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Community Medicine

UTILIZATION OF ANTENATAL HEALTH SERVICES & HEALTH SEEKING BEHAVIOUR AMONG POSTNATAL WOMEN OF GWALIOR CITY: A CROSS SECTIONAL STUDY

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ABSTRACT **Background:** Antenatal care (ANC) is one of the main components of maternal health given to pregnant women in order to have a safe pregnancy. Delay in identification of pregnancy and lack of related health seeking behavior is the major causes of maternal morbidities and deaths. **Aim:** The study was conducted with the aim to evaluate the health-seeking behaviour for antenatal care services among the antenatal and postnatal mothers in a urban area of Gwalior city of Madhya Pradesh. **Materials and Methods**: Community based Descriptive cross-sectional research design was used to conduct. A total of 350 mothers who delivered in last one year were selected for study. **Results:** 88% of the study participants had received adequate antenatal care (minimum 4 antenatal checkups) but out of only 41.4% had knowledge regarding the danger signs of pregnancy and the major determinants were maternal literacy and adequate prenatal care. Regarding the health-seeking behaviour, 30.3% of them preferred district hospital as preferred place of delivery. Adequate prenatal care was found to have statistically significant association with adequate gestational weight gain, exclusive breastfeeding, proper weaning practices and consumption of iron and folic acid supplements. **Conclusion:** Even though there is reasonable good utilization rate of antenatal service, the study shows the need to provide health education regarding the danger signs of pregnancy and importance of adequate prenatal care to all pregnant women and expectant mothers, to make them aware of when and how to seek medical care, which in turn could reduce the overall maternal morbidity and mortality.

KEYWORDS : Antenatal care, Care seeking behavior, Pregnancy & danger signs, Awareness

INTRODUCTION

The maternal mortality rate is widely used to assess the quality of obstetric care in different countries and regions[1]. Globally, approximately 800 women die every day from preventable causes related to pregnancy and childbirth[2]. Most of the maternal deaths (99%) occur in developing countries with high prevalence among rural areas and poor communities[3]. In India, the maternal deaths stand as high as 174 deaths per 100,000 live births and it is a major public health challenge[4]. Comprehensive maternal care is vital in assuring the safety, and well-being women and their newborn children[5]. Healthcare-seeking behaviour can be understood as a person's process of engaging (or not) with a particular health service. This includes aspects such as how symptoms are perceived and acted upon and how, as well as which type of and when, healthcare services are accessed[6]. Andersen's health behavior model suggests that a person's individual characteristics and healthcare needs influence their motivation and ability to access healthcare services; therefore, overall health service utilization is affected by population characteristics and their environment[7].

It was found that about 88%-98% of all maternal deaths could be avoided by proper care and handling during pregnancy and labor.1 As per WHO recommendations 4- visit ANC should be necessary for lowering the risk of pregnancies. Antenatal care (ANC) services are considered to be the key element in the primary health care delivery system of a country[8]

Antenatal care is the care given to pregnant women so that they have safe pregnancy and healthy baby[9]. The provision of antenatal care (ANC) services brings with it a positive impact on pregnancy as it enables the identification of risk factors and early diagnosis of pregnancy complications like preterm delivery and appropriate management[10]. In spite of all efforts made under reproductive & Child Health Programme (RCH 1 &2), the obstetrics care service utilisation is lagging behind and shows big gaps in the outcome. The services provided by the Government through these programmes would succeed only if it is available to the people at the right time, at the right place and the services must be affordable and accessible. Most of the maternal deaths which occur during pregnancy and labour are due to lack of awareness and delay in the identification of pregnancy complications, delay in decision making of when to seek medical care, delay in choosing the appropriate health facility and receiving adequate and appropriate treatment at the right time [3,11].

