

BIRTH AND EMERGENCIES PLANNING: AN OBSERVATIONAL STUDY AMONG THE PREGNANT AND RECENTLY DELIVERED WOMEN IN CENTRAL GUJARAT, INDIA

Hardikkumar Yagnik¹, Kirtikumar Rahul², Nitesh Patel³, Punit Patel⁴, Mrudula Lala⁵, Pooja Patel⁶

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Corresponding Author:

Dr. Mrudula Lala,
Email: dr.abc2306@gmail.com.

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¹Assistant Professor, Department of Community Medicine, Banas Medical College & Research institute, Palanpur, Gujarat, India.

²Assistant Professor, Department of Community Medicine, Banas Medical College & Research institute, Palanpur, Gujarat, India.

³Assistant Professor, Department of Community Medicine, Banas Medical College & Research institute, Palanpur, Gujarat, India.

⁴Associate Professor, Department of Community Medicine, Banas Medical College & Research institute, Palanpur, Gujarat, India.

⁵Professor, Department of Community Medicine, Dr. M.K. Shah Medical College and Research Center, Ahmedabad, Gujarat, India.

⁶Intern, Department of Community Medicine, Narendra Modi Medical College, LG hospital, Ahmedabad, Gujarat, India.

Abstract

Background: Birth preparedness and complication readiness (BPCR) is strategy to reduce morbidity and mortality related to complication occur during pregnancy, childbirth and post-partum period through planning for normal delivery and preparedness for emergencies anticipated. The study was carried out with aim to assess the birth planning and emergency preparedness among the women of Gandhinagar district, India. **Materials and Methods:** This prospective, observational study was conducted in the Emergency A community based cross-sectional study was done among the recently delivered and pregnant women of urban and rural areas in Gandhinagar district using multi-stage sampling method. For categorical data, frequency and percentage were calculated to know the status of birth planning and complication readiness among the study participants. **Results:** The overall BPCR index found was 43.78% in a study. Compared to rural areas, status of all indicators and BPCR index was high among the women of urban areas of Gandhinagar. **Conclusion:** The current study had found overall low BPCR index among the study participants. Status of only two indicators related to registration of ANC and transportation arrangement were found above 50% among the participants.

INTRODUCTION

Pregnancy puts a woman and her infant at risk of life due to unexpected and unpredictable life-threatening events occur during pregnancy, childbirth and the post-partum period. Globally, though maternal mortality declined by around 38% from 2000 to 2017, total 295000 women died due to complications of pregnancy and childbirth in 2017.^[1] The reported lifetime risk of death due to pregnancy and childbirth was highest 1 in 28 in West and Central Africa to the lowest 1 in 11900 in Western Europe.^[1] As per the Sample registration system, the maternal mortality rate has declined 17 points from 130 in 2014-16 to 113 per 100000 live births in 2016-18 in India.^[2]

Complications during pregnancy, labor and in the post-partum period though unpredictable and sudden

onset, could be averted. 3 delays (1) identifying complications and deciding to seek health care, (2) identifying and approaching health care facility and (3) receiving appropriate and adequate treatment at health care facility by pregnant women, her family and relatives and health care providers are the major obstacles in reducing maternal mortality and morbidity.^[3] Previous studies reported that most of the pregnant women and their caregivers were unaware of early warning signs of pregnancy related complications.^[4,5] Unless some concrete strategies are employed to overcome the above hurdles, the sustainable development goal of achieving a maternal mortality rate of 70 per 100000 live births is far to be achieved. According to WHO estimates, about 300 million women in the developing world who suffer from short to long term illnesses arise from pregnancy or childbirth, inadequacy or lack of

birth and emergency preparedness is one of the several reasons identified.^[6]

Birth Preparedness and Complication Readiness (BPCR), a safe motherhood strategy, was incorporated as part of the antenatal care package of the World Health Organization (WHO) in 2005.^[7] BPCR, by making effective use of community health workers and self-help groups and formal health services, helps pregnant women to minimise risks of morbidity and mortality during pregnancy, labor and post-partum period through early identification of complications, finding health and transportation services, and seeking adequate and effective treatment in time.

Previous studies in India reported that knowledge about the danger signs during pregnancy ranged from 21-54% among antenatal women, while awareness regarding danger signs during the post-partum period was 9-67% in recently delivered women.^[8-10] Transportation was identified among the 29-63% of pregnant women. 9-11 An overall reported BPCR index from various parts of India was 34-67%.^[9,10,12-15]

The present study was conducted with the objective to find the status of BPCR among pregnant and recently delivered women in Gandhinagar district, Gujarat.

MATERIALS AND METHODS

A cross-sectional study was carried out among the pregnant and recently delivered women during 2016-2017 in the Gandhinagar district of Gujarat. A pregnant woman of 2nd and 3rd trimester and recently delivered women within the last 12 months preceding the starting date of the survey, living permanently in study areas were included in the study.

