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Original Research Article

A study on birth preparedness and complication readiness in the field practice area of RHTC of a tertiary care establishment in Central India

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ABSTRACT

Background: Every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself or to her infant. Birth preparedness and complication readiness is a strategy that encourages pregnant women, their families, and communities to effectively plan for births and deal with emergencies, if they occur. Objectives were to study the Knowledge of Birth Preparedness & Complication Readiness among the study subjects in the field practice area of RHTC of a tertiary care establishment in Central India.
Methods: This cross-sectional study was carried out from January 2016 to June 2017 in the field practice area of RHTC of a tertiary care establishment in Central India. In the study d 420 women were included as per criteria. Data was recorded in the predesigned and pre tested proforma and were analysed by using SPSS V.20 software.
Results: Out of the total 420 mothers, 75% belonged to the age group 20-25 years. Maximum study subjects (33.1%) belonged to General Category while 23.1% of mothers were Schedule Caste. Maximum mothers (70%) were homemakers, the rest were occupied in various capacities. The BPCR index overall was 49.86, with 85% institutional deliveries; ANC visits initiation at 68%. General awareness shows certain gaps which needs attention of health care workers.
Conclusions: Lack of awareness about possible complications during the time of pregnancy, that of time of delivery or post-natal period was observed while interviewing the mothers.

Keywords: Birth preparedness and complication readiness, Danger signs, India, Pregnancy, Safe motherhood

INTRODUCTION

Maternal mortality is a substantial burden in many developing countries. Globally, more than 40% of pregnant women may experience acute obstetric problems. The World Health Organization (WHO) estimates that 300 million women in the developing world suffer from short-term or long-term morbidities brought about by pregnancy and childbirth. Most of maternal deaths occur in the developing world.[1] With 214 maternal deaths per 100,000 live births, it remains a major public-health challenge in India (SRS).[2] Majority of maternal deaths occur during labor, delivery, and within 24 hours post-partum. Apart from medical causes, there are numerous interrelated socio-cultural factors which delay care-seeking and contribute to these deaths. Care-seeking is delayed because of the delay in Identifying the complication, deciding to seek care, Identifying and reaching a health facility, and

receiving adequate and appropriate treatment at the health facility.[3]

Every mother has the right to have an unfathomable euphoria when an infant is set on the arms. However, for several women in India this moment has become scary.[4] Worldwide estimate of maternal death is around 2,95000 in 2017.[5] Common factors influencing maternal mortality in developing countries are lack of institutional delivery, inadequate birth preparedness, poor competence of healthcare providers, lacunae in emergency obstetric services at facilities and weak referral systems.[6-9] Birth preparedness and complication readiness focuses on two components, planning for a normal birth and getting prepared for any emergency to come. This in turn also promotes timely utilisation of skilled maternal and neonatal care.[10,11] This strategy has been approved globally as essential components of safe motherhood program.[12] Complication readiness ensures to provide antenatal women knowledge on all obstetric complications. So that, the women will be able to recognise the complication at the earliest and seek care from qualifies health care providers at the facility.[13]

In many sectors of the world due to cultural beliefs and inadequate awareness no action/preparation are taken prior to delivery. Many women do not know to recognise danger signs of complications, due to which there is delay in timely intervention in terms of getting organised for arranging money, transport and reaching appropriate referral facility.[14-16] There is limited number of comprehensive studies to assess the knowledge of antenatal mothers on birth preparedness and complication readiness in the southern part of India. Hence the current study was undertaken to access the knowledge of Birth preparedness & complication readiness among the study subjects in the field practice area of RHTC of a tertiary care establishment in Central India.

METHODS

The present study entitled "a study on birth preparedness & complication readiness in the field practice area of RHTC of a tertiary care establishment in Central India" was conducted among women residing in the rural field practice area of Index Medical College, Hospital and Research Centre, in Indore City of Madhya Pradesh state and Gram Morodhat in Indore District.

Type and duration of study

This cross-sectional study was carried out from January 2016 to June 2017 in the field practice area of RHTC of A tertiary care establishment in Central India.