According to the latest National Family Health Survey (NFHS-4), the total percentage of antenatal women who had adequate antenatal visits was only 51.2%, clearly indicating the underutilisation of health services[12]. This could in turn lead to increased maternal morbidity and mortality due to under diagnosis of maternal health problems and lack of awareness in child care practices, like exclusive breastfeeding and proper weaning practices. Health seeking behaviour and the utilization of health care among antennal women are influenced by multiple factors like women's education, socio-cultural factors, decision-making authority regarding her reproductive health care, birth order and her socio-economic status[13]. In order to develop effective and appropriate health policies regarding RCH care in a community, it is necessaryto understand the health seeking behaviour, birth preparedness and complication readiness among antenatal and postnatal mothers to evaluate and identify the gaps in the existing health system[12].

Health care service utilization is a key proximate determinant of maternal and infant outcomes[14]. It is evident that well-timed ANC utilization is an opportunity to prevent the direct cause of maternal and neonatal deaths related to obstetric complication and can improve certain outcomes of pregnancy complications[15]. Based on this background, this study was planned and carried out in a urban area Gwalior district with the objective to find out the health seeking behaviour among the antenatal and postnatal mothers and its association with socio-demographic characteristics of the study participants.

2. MATERIALS AND METHODS

This community-based cross-sectional study was carried out in the urban area of Gwalior district of Madhya Pradesh. The study was carried out from 1st October, 2019 to 30th April, 2020 and study subject was 350 mothers of selected clusters, who had delivered within last one year, who was a resident of the study area. Multi-indicator cluster survey (MICS) was done with 30 clusters sampling method, proposed by the WHO, which is a standard method for rapid assessment of coverage evaluation[16]. Sample size was calculated by using the formula $n=Z^2pq/d^2$ (where Z=1.96 at 95% confidence; p=ANC utilization; q=1 -p; d= absolute allowable error. For this study we presumed maximum variability (82%) and minimum allowable error 5% of p (according to health and welfare statistics 2019-20[12].

taking design effect of two, the required sample size was 350. For a 30 cluster technique, number of subjects to be selected per cluster 350/30=11.7. So we have to select 30 clusters, each with 11 or 12 mothers making a total sample size of 350. This study was carried out with the help of Aganwadi workers of ICDS project. The 30 clusters were selected on the basis of systematic random sampling from the probability of the cluster selection based on the population size of the cluster then data collection was done with the help of Aganwadi workers on house to house basis till the desired sample size was achieved. A pretested structured questionnaire was used for interview mothers who delivered within last one year used to collect required information. Before starting study approval was obtained from the Institutional Ethics Committee and data were collected after obtaining informed consent from mother. The questionnaire consisted of two parts. First part recorded the socio demographic information including age of mother; education of mother, occupation of mother, type of family, family size, cast, family income, education of husband and occupation of husband and socioeconomic status (Social classification update by Agarwal[17]) and household decision-making autonomy as predictor variables of maternal health care seeking behaviour. Second part of questionnaire was information about utilization of ANC services and awareness about danger signs of pregnancy and knowledge about exclusive breast feedings. Adequate utilization of ANC services was considered, if the mother received at least four antenatal check-up visits to the health facility including early registration (ANC registration within 12 weeks/ first trimester of pregnancy), two doses/booster doses of tetanus toxoid (TT) injection and consumption of 100 or more iron folic acid (IFA) tablets during pregnancy. Data collected was entered into MS Excel and then analysed using epi info software. Percentages, means, standard deviation (SD), chi-square ($\chi 2$) tests and odds ratio (OR) were calculated with applying logistic regression model and p.

Inclusion Criteria

All currently married women having children of ≤ one year of age comprised of study population.

Exclusion criteria

Mothers not included who was not willing to co-operate, not available during the time of data collection and women having children of more than one year of age.

RESULTS

The results of the study to evaluate health seeking behaviour of the study participants for obstetric care services in the study area are described below

Table 1 shows the socio-demographic characteristics of the study participants. Nearly 52.8% of them were found to be in the age group of 21–29 years. Regarding the educational status of the participant and their spouse, around 57.1% and 62.0% of them, respectively, had education up to secondary school. According to the Agarwal's17 Social Classification, 59.4% of them belonged to middle class followed by lower class (22.2%). About 63.4% of the study participants were belonging to nuclear family type and most of them belonged to Hindu religion (59.7%).