The estimated sample size was 400, taking reported average prevalence (p) of BPCR index 50% from the previous study, relative precision 20% of p and design effect 2 at level of significant 5%.¹⁶ The final derived sample size was 420, considering the non-response rate 5%. A ratio of 50% was maintained while selecting pregnant and recently delivered women from urban and rural areas. Thus, 105 pregnant and recently delivered women each from urban and rural areas were studied.

There was total of 5 urban health centres (UHC) in Gandhinagar municipal corporation areas. 3 Anganwadi centres (AWC) were selected randomly from each UHCs for study to cover 42 women (21 pregnant and recently delivered women each) from each UHC. Thus, total of 15 AWCs was visited for data collection from 210 women in urban. In rural areas, 1 primary health centre (PHC) was selected randomly from each taluka of the Gandhinagar

district. 7 AWCs from each selected PHC were identified by lottery method. Thus, total 21 AWCs were visited to cover 210 women (5 pregnant and recently delivered women each) for data collection.

Women were interviewed at a household setting with prior consent using pretested semi-structured questionnaire to collect information about socio-demography and details regarding antenatal care, preparedness of delivery, transportation, blood donor, expenses and emergency care, knowledge of danger signs of pregnancy, child birth and after delivery, and post-natal care.

BPCR index, calculated by set of 7 indicators, has been developed by Johns Hopkins Bloomberg School of Public Health.^[17] The indicators are quantifiable and expressed in percentages of women having specific characteristics. BPCR indicators collect information regarding knowledge of women regarding danger signs during pregnancy, delivery and the post-partum period, antenatal visit by a skilled person, delivery by a skilled birth attendant, planning for transportation and saving money for childbirth, knowledge of cash and transport assistance available under Janani Suraksha Yojana (JSY). Data were entered in Microsoft Excel and analysed in Epi Info software version 7.2 available on CDC Atlanta, USA. Frequency and percentage were calculated for categorical data to know the status of BPCR among the women between rural and urban areas.

RESULTS

Table 1 showed that the majority of studied women (38.81%) were from 25-29 age group, while women less than 20 and more than 35 years of age shared an equal almost proportion 5.23% (22) and 4.58% (19) respectively. 89% of women were Hindu. Nearly half 47.62% of study participants had studied up to primary schooling, while 6.9% of women were illiterate and 11.19% of women were graduates. Husband of 42.14% women had secondary and higher secondary level schooling. Only 0.71% of husband of women were illiterate. 56.19% of women were doing a job. 56.67% of women were living in a joint family. As per socio-economic classification, a higher proportion of women were from class 4 (26.9%) while women from class 1 and class 5 status were about equal proportion 15.48% and 14.76%, respectively.

As shown in table 2, compared to rural participants, all the indicators and overall BPCR index was higher in urban women. Indicators related to registration of ANC in first trimester and identified transport mechanisms for delivery and emergency were found to be better than others.

Table 1: Distribution of participants as per socio-demographic variables

Variable	Pregnant women (N=210) n(%)	Recently delivered women (N=210) n(%)
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Age structure		
< 20	15(7.14)	7(3.33)
20 – 24	70(33.33)	77(36.67)
25 – 29	72(34.29)	91(43.33)
30 – 34	35(16.66)	34(16.20)
≥ 35	18(8.58)	1(0.47)
Religion		
Hindu	188(89.52)	186(88.57)
Muslim	22(10.48)	23(10.95)
Others	0	1(0.48)
Educational Status of women		
Illiterate	18(8.57)	11(5.24)
Up to primary	115(54.76)	85(40.48)
Secondary and higher secondary	55(26.20)	89(42.38)
Graduate and above	22(10.47)	25(11.9)
Educational Status of women's husband		
Illiterate	1(0.48)	2(0.95)
Up to primary	56(26.68)	50(23.81)
Secondary and higher secondary	87(41.42)	90(42.86)
Graduate and above	66(31.42)	68(32.38)
Occupation		
Housewife	90(42.86)	94(44.76)
Working /job	120(57.14)	116(55.24)
Type of family		
Nuclear	102(48.57)	80(38.1)
Joint	108(51.43)	130(61.9)
Socioeconomic class		
Class 1	28(13.33)	37(17.62)
Class 2	42(20)	41(19.52)
Class 3	35(16.67)	62(29.52)
Class 4	65(30.95)	48(22.86)
Class 5	40(19.05)	22(10.48)

