. Did you speak with anyone outside of a health facility about arrangements for a blood donor? IF YES: Whom did you speak with?

| | YES | NO | DK |
|---|---|---|---|
| Blood donor | | | |
| 1. Husband | | | |
| 2. Mother – in - law | | | |
| 3. Other family member | | | |
| 4. Friend/neighbour | | | |
| 5. Community health worker | | | |

49. Did you speak with anyone outside of a health facility about arrangements for a healthcare professional to deliver your child? IF YES: Whom did you speak with?

| | YES | NO | DK |
|---|---|---|---|
| Skilled provider | | | |
| 1. Husband | | | |
| 2. Mother – in - law | | | |
| 3. Other family member | | | |
| 4. Friend/neighbour | | | |
| 5. Community health worker | | | |

50. Why have you not seen anyone for antenatal care? (CIRCLE ALL RESPONSES GIVEN).

| | |
|---|---|
| 1. Do not know where to go | 4. No one was there to accompany |
| 2. Health facility too far | 5. No good service |
| 3. Too expensive | 6. Other (SPECIFY) |

51. Have you or your family made any arrangements for the birth of this child?

1. Yes 2. No 3. Don't know

52. Which arrangements have you or your family made for the birth of this child? (CIRCLE ALL RESPONSES GIVEN.) THEN PROBE: Did you [ANY REMAINING ARRANGEMENT]

| | Unprompted | Prompted |
|---|---|---|
| 1. Identify transport | | |
| 2. Save money | | |
| 3. Identify blood donor | | |
| 4. Identify skilled provider | | |
| 5. OTHER (SPECIFY) | | |

53. Where do you plan to give birth to this baby?

**PUBLIC SECTOR**

1. Government hospital
2. Government health centre

**PRIVATE SECTOR**

3. Private hospital
4. Maternity/nursing home

**HOME**

54. Who made the final decision about where you will give birth?

1. NO ONE
2. RESPONDENT
3. RESP. & HUSBAND
4. HUSBAND
5. MOTHER
6. FATHER
7. MOTHER-IN-LAW
8. FATHER-IN-LAW
9. SISTER/SISTER-IN-LAW
10. OTHER MEMBER OF RESP.'S FAMILY
11. OTHER MEMBER OF HUSB.'S FAMILY
12. FRIEND/NEIGHBOUR
13. HEALTH PROFESSIONAL
14. ANM
15. OTHER (SPECIFY)
16. DON'T KNOW

55. Who do you expect will assist you with the birth?

**Health Professional**

1. DOCTOR
2. NURSE
3. ANM

**Other person**

4. AWW
5. ASHA
6. RELATIVE/FRIEND
7. OTHER
8. DON'T KNOW

56. After you give birth, are you planning to have someone to check on your health?

1. Yes 2. No

57. Where do you plan to go to have someone check on your health after you give birth?

**PUBLIC SECTOR**

1. Government hospital
2. Government health centre

**PRIVATE SECTOR**

**3.** Private hospital

4. Other
5. Don't know

**F) Media**

58. Which are the sources that you feel will help you in becoming aware about birth preparedness and complication readiness?

1. RADIO
2. TV
3. CINEMA
4. NEWSPAPER/MAGAZINE
5. FRIENDS/NEIGHBOURS
6. HOSPITALS
7. COMMUNITY HEALTH WORKERS
8. PICTORIAL CARDS /DRAWINGS
9. BOOKLETS
10. OTHER (SPECIFY)

**G) Exposure to media interventions**

59. Have you seen, heard or read any information related to birth preparedness in the past six months?

1. Yes 2. No 3. Don't remember

60. From which source(s) did you see, hear, or read about birth preparedness? (CIRCLE ALL RESPONSES GIVEN). PROBE: Any other sources?