Table1. Socio -Demographic characteristics of the study participants (N=350)

Socio Demographic Variables	Frequency No (%)	
Age in yrs.	<20	47(13.4)
	21-29	185(52.8)
	30-39	87(24.8)
	40-49	31(8.8)
Socio-Economic Status	I (Upper Class)	10 (2.8)
	II (Upper middle Class)	54 (15.4)
	III (Middle Class)	208 (59.4)
	V (Lower Class)	78(22.2)
Education of Mother	Illiterate	21(6.0)
	Up to middle	94(26.8)
	Up to Secondary	200(57.1)
	Graduate or above	35(10.0)
Education of husband	Illiterate	14(4.0)
	Up to middle	72 (20.6)
	Up to Secondary	217(62.0)
	Graduate or above	47(13.4)
Occupation of mother	Housewife	261(74.5)
	Business	22(6.3)
	Government and Private Job	67(19.1)
Religion	Hindu	209(59.7)
	Muslims	56(16.0)
	Others (include Sikh, Jain, Christian)	85(24.3)
Type of Family	Nuclear	222(63.4)
	Joint	128(36.6)

Table 2 shows the health seeking behaviour and pregnancy characteristics of study participants. It was found that nearly 30.3% of the participants preferred district/tertiary hospital for their safe delivery. For antenatal care, 62.0% of the participants reported that their husband was the decision maker regarding the place of delivery of the child and only 7.1% health workers accompanying them to the health centers. Most of the study participants received iron and folic acid (IFA) tablets (91.7%) and tetanus toxoid (TT) injection (92.8%). Around 88.0% of them had adequate prenatal care and but 42.0% of them had adequate gestational weight gain (9-11 kg) during pregnancy. Most of deliveries (64%) were conducted by doctors in which deliveries by caesarian were 29.1%.

Table 2: Health seeking behavior and pregnancy characteristics of study participants (N=350)

Characteristics		Frequency n (%)
Preferred place of delivery	Sub centre	129(3.8)
	PHC/CHC	55(15.7)
	District/ tertiary	106(30.3)
	Private Clinic	60(17.1)
Adequacy of prenatal care	Inadequate	42(12.0)
	Adequate	308(88.0)
Health Care Worker accompanied to health facility for obstetric care	Yes	25(7.1)
	No	325(92.9)
Decision making regarding the place of birth	Husband	217(62.0)
	Mother-in-law	82(23.4)
	Mother	11(3.1)
	Health care provider	33(9.4)
	Close relatives	7(2.0)
	Self	14(4%)
Received IFA tablets	Yes	321(91.7)
	No	29(8.3)
Received TT injection	Yes	325(92.8)
	No	25(7.2)
Number of Conception	One	144(41.1)
	Two	115(32.9)
	Three and above	91(26.0)
Adequacy of gestational weight gain (9-11 kg)	Adequate	147(42.0)
	Not Adequate	203(58.0)
Distance to health facility	<30 Minute	283(80.9)
	30-60 Minute	67(19.1)
Delivery conducted by	Doctor	224(64.0)
	Nurse	87(24.9)
	ANM/MPW	39(11.1)
Mode of delivery	Normal delivery	248(70.9)
	Caesarian	102(29.1)

Table 3 shows the awareness of danger signs of pregnancy among study participants. To assess the pregnancy complication readiness, the study participants were enquired about the danger signs of pregnancy.[11] The most common danger sign for which they were aware excessive bleeding from vagina (88.0%) and early rupture of bag of water (90.3%) and high fever (88.9%). only 2.0% of the participants were aware that fever with blurring of vision was a danger sign during pregnancy.

The awareness regarding danger signs like slow progress of labour >12 hours and fits with severe pain in abdomen were found to be very low. When assessing the awareness regarding the danger signs of pregnancy, those who were able to give a correct answer to a minimum of 6 questions out of the 12, were regarded as having adequate

knowledge regarding the danger signs of pregnancy. Thereby, around 36% of the study participants were found to be having adequate knowledge regarding the danger signs of pregnancy.