Table 2: Status of BPCR indicators among the study participants

BPCR Indicators	Rural n (%) N=210	Urban n(%) N =210	Total
Registration of ANC within 1 st trimester	121 (57.62)	135 (64.29)	256 (60.95)
Identify skilled birth attendant	65 (30.9)	115 (54.8)	180 (42.85)
Identified transport	143 (68.1)	158 (75.2)	301 (71.66)
Identified blood donor	37 (17.6)	53 (25.2)	90 (21.43)
Awareness of three key danger sign of pregnancy	66 (31.43)	82 (39.05)	148 (35.23)
Awareness of four key danger sign of labor	83 (39.52)	97 (46.19)	180 (42.85)
Awareness of three key danger sign of post-partum	78 (37.14)	108 (51.43)	186 (44.28)
Awareness of four key danger sign of newborn	73 (34.76)	92 (43.81)	165 (39.28)
Awareness of four key component of essential newborn care	91 (43.33)	102 (48.57)	193 (45.95)
Awareness of govt. financial assistance scheme	81 (38.57)	88 (41.90)	169 (40.23)
Awareness of govt. transport scheme	75 (35.71)	80 (38.1)	155 (36.90)
BPCR INDEX	434.68/1183 (39.51%)	528.54/11101 (48.05%)	481.61/11183 (43.78%)

DISCUSSION

Universal access to skilled birth attendance and timely identification and management of obstetrics complications is crucial to survival of mothers. BPCR is considered to be useful and practically easy to administer for reducing the maternal morbidity and mortality by preventable causes by educating the women about danger signs of pregnancy and childbirth and helping to create a supportive and safe environment for the delivery and to take immediate action in case of emergencies. In the present study, the overall BPCR index was 43.78% and it was high in urban (48.05%) participants than rural (39.51%). A comparable finding was observed in previous studies done in Delhi, Madhya Pradesh and Odisha.^[9,12,16] 60.95% of study participants had registered for Antenatal care (ANC) withing 12 months. A higher proportion

for ANC registration in the first trimester was observed in studies done by Rajesh et al (97.3%) and Khyati et al (75.6%), while a previous study done in Delhi (42.9%) and West Bengal (50.4%) reported lower proportion than current study.^[8,12,13,18] less than half (42.85%) of participants of the current study had identified skilled birth attendants which was very lower than the proportion found in previous studies done in Odisha (83.3%) and Karnataka (99%).^[9,19] 71.66% of women in the present study identified the mean of transportation to a health care facility for delivery and emergencies. While previous studies reported a much lower proportion than the current study for identified transport mechanisms.^[9,12,18] Compared to previous studies done in Delhi and South Karnataka, the current study found a higher proportion of participants who had identified blood donors for emergencies.^[14,20]

A knowledge about obstetrics danger signs among pregnant women and relatives is pivotal in deciding the health seeking behaviour and utilization of skilled health services. In the present study, less than half (40%) of studied women were aware of three or more danger signs during pregnancy, child birth, and post-partum period. A study done in Odisha reported about 10% of women aware of danger signs during pregnancy and less than 5% knew about danger signs during labour and post-partum.^[9] Similar finding to the Odisha study was observed by Viswanathan, et al. in Western Maharashtra. More women were being aware of danger signs during pregnancy than labour and post-partum period.^[10] It indicates poor health care provider's poor sensitization of participants as all pregnant women registered were provided mother child protection card depicting six danger signs with partograph. This required training of community level health care providers to counsel effectively pregnant women during ANC visit. An awareness about danger signs among the newborn was found in about 39.28% of study participants. The previous reported awareness about danger signs in newborn was about 20.8% by Kar M et al. and 9.3% by Viswanathan et al.^[9,10] 45.95% of studied women were aware of the four essential components of newborn care.

An awareness among the participants regarding cash assistance scheme under Janani Suraksha Yojana or other government scheme was 40.23% in current study. Previous studies done by Kar M et al. (70.8%) and Rajesh P et al. (60%) reported higher awareness about cash assistance scheme, while Bhilwar et al. (20%) found low knowledge regarding schemes compared to present study.^[8,9,14] 36.9% of women in present study were being aware about transport assistance under JSY. A comparable awareness regarding transport assistance to current study was observed in Karnataka (36.39%) and Western Maharashtra (36.3%).^[8,10] JSY and a like schemes are promoted as increased awareness about it leads to an increase in ANC visits, institutional delivery, and skilled attendance at birth, resulting in a safe mother and child at the end.^[21]

CONCLUSION

The present study showed low BPCR index among the study participants. Except for identified transport means and ANC registration within first trimester, all other indexes were below 50%. So, community-level grass-root workers are trained and encouraged to educate the pregnant women who came for ANC visits about the components of BPCR and help women to make a plan for safe delivery and emergency.

Limitation

Recall bias had been encountered while interviewing recently delivered women up to 1 year prior to start of study.

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Ethical Approval: As it was observational study based on primary information collected from participants with prior informed consent, there was no need of ethical permission.

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