Inclusion criteria

The study was restricted to pregnant (3rd Trimester) female population or women who had delivered within past three months during the course of the study.

Exclusion criteria

Study subjects not willing to participate. Persons who were seriously ill. Mothers with children more than three months of age and Women in 1st and 2nd Trimester of Pregnancy.

Parameters studied

Screening for lifestyle diseases was carried out along with basic blood investigation for all the ladies to rule out Anaemia, Dyslipidaemia, Type II Diabetes Mellitus, Hypertension & Thyroid diseases.

Sample size

Based on a previous study in Indore city[14], the prevalence of BPCR is 47.8% with 95% confidence interval and absolute error of 10%; using the formula;

$$Z2pq/e2$$

where Z=1.96, p= prevalence, q=1-p, e = absolute error, the sample size came out to be ≈419. So, 420 study subjects fulfilling the inclusion criteria were selected for the study.

Techniques

Interview of the study subjects and review of relevant records. Data was collected from the mother herself (mainly), husband or any senior responsible member of the family

Birth preparedness and complication readiness (BP/CR) index

JHPIEGO in the manual 'Monitoring birth preparedness and complication readiness, tools and indicators for maternal and new born health' establishes a set of indicators, called "Birth Preparedness and Complication Readiness (BP/CR) Index", for each of the six levels: the individual woman, her family, the community, the health facility, the provider and the policy maker. It also provides a comprehensive set of tools for deriving these indicators and tracking process. In this study BPCR index at individual level was derived from 12 different indicators with some modifications.

Data collection and analysis plan

The selected individual study women were interviewed using pre-designed pre-tested schedule at their households. Before interviewing them, the nature and purpose of the study was briefed and were assured about the confidentiality of their information. Informed consent was obtained from each and every study subjects. Descriptive statistics was done using standard statistical software. Subgroup analysis was carried out, chi square test, student t test. P value <0.05 was considered as significant.

Data analysis

Data was recorded in the predesigned and pre tested proforma and were analysed by using SPSS V.20 software.

RESULTS

Present community based cross sectional study carried out from January 2016 to June 2017 in the Field Practice Area of RHTC of a tertiary care establishment in Central India.

Table 1: Distribution of study subjects according to age and caste (n=420).

Parameters	N	%
Age (years)		
<20	38	9
20-25	315	75
>25	67	16
Caste		
General	139	33.1
Scheduled caste	97	23.1
Scheduled tribe	47	11.2
OBC	137	32.6

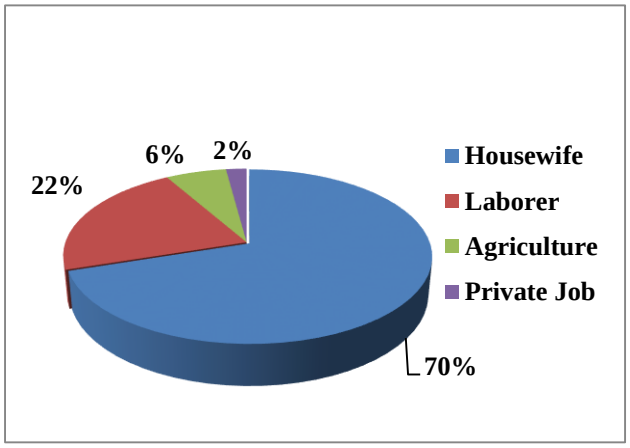

Figure 1: Distribution of study subjects according to occupation (n=420).

Table 2: Distribution of study subjects according to their Socio-economic status (according to modified BG Prasad scale, May 2016) (n=420).

Socio-economic status	N	%
I-Upper class 6277 & above	4	0.95
II-Upper middle class 3139-6276	49	11.67
III-Middle class 1883-3138	64	15.24
IV-Lower middle class 942-1882	165	39.29
V-Lower class <942	138	32.86
Total	420	100

Total 420 women who had delivered within three months during the course of the study or were pregnant during the time period of the study were taken as study subjects after applying inclusion and exclusion criteria.