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Table 3- Awareness Of Danger Signs Of Pregnancy Among Study Participants (N=350)

Danger Signs	Frequency* No. (%)
Bleeding from vagina before 37 weeks	241(68.9)
Severe pain in abdomen	252(72.0)
Breathlessness	42(12.0)
Swelling in face or body	56(16.0)
Reduced fetal movements	287(82.0)
High fever	311(88.9)
Malpresentation	28(8.0)
Slow progress of labor more than 12 h	39(11.1)
Excessive bleeding from vagina	322(92.0)
High fever with blurring of vision	7(2.0)
Fits with severe pain in abdomen	35(10.0)
Early rupture of bag of water	316(90.3)
*Multiple response for each variable	

When assessing the awareness regarding the danger signs of pregnancy, those who were able to give a correct answer to a minimum of 6 questions out of the 12, were regarded as having adequate knowledge regarding the danger signs of pregnancy. Table 4 showing association of awareness regarding danger signs of pregnancy among study participants according to antenatal care utilization. There was maximum odds 29.6 (P=0.001) found in reduced fetal movements awareness in participants had found adequate antenatal care followed by other conditions e.g., Early rupture of bag of water 12.1 (p=0.001, Severe pain in abdomen 11.7 (p=0.001), and Bleeding from vagina before 37 weeks 11.2 (0.001). Overall difference in awareness in the participants were received adequate or non adequate antenatal care about danger signs during pregnancy were found statistically significant (p=0.001).

Among the study participants, it was found that the odds of having adequate knowledge regarding danger signs of pregnancy were 8.1 times higher among those who were >40 years of age but the association was also found to be statistically insignificant (P=0.079). It was found that the participants who were literate had 3 times increased odds of having adequate knowledge regarding danger signs of pregnancy (3.2(95%CI: 1.3,7.8)). The association was also found to be statistically significant (P=0.016). Those who belongs to upper class had adequate prenatal care during their pregnancy had 3.9 times increased odds of being more aware of the danger signs of pregnancy (OR: 3.9(0.21 to 7.1)) but there was no statistically significant (P: 0.51). [Table 5]

Table 4: Awareness of danger signs of pregnancy among study participants according to antenatal care utilization

Danger Signs	Awareness about Danger Signs	Adequate Antenatal Care N=308 No (%)	Not Adequate Antenatal Care N=42 No (%)	Odds ratio (95% CI)	P value
Bleeding from vagina before 37 weeks	Yes	232(75.3)	9 (21.4	11.2 (5.1 to 24.4)	0.001 *
	No	76(24.7)	33(78.6)		
Severe pain in abdomen	Yes	242(78.5)	10(23.8)	11.7 (5.4 to 25.1)	0.001 *
	No	66(21.4)	32(76.2)		
Breathlessness	Yes	38(12.3)	4(9.5)	1.3(0.4 to 3.9)	0.784
	No	270(87.7)	38(90.5)		
Swelling in face or body	Yes	52(16.9)	4(9.5)	1.9(0.66 to 5.4)	0.35
	No	257(83.1)	37(91.5)		
Reduced fetal movements	Yes	278(90.3)	10(23.8)	29.6 (3.2 to 66.2)	0.001*
	No	30(9.7)	32(86.2)		
High fever	Yes	290(94.1)	21(50.0)	16.1(7.4 to 34.7)	0.001*
	No	18(6.9)	21(50.0)		
Malpresentation	Yes	27(8.8)	1(2.4)	3.9 (0.5 to 29.7)	0.184
	No	281(91.2)	41(97.6)		
Slow progress of labor more than 12 h	Yes	36(12.1)	3(4.8)	1.9(0.4 to 8.3)	0.385
	No	271(87.9)	39(95.2)		
Excessive bleeding from vagina	Yes	292(94.8)	30(71.4)	7.3(3.1 to 16.8)	0.001*
	No	16(5.2)	12(28.6)		
High fever with blurring of vision	Yes	7(2.2)	0(0)	2.1(0.1 to 37.6	0.610
	No	301(97.8)	42(100)		
Fits with severe pain in abdomen	Yes	32(10.4)	03(7.1)	1.5 (0.4 to 5.1)	0.513
	No	278(89.6)	39(92.9)		
Early rupture of bag of water	Yes	292(94.8)	24(57.1)	12.1 (5.6 to 26.3)	0.001*
	No	18(5.2)	18(42.9)		
	P= 0.001*				
* Statistically Significant					