1. RADIO
2. TV
3. WRITTEN SOURCES
4. INTERPERSONAL SOURCES
5. OTHER (SPECIFY)
6. DON'T REMEMBER

61. Can you give me some examples of messages related to birth preparedness that you heard, saw, or read? PROBE: Where did you hear about that? PROBE: Any other messages?

| Source Message | Radio | TV | Written | People | Other |
|---|---|---|---|---|---|
| Transport | Y N | Y N | Y N | Y N | Y N |
| Money | Y N | Y N | Y N | Y N | Y N |
| Blood | Y N | Y N | Y N | Y N | Y N |
| Skilled Provider | Y N | Y N | Y N | Y N | Y N |
| Other | Y N | Y N | Y N | Y N | Y N |

62. Did you discuss these messages with anyone?

1. Yes 2. No 3. Don't remember

63. With whom did you discuss these messages? (CIRCLE ALL RESPONSES GIVEN). PROBE: Anyone else?

1. HUSBAND
2. MOTHER
3. MOTHER-IN-LAW
4. SISTER
5. SISTER-IN-LAW
6. FRIENDS
7. NEIGHBOURS
8. COMMUNITY HEALTH
9. WORKER
10. ANM
11. OTHER (SPECIFY)
12. DON'T REMEMBER

64. Did you do anything or take any action related to birth preparedness after hearing the information?

1. Yes 2. No 3. Don't remember

65. What action(s) did you take? (CIRCLE ALL RESPONSES GIVEN). PROBE: Anything else?

| | |
|---|---|
| 1. Arrange Transportation<br>2. Arrange Money<br>3. Arrange Blood donor | 4. Arrange skilled provider<br>5. Other (specify)<br>6. Don't remember |

**H)Participation in community interventions**

66. Have you participated in any community activities related to birth preparedness in the past six months?

1. Yes 2. No 3. Don't remember

67. Through which activities did you hear about birth preparedness? (CIRCLE ALL RESPONSES GIVEN). PROBE: Any other sources?

| | |
|---|---|
| 1. Community meetings<br>2. Mother's groups | 3. Other (SPECIFY)<br>4. Don't remember |

68. Did you do anything or take any action related to birth preparedness after learning about these topics?

1. Yes 2. No 3. Don't remember

69. What action(s) did you take? (CIRCLE ALL RESPONSES GIVEN). PROBE: Anything else?

| | |
|---|---|
| 1. ARRANGE TRANSPORTATION<br>2. ARRANGE MONEY<br>3. ARRANGE BLOOD DONOR | 4. ARRANGE SKILLED PROVIDER.<br>5. OTHER (SPECIFY)<br>6. DON'T REMEMBER |

## ANNEXURE IV - KEY TO MASTER CHART

**Socio – demographic profile (A to H)**

**A. Serial Number**

**B. Age in years**

**C. Age category**

1 – 18 to 20 years

2 – 20 to 25 years

3 – 25 to 30 years

4 – > 30 years

**D. Religion**

1 – Hindu

2 – Muslim

3 – Christian

**E. Education**

1 – Illiterate

2 – Primary (1 to $5^{th}$)

3 – Secondary (6 to $10^{th}$)

4 – PUC / ITI (11 to $12^{th}$)