Table 3: Birth preparedness and complication readiness index (BPCR Index) of the study population (n=420).

Indicator number	Indicators	% of the mothers
1	Percentage of women received first antenatal check-up with 12 weeks	68.1
2	Percentage of women received at least 4 ANCs	28.6
3	Percentage of institutional delivery	85
4	Percentage of women saved money for childbirth	65.5
5	Percentage of women identified vehicle for emergency transportation	64.5
6	Percentage of women identified blood donor	34.76
7	Percentage of women knew at least 1 key danger signs of pregnancy	46
8	Percentage of women knew at least 1 key danger signs of labour/childbirth	39.8
9	Percentage of women knew at least 1 key danger signs of post-partum period	34.5
10	Percentage of women knew at least 1 key danger signs of newborn	38.8
11	Percentage of women who knew about Govt financial assistance scheme	46.4
12	Percentage of women who knew about Govt transport scheme	46.4
BP/CR Index of the study population		49.86

Data was recorded in the predesigned and pre tested proforma and were analysed by using SPSS V.20 software. Out of the total 420 mothers, 75% belonged to the age group 20-25 years, 16% were over 25 years, while 9% of the mothers were below 20 years of age. Maximum study subjects (33.1%) belonged to General Category. 23.1% of mothers were Schedule Caste, while 11.2% belonged to Schedule Tribe and 32.6% to OBC category. Hindu Mothers were part of all the castes, while Muslims belonged either in General Category or OBC castes (Table 1). Maximum mothers (70%) were homemakers, the rest were occupied in various capacities (Figure 1).

In the present study 32.86% of the study population belonged to lower socio-economic class while 39.29% to upper-lower socio-economic class. Less than 1% of the total study population belonged to Upper Class of SES (Table 2). The BPCR index overall is 49.86, with 85% institutional deliveries; ANC visits initiation at 68%.

General awareness shows certain gaps which needs attention of health care workers (Table 3).

Table 4: Distribution of study subjects according to different outcome and mode of delivery of the last pregnancy (n=260).

Outcome		N	%
Birth	Live birth	254	97.69
	Still birth	6	2.31
Mode of delivery	Vaginal delivery	205	78.85
	CS	55	21.15
Sex of the baby	Male	162	62.31
	Female	92	35.38
Birth weight	Normal (> 2.5 kg)	203	78.08
	Low birth weight (<2.5 kg)	51	19.62

Table 5: Association between BPCR index and age of the study subjects.

Indicators	Category	
	Age	
	<20 years (N=38)	**≥20 years (N=382)**
1	78.9	67.0
2	26.3	28.8
3	92.1	84.3
4	60.5	66.0
5	44.7	66.5
6	36.8	34.6
7	31.6	47.4
8	34.2	40.3
9	15.8	36.4
10	34.2	39.3
11	39.5	47.1
12	39.5	47.1
BPCR index	44.50	50.4

Out of the mothers who had delivered recently, n=260, 78.85% had delivered by Normal Vaginal Delivery. Around 21.15% mothers underwent caesarean section. The outcome of deliveries indicates 97.69% live babies of which 78.85% were above 2.5kg while 2.31% were still births. 162 (62.3%) of the delivered babies were males & 92 (35.38%) were females.

Total 19.62% new born were low birth weight (Table 4). The BPCR index of <20 years age group mothers is 44.50% and ≥20 years age group mothers is 50.4%. This is not statistically significant (Z values: 1.420, p value: 0.348). But it still indicates that as the age and parity increases, the awareness about BPCR also improves (Table 5).