Table 5: Association between knowledge regarding the danger signs of pregnancy and related variables

Characteristics of the Participants		Adequate knowledge regarding the danger signs of pregnancy (N=145) n (%)	Inadequate knowledge regarding the danger signs of pregnancy (N=205) n (%)	Odds ratio (95%CI)	P Value (x^2 Test)
Age (Yr)	<20	15(31.9)	32(68.1)	1	0.079
	20-29	70(37.9%)	115 (62.1%)	1.9 (0.83:4.33)	
	30-39	41(47.1%)	46(52.9%)	2.7(0.97:7.31)	
	40-49	19(61.3%)	12(38.7%)	8.1(0.98:7.31)	
Literacy Status	Illiterate	02(9.5)	19(90.5)	1	0.016*
	Literate@	143(43.4)	186(56.6)	3.2(1.3:7.8)	
Type of family	Nuclear	194(87.4%)	28(12.6%)	1	0.08
	Joint	114(89.1%)	14(10.9)	1.2(0.59:2.32)	
Socio-economic status	I (Upper Class)	10(100.0)	0(10.0)	3.9(0.21 to 7.1)	0.51
	II (Upper middle Class)	48(88.9)	6(11.1)	1.4(0.50 to 4.1)	
	III (Middle Class)	184(88.5)	24(11.5)	1.4(0.65to 2.9)	
	IV (Lower Class)	66(84.6)	12(15.4%)	1	
*Statistically Significant (P>0.05) @all literacy sub classification merged					

Table 6 shows the breastfeeding and weaning practices of the study participants. Regarding the breastfeeding practices of the study participants, it was found that 81.4% of the study participants initiated their breastfeeding within 1 hour of birth and 70% of them practiced exclusive breastfeeding and 25.1% of them started their weaning practice even before 6 months of age of the child. Among the postnatal mothers, it was found that those who had adequate prenatal care had increased odds of adequate gestational weight gain (OR: 2.24), practicing exclusive breastfeeding (OR: 2.13), following healthy weaning practices (OR: 3.79) and consuming full course of IFA medication (OR: 9.8). The association between these characteristics and adequate prenatal care was also found to be statistically significant (P < 0.05) .

Table 6: Association of adequate prenatal care and certain characteristics among postnatal women

Characteristics	Adequate prenatal care (N-308) n(%)	Inadequate prenatal care (N-42) n(%)	Odds ratio (95%CI)	P value

Adequacy of weight gain during pregnancy	Adequate (203)	186(91.6)	17(8.4)	2.24(1.2:4.3)	0.022
	Not Adequate (147)	122(83)	25(17)		
Consumed IFA tablets	Yes (321)	293(91.3)	28(8.7)	9.8 (4.3:22.2)	0.001
	No (29)	15 (51.7)	14 (48.3)		
Early initiation of breastfeeding	Yes (n=285)	272 (95.4)	13 (4.5)	16.8 (8.0; 35.3)	0.001
	No (n= 65)	36 (55.4)	29 (44.6)		
Exclusive breastfeeding	Yes (n= 245)	222(89.8)	23(11.2)	2.13 (1.1:4.1)	0.034
	No (n= 105)	86 (83.8)	19 (16.2)		
Weaning started	Before 6 months (n=88)	67(76.1)	21(23.9)	3.79 (1.9 7.4)	0.009
	After 6 months (n= 262)	242(92.4)	20(7.6)		