5 – Graduate

6 – Post graduate

**F. Occupation**

1 – Homemaker

2 – Self – employees

3 – Non – government employees

**G. Socio – economic status**

1 – Class I 2 – Class II 3 – Class III

4 – Class IV 5 – Class V

**H. Gravida status**

1 – Primigravida

2 – Multigravida

**Births and Stillbirths (I to L)**

**I. Gestational age**

1 – 28 to 30 weeks

2 – 31 to 33 weeks

3 – 34 to 36 weeks

4 – > 36 weeks

**J. Still birth**

0 – Not applicable 1 – Yes 2 – No

**K. Live births**

0 – Not applicable 1 – Yes 2 – No

**L. Abortion**

0 – Not applicable 1 – Yes 2 – No

**Knowledge of danger signs in pregnancy (M to Y)**

**M. Bleeding**

1 – Yes 2 – No

**N. Severe headache**

1 – Yes 2 – No

**O. Blurred vision**

1 – Yes 2 – No

**P. Convulsions**

1 – Yes 2 – No

**Q. Swollen face / hands**

1 – Yes 2 – No

**R. High fever**

1 – Yes 2 – No

**S. Loss of consciousness**

1 – Yes 2 – No

**T. Difficulty breathing**

1 – Yes 2 – No

**U. Severe weakness**

1 – Yes 2 – No

**V. Accelerated / reduced fetal movement**

1 – Yes 2 – No

**W. Water breaks without labour (PV leak)**

1 – Yes 2 – No

**X. Others (actual danger signs)**

2 – No

**Y. Don't know**

1 – Yes 2 – No

**Knowledge of danger signs in labour and childbirth (Z to AH)**

**Z. Severe bleeding**

1 – Yes 2 – No

**AA. Severe headache**

1 – Yes 2 – No

**AB. Convulsions**

1 – Yes 2 – No

**AC. High fever**

1 – Yes 2 – No

**AD. Loss of consciousness**

1 – Yes 2 – No

**AE. Labour lasting > 12 hours**

1 – Yes 2 – No

**AF. Placenta not delivered 30 minutes after baby**

1 – Yes 2 – No

**AG. Others (actual danger signs)**

2 – No

**AH. Don't know**

1 – Yes 2 – No

**Knowledge of danger signs (in first 2 days after delivery) (AI to AT)**

**AI. Severe bleeding**

1 – Yes 2 – No

**AJ. Severe headache**

1 – Yes 2 – No

**AK. Blurred vision**

1 – Yes 2 – No

**AL. Convulsions**

1 – Yes 2 – No

**AM. Swollen face / hands**

1 – Yes 2 – No

**AN. High fever**

1 – Yes 2 – No

**AO. Malodorous vaginal discharge (foul smelling)**

1 – Yes 2 – No

**AP. Loss of consciousness**

1 – Yes 2 – No

**AQ. Difficulty breathing**

1 – Yes 2 – No

**AR. Severe weakness**

1 – Yes 2 – No

**AS. Others (actual danger signs)**

2 – No

**AT. Don't know**

1 – Yes 2 – No

**Knowledge of Newborn danger signs (in first 7 days after birth) (AU to BE)**

**AU. Difficult or fast breathing**

1 – Yes 2 – No

**AV. Yellow skin / eye colour (jaundice)**

1 – Yes 2 – No

**AW. Poor sucking or feeding**

1 – Yes 2 – No

**AX. Infection of umbilical cord**

1 – Yes 2 – No

**AY. Baby very small**

1 – Yes 2 – No

**AZ. Skin lesions or blisters**

1 – Yes 2 – No

**BA. Convulsions / spasms / rigidity**

1 – Yes 2 – No

**BB. Lethargy / unconsciousness**

1 – Yes 2 – No

**BC. Red or swollen eyes with pus**

1 – Yes 2 – No

**BD. Others (actual danger signs)**

2 – No

**BE. Don't know**

1 – Yes 2 – No