DISCUSSION

Birth Preparedness and Complication Readiness (BP/CR), in this context is a strategy to promote timely utilization of skilled maternal and neonatal care, especially during childbirth based on the theory that preparing for childbirth and being ready for complications reduces delay in obtaining care. Present study was a Cross-Sectional Community based descriptive epidemiological study. It was conducted between 1 January 2016 to 30 June 2017, in the field practice area of RHTC of index medical college, hospital & research centre, Indore, Madhya Pradesh. In the present study 75% women belonged to the age group 20-25 years, 16% were over 25 years, while 9% of the mothers were below 20 years of age. Maximum study subjects (33.1%) belonged to General Category. 23.1% of mothers were Schedule Caste, while 11.2% belonged to Schedule Tribe and 32.6% to OBC category. Hindu Mothers were part of all the castes, while Muslims belonged either in General Category or OBC castes. In a study conducted among 11 slums of Indore city by Agarwal et.al, Hindu majority was seen in the study population (97.8%).[17] In Uttar Dinajpur, Muslim study population was 33.8% which justifies the more teenage pregnancies as depicted in the Study.[18]

Amongst the study subjects, 33.1% belonged to General Caste, 23.1% in Scheduled Caste, 11.2% in Scheduled Tribe and 32.6% to other backward classes. In the study conducted at Uttar Dinajpur, the SC/ST/OBC population was 45.4%, thus similar to the present study.[18] Amongst the mothers, 294 (70%) were housewives in the present study. 30% were involved in agricultural works or as labourers, which is similar to most of the available studies in comparison.[19]

BPCR index was derived from 12 different indicators (as per JHPIEGO).[20,21] In case of knowledge about different danger signs, none could name all the key danger signs at that particular time. So, knowledge about at least one key danger sign was considered as the indicator. BPCR Index for the study population was 49.86%. The low BPCR index in the present study was contributed by lower level of BPCR practices (in spite of high Institutional deliveries) and low awareness about key danger signs of obstetric and neona tal complications. In Rewa, overall BPCR index was found to be 47.5%.[19] In Rewa, they had taken seven indicators. In the reference study, conducted among slum women of Indore city had BPCR of 47.8%.[17] It was 22.1% in Adigrat City of North Ethiopia, while at Uttar Dinajpur, BPCR Index was 34.5% (including pregnant and recently delivered women).[18,22]

In the present study out of the 420 study subjects, 61.90% mothers (260) had delivered within the past 3 months, while 38.10% (160) mothers were in third trimester of pregnancy. The outcome of deliveries indicated 97.69% live babies of which 78.08% (203) were above 2.5kg, while, 19.62% (51) babies were low birth weight (<2.5Kg), 2.31% still births also occurred. In the present study amongst the high risk mothers (<20 years), 78.9% mothers registered before 12 weeks. Low risk mothers (≥ 20 years) about 67% registered before 12 weeks of

gestation. In Uttar Dinajpur, 46.8% mothers with age <20 years had their first antenatal visit in less than 12 weeks.[18]

It was observed during the survey, disbursement of health care is still dependent upon the age-old caste-system. Villages still have a separate "harijan muhalla"; where antenatal registration, ANC services and Institutional delivery rates are much poorer as compared to the rest of the villages. The Concept of 'exclusive' breast feeding is still not clear to mothers, nor is the custom of pre-lacteal feed gone. The rural mother still believes in the mother-in law's advice of discarding the colostrum. In some villages we came across various pre-lacteal feeding practices, most unusual was giving 'tea' to a newborn. At some villages, in the rural field practice area, it was noted that the belief system in allopath or modern medicine is much less, as people still prefer visiting ojhas and rely upon 'black-magic' for cure. The health seeking behaviour is extremely poor, although health facilities have been made available

CONCLUSION

Awareness about complications of a newborn was also limited, as most of the mothers could not name any condition at all. The poor BPCR index of the present study, i.e., 49.86%, in the rural villages in the periphery of Indore City reveals the real state of affairs. Although much has improved in the past decade in the Health Sector, however, the ground reality has not changed. Poor socio-economic status, lack of adequate education and indifferent health seeking behavior are the main reasons for the poor index of birth preparedness and complication readiness.

Recommendations

Involvement of community, training the ground level workers and proper disbursement of the facilities needs to be seriously looked into by the Government and Private Health Sectors. Need of the hour is community participation which is still missing in the health care delivery system and its utilization.

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