DISCUSSION

Maternal mortality is one of the major public health problems in the country which could in turn be reduced by adequate birth preparedness, awareness of pregnancy complications and enhanced health-seeking behaviour among women. Several studies conducted in different countries on demographic and socio-cultural factors influencing utilization of antenatal care. World Health Organization (WHO) recommends a four-visit ANC schedule for low risk pregnancies[18]. During these visits, the components of ANC suggested in India include iron supplementation, blood and urine tests, at least two Tetanus Toxoid (TT) injections, blood pressure measurement, intestinal parasite drugs, and health education related to pregnancy and detection of the problems that make the pregnancy high risk one[19]. The Most (52.8%) of the women in our study were in the age group of <30 years where Gupta et al in a study found that 58% of women in the age group of 20-26 years.11 In the present study majority (74.8%) of the study population was belong to middle class and 6% were illiterate, 84% had attended secondary school which is comparable to the findings of Srivastava A[20], Gupta *et al*[21]. who had reported 67% and 74%. From this study, it was found that adequate knowledge regarding the danger signs of pregnancy was present in only 36% of the study participants. In studies done by Gopalakrishnan and Rama[22] and Acharya et al.[23], around 46% and 41% of the participants had adequate knowledge regarding the danger signs and complications of pregnancy and in a study done by Gopalkrishan S et. al[24]. and Dave et al.[25], and it was found to be only 24% and 8% respectively. These variations may have been due to the level of literacy status and health-seeking behaviour of the participants in the respective study areas. It was found that the study participants who were >40 years of age had a proportionately higher knowledge regarding danger signs of pregnancy (61.3%) when compared to those who were <40 years of age (47.1%) but the association was also found to be statistically significant. This may be due to the fact that those who were >40 years of age would have been well informed about pregnancy and its complications. These findings are contradictory to the findings by Gopalkrishan S et. al[24], Akshaya and Shivalli[26] and Ghosh et al.[27], where they found that the maternal age did not play a role in the adequacy of knowledge regarding the BPACR.[24, 26, 27] This may be attributed to the better literacy status and better reach of the RCH services in this study population.

Among the study group, nearly 94% of the study participants and their husband had a minimum education of primary school and around 84% of them had an education up to secondary school. Similar results were obtained in a study done by Gopalkrishan S et. al.[24], Akshaya and Shivalli[26]. There was a statistical significant association found between maternal literacy and adequate knowledge regarding the danger signs of pregnancy (P=0.016). Similar results were found in a study carried out by Gopalkrishan S et.al[24] and Agarwal *et al*.[28] These findings highlight the fact that literacy level plays a major role in determining the BPACR (Birth preparedness and complication readiness) among participants. Regarding the health seeking behaviour of the study participants, 30.3% of the study participants preferred district hospital as their preferred place of delivery. On the contrary Gopalkrishan S et. al[24], Jain *et al*[29]. found that the preferred maternal health seeking behaviour was from the PHC 62% & 68% respectively. Abdulrida et al.[30] in Baghdad also found that about 55.2% of the mothers sought care from government PHCs. The better utilization of the district hospital in this study may be due to the attractive referral benefits provided by the government schemes through primary health care to district hospital, better institution and outreach services, free medications and treatment. The majority of the study participants belonging to the middle class and they have better access to these facilities. Majority of the study participants received the IFA tablets (91.7%) and TT injection (92.8%) during the course of their pregnancy period. Similar findings were obtained in a study done by G, Vincent et al., where among the postnatal mothers, 94.3% and 82.4% of them consumed IFA tablets for >90 days.[24,31] Non-compliance in the IFA medication in some of them would have been due to the adverse effects like nausea and vomiting and not received due to unawareness. Similar findings were obtained in studies conducted by Jha et al.[32] and Kotecha et al.[33] & survey made by International Institute for Population Sciences India in 2005-2006[34]. This shows the efficacy of these services and awareness among the participants. Regarding the final decision making on choosing the place of birth, it was found that husbands (62.0%) were the major decision makers and they were the ones accompanying their wives to the health care facilities for seeking obstetric care. This shows the influential role of the husband in today's society, especially in the study area. These findings were similar to the study conducted by Gopalkrishan S et. al.[24.] and Qureshi et al.[35] The docile nature of the pregnant mothers can lead to many of their complaints or illness being looked down by their husband and his family members which could in turn lead to increase in their morbidity. Women have little preference in the family; hence they have to rely on their husband and family members (mostly in laws) to take any decision. It is even more important for the women to make their own choices and decisions based on the adequate information of the services they use as per their personal, family, and social needs. Studies have revealed that both economic status and social dynamics regarding distribution of power between spouses have an influence on the use of maternal health services.[36] In our study, around75.0% of the respondents belonged to a nuclear family. This was contrary with the study[31] done in the Mid-Western region of the country where 58.2% of the mothers belonged to a joint family and in the study carried in Nepal[37] was 63.4% in joint family. This difference may be due to our study was carried in urban participants, where nuclear family concept is more dominant. It is often seen that a good marital relationship between spouses exists when they live in nuclear families results in better utilization rates of the ANC services during pregnancy [38]. The role of men and their supportive stance is an essential component for making women's world better. But the role of males in maternal health programmes is a big challenge in India where society is mostly male driven. Proper dissemination of knowledge about maternal health care among husbands and the parent-in-laws and making the husband's presence obligatory during antenatal care visits will help to secure better male involvement in utilization of maternal health care services.[39] It was found that nearly 88.0% of the participants had adequate prenatal care during their pregnancy or corresponding to their gestational age. Similar findings were obtained in a study conducted by Gopalkrishan S et.al[24], Jha et al.[32], but contradictory findings were observed in studies done in rural setting by Ghosh et al[27]. and Saha et al.[40], where only 50% and 60% of the participants had adequate antenatal visits, respectively. These variations may have been due to the heterogeneity in the socio-demographic characteristics of the study participants and the availability and accessibility of health services in the respective study areas. It is a known fact that gestational weight gain is an important prognostic indicator for a healthy mother and a healthy child.[41]Among the study participants; it was found that 42.0% of them had adequate gestational weight gain. There was a statistically significant association (OR 2.24(1.2:4. P=0.022) found between adequate gestational weight gain and adequate prenatal care (in the terms of antenatal visits). Our findings has been found similar to Gopalkrishan S et.al[24]and a study done by Yeo et al.[42],where also found significant association between adequate gestational weight gain and adequate prenatal care. Regarding the breastfeeding practices among the postnatal mothers in the study population it was found that around 70% of them practiced exclusive breastfeeding and there was a statistically significant association (OR=2.13 (95%CI: 1.1,4.1, P=0.034) found between practice of exclusive breastfeeding and adequacy of antenatal visits. These findings are similar to the study conducted by Gopalkrishan S et.al[24], Deepanrajan et al.[43] This shows that peripheral health workers and social media play a major role in creating awareness about exclusive breastfeeding practices among antenatal and postnatal mothers.