**Knowledge of Newborn basic care (BF to BJ)**

**BF. Exclusive breast feeding**

1 – Yes 2 – No

**BG. Dry and wrap**

1 – Yes 2 – No

**BH. Eye care**

1 – Yes 2 – No

**BI. Cord care**

1 – Yes 2 – No

**BJ. Don't know**

1 – Yes 2 – No

**BK. Term 'Birth Preparedness'**

1 – Yes 2 – No

**How to prepare for birth? (BL to BP)**

**BL. Transport**

1 – Yes 2 – No

**BM. Save money**

1 – Yes 2 – No

**BN. Blood donor**

1 – Yes 2 – No

**BO. Skilled provider**

1 – Yes 2 – No

**BP. Others**

2 – No

**Knowledge of community services (BQ to BS)**

**BQ. Transport**

1 – Yes 2 – No 3 – Don't know

**BR. Financial**

1 – Yes 2 – No 3 – Don't know

**BS. Blood donor**

1 – Yes 2 – No 3 – Don't know

**BT. Are you aware of Janani Suraksha Yojana (JSY)?**

1 – Yes 2 – No

**BU. Janani Suraksha Yojana (JSY) government incentive in rural area**

0 – Not applicable

1 – Correct

2 – Incorrect

3 – Don't know

**Attitude and perceptions about BPCR (BV to CC)**

**BV. "A woman should plan ahead of time where she will give birth to her baby"**

1 – Strongly agree

2 – Agree

3 – Disagree

4 – Strongly disagree

9 – Don't know

**BW. "A woman should plan ahead of time how she will get to the place where she will give birth"**

1 – Strongly agree

2 – Agree

3 – Disagree

4 – Strongly disagree

9 – Don't know

**BX "It is not necessary for a husband to accompany his wife to antenatal care visits"**

1 – Strongly agree

2 – Agree

3 – Disagree

4 – Strongly disagree

9 – Don't know

**BY. "When women do not go to a health facility to give birth, it is mainly because it is too expensive"**

1 – Strongly agree

2 – Agree

3 – Disagree

4 – Strongly disagree

9 – Don't know

**BZ. "When women do not go to a health facility to give birth, it is mainly because it is too difficult to get there"**

1 – Strongly agree

2 – Agree

3 – Disagree

4 – Strongly disagree

9 – Don't know

**CA. "When women do not go to a health facility to give birth, it is mainly because the**

**staffs there do not treat women respectfully"**

1 – Strongly agree

2 – Agree

3 – Disagree

4 – Strongly disagree

9 – Don't know

**CB. It is not necessary for a husband to accompany his wife when she is giving birth**

1 – Strongly agree

2 – Agree

3 – Disagree

4 – Strongly disagree

9 – Don't know

**CC. Giving birth is mostly a woman's matter. Husbands have little to contribute**

1 – Strongly agree

2 – Agree

3 – Disagree

4 – Strongly disagree

9 – Don't know

**CD. Have you seen anyone for antenatal care during your current pregnancy?**

1 – Yes 2 – No

**CE. Number of times received antenatal care (actual number)**

**CF. How many months pregnant were you when you first received antenatal care for this pregnancy?(actual value in months)**

**CG. Whom did you first see for checkup for your current pregnancy?**

1 – Doctor 2 – Auxillary Nurse Midwife (ANM)

**CH. Planned ANC visits**

1 – Monthly 2 – As per medical advice

**CI. Have you enrolled in Janani Suraksha Yojana?**

1 – Yes 2 – No 3 – Don't know

**Health worker advice (CJ to CP)**

**CJ. Danger signs**

1 – Yes 2 – No

**CK. Where to go if danger signs present**

1 – Yes 2 – No

**CL. Where to deliver**

1 – Yes 2 – No

**CM. Transport**

1 – Yes 2 – No

**CN. Money**

1 – Yes 2 – No

**CO. Blood donor**

1 – Yes 2 – No

**CP. Health professional**

**Discussion about health worker advice (CQ to CT)**

**CQ. Husband**

0 – Not applicable 1 – Yes 2 – No

**CR. Mother**

0 – Not applicable 1 – Yes 2 – No

**CS. Mother – in – law**

0 – Not applicable 1 – Yes 2 – No

**CT. Sister**

0 – Not applicable 1 – Yes 2 – No

**CU. Have you or your family made any arrangements for the birth of this child?**

1 – Yes 2 – No

**Which arrangements have you or your family made for birth? (CV to CY)**

**CV. Transport**

0 – Not applicable 1 – Yes 2 – No

**CW. Money**

0 – Not applicable 1 – Yes 2 – No

**CX. Blood donor**

0 – Not applicable 1 – Yes 2 – No

**CY. Skilled provider**

0 – Not applicable 1 – Yes 2 – No

**CZ. Planned place of delivery**

1 – Government hospital

2 – Government health centre

3 – Private hospital

4 – Maternity / Nursing home

5 – Not yet decided

**Final decision maker for place of delivery (DA to DF)**

**DA. Respondent**

0 – Not applicable 1 – Yes 2 – No

**DB. Husband**

0 – Not applicable 1 – Yes 2 – No

**DC. Mother**

0 – Not applicable 1 – Yes 2 – No

**DD. Mother – in – law**

0 – Not applicable 1 – Yes 2 – No

**DE. Father – in – law**

0 – Not applicable 1 – Yes 2 – No

**DF. Health professional**

0 – Not applicable 1 – Yes 2 – No

**DG. Whom they expect will assist with the birth?**

0 – Not applicable

1 – Doctor

2 – Nurse

3 - ANM

4 – Doctor and Nurse

**DH. Planned place for Post natal health check up**

1 – Government hospital

2 – Government health centre

3 – Private hospital

4 – Maternity / Nursing home

5 – Not yet decided

**Helpful sources of awareness towards birth preparedness (DI to DO)**

**DI. TV**

1 – Yes 2 – No

**DJ. Newspaper**

1 – Yes 2 – No

**DK. Friends / neighbours**

1 – Yes 2 – No

**DL. Hospitals**

1 – Yes 2 – No

**DM. Community health workers**

1 – Yes 2 – No

**DN. Booklets**

1 – Yes 2 – No

**DO. Others**

1 – Yes 2 – No

**DP. In past 6 months have you heard, seen, read or participated in community activities about birth preparedness?**

1 – Yes 2 – No

**Messages from each source about birth preparedness (DQ to DW)**

**DQ. Television**

0 – Not applicable
1 – Transport
3 – Blood donor
5 - Nutrition
7 – No message received

**DR. Written sources**

0 – Not applicable
5 - Nutrition
7 – No message received

**DS. Friends / neighbours**

0 – Not applicable
1 – Transport
2 – Money
4 – Skilled provider
5 - Nutrition
7 – No message received

**DT. Hospitals**

0 – Not applicable

2 – Money

3 – Blood donor

4 – Skilled provider

5 - Nutrition

6 – Personal hygiene

7 – No message received

**DU. ANC camps / VHND**

0 – Not applicable

1 – Transport

2 – Money

3 – Blood donor

4 – Skilled provider

5 - Nutrition

7 – No message received

**DV. Mother / mother – in – law**

0 – Not applicable

1 – Transport

2 – Money

5 - Nutrition

7 – No message received

**DW. Internet**

0 – Not applicable

5 - Nutrition

6 – Personal hygiene

7 – No message received

**Discussion about messages received in last 6 months (DX to EB)**

**DX. Husband**

0 – Not applicable 1 – Yes 2 – No

**DY. Mother**

0 – Not applicable 1 – Yes 2 – No

**DZ. Mother – in – law**

0 – Not applicable 1 – Yes 2 – No

**EA. Sister**

0 – Not applicable 1 – Yes 2 – No

**EB. Health worker**

0 – Not applicable 1 – Yes 2 – No

**EC. Whether any action taken was taken after discussing about messages received regarding BPCR?**

0 – Not applicable 1 – Yes 2 – No

**What actions were taken after discussing about messages received regarding BPCR? (ED to EH)**

**ED. Arranged transport**

0 – Not applicable 1 – Yes 2 – No

**EE. Arranged money**

0 – Not applicable 1 – Yes 2 – No

**EF. Arranged blood donor**

0 – Not applicable 1 – Yes 2 – No

**EG. Arranged skilled provider**

0 – Not applicable 1 – Yes 2 – No

**EH. Others (actual action taken)**

0 – Not applicable

2 – No

| S.No | Socio demographic profile | | | | | | Births and Still births | | | Knowledge of danger signs in pregnancy | | | | | |

| | | |

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# Introduction

# *Aim and Objectives*

# Review of Literature

# Methodology

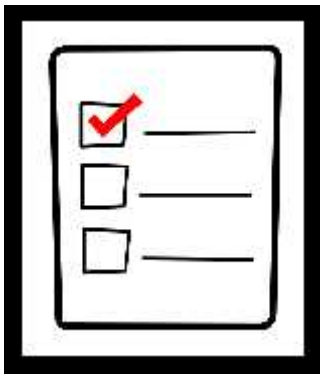
# Results

# Discussion

# Conclusion

# Recommendations

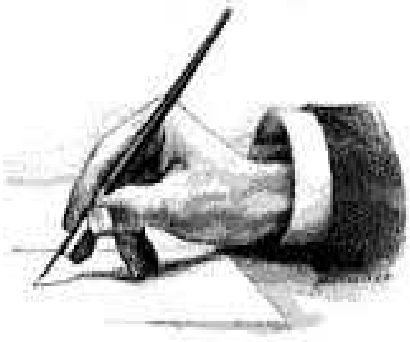
# *Strengths*



# *Limitations*

# Summary

# *Bibliography*



# Annexures