Madhya Pradesh is not in the forefront of delivering the RCH services through the better established health care delivery system, particularly due to vast and difficult outreach of participants to health facilities, so the level of knowledge among the target group about the essential and

emergency obstetrics services provided as part of the BPACR needs to be improved for better utilisation of the services provided.[22] Studies conducted in different part of India found that the overall BPACR index indicating birth preparedness to be ranging from as low as 34.5% to 71.5% and 79.3%.[26,44] Hence a comprehensive birth plan/emergency preparedness plan should be seriously implemented through the existing RCH network of services. The emergency preparedness plan should include the identification of the following: knowledge of key danger signs; desired place of birth; preferred birth attendant; location of the closest appropriate health care facility; funds for birth related and emergency expenses; a birth companion; transport to a health facility for the birth; transport in the case of an obstetric emergency; and identification of compatible blood donors in case of emergency.[3] This will help in better health-seeking behaviour among the target population for maximising the service utilization and reduce maternal and infant morbidity and mortality.

CONCLUSION

Antenatal care is an essential component of safe motherhood. Te study revealed that the overall utilization of antenatal health services was good as almost more than two third of the mothers utilize it, even though adequate knowledge regarding the danger signs of pregnancy was present in only 36% of the study participants. This study result highlights the fact that adequate prenatal care is an important determinant for adequate gestational weight gain and healthy breastfeeding practices. Though the government has taken necessary measures to improve maternal mortality and morbidity through the RCH and BPACR programmes, the ultimate deciding factor is the effective utilization of these health services which in turn depends on participants (Pregnant mother) health seeking behaviour.

Limitations

Limitation of this study is that the results of this study could not be generalised to general population as the sample size was chosen from the urban field practice area as per convenience, covering a small geographical area.

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