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RESEARCH ARTICLE

Maternal and child health care service utilization among the mothers of Ganebail PHC, Belagavi district, India.

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Abstract

Background: Women and men combat similar health challenges, moreover women needs particular attention during physiological process of pregnancy, childbearing and lactation. Maternal mortality is a key indicator of women's health and status in society.

Objective: To study the maternal and child health care service utilization pattern among the mothers of Ganebail PHC, Belagavi District, India.

Materials and Methods: A cross sectional study was carried out amongst the recently delivered 520 mothers of Ganebail Primary Health Centre (PHC), Belagavi District. Pretested self administered questionnaire was used to elicit the necessary information. Frequency and percentage was calculated. Ethical clearance and informed consent was obtained from the concerned authority and person.

Results: Majority (82%) of the women received complete ANC services and (96.9%) women opted for institutional delivery. Nearly (42.69%) women stayed in hospital for more than 48 hours after delivery. Only (34.81%) women received ≥ 4 PNC visits and (87.5%) women initiated breastfeeding within 30 minutes of delivery to their newborns.

Conclusion: Augmentation of health facilities, encouragement of service provider, creating awareness and motivating women to utilize maternal services in stipulated time will support to achieve furthermore better results.

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INTRODUCTION

Women and men combat many health challenges, which are alike; the differences are such that the health of women needs particular attention. Throughout human history, pregnancy and childbearing have been major contributors to death and disability among women. Maternal mortality is a key indicator of women's health and status in the society.¹

Maternal Health has its direct implications on families, communities and the entire country due to its insight not only on the health of women but immediate survival of newborn and long term well being of children they bare. Maternal morbidity and mortality have cost implications on family and community because of both direct and indirect costs and the hostile impact on productivity.²

Africa and Asia have a lion's share of over 90 percent of the maternal deaths worldwide. India alone accounted for one quarter of all maternal deaths. For every woman who dies during pregnancy, approximately 30 more women

suffer injuries, infections and disabilities during pregnancy or childbirth accounting at least 15 million women a year.³

Most maternal deaths are preventable. In the developed countries, with good and easy access to special health care, pregnancy and childbirth are rarely fatal events or results in disability. This scenario is contrary in developing countries where each journey of pregnancy is unidirectional from which many women may never return.⁴

The International Safe Motherhood Conference held at Nairobi in 1987 was a landmark event. The Safe Motherhood Initiative, aimed to halve maternal deaths by the year 2000. The initiative showed dynamic changes in the thinking of policy makers and practitioners and made safe motherhood an important component of interventions which are focusing on women's health and rights.⁴

Compliance to the principles of antenatal checkup during pregnancy (early registration of pregnancy, at least three antenatal visits, universal coverage of TT immunization, IFA consumption, early detection and referral of at risk mothers), institutional and skilled attendant delivery, at least three visits by skilled personnel during postnatal period and management of complications occurring during postpartum (0-42 days after delivery) are essential to reduce maternal mortality and adverse birth outcomes.⁽⁵⁻⁷⁾ Hence it is important to study the maternal and child health care service utilization pattern among the mothers of Ganebail PHC, Belagavi District, India.

Materials and Methods

A Community based cross sectional study was conducted in Ganebail PHC of Belagavi District. Duration of this study was 1 year i.e. from April 2012 to March 2013. Married women who have delivered during the study period in Ganebail PHC area were included in this study. If the participant was not available at the time of visit (three visits were made to trace all the pregnant women who delivered during study period) were excluded.

Total number of pregnancy were calculated, depending upon population of sub-centers under the jurisdiction of PHC Ganebail with considering the birth rate of 20/1000 population per year and by using the formula, i.e.

$$\begin{aligned}\text{Expected Pregnancy} &= \frac{\text{Birth rate} \times \text{Total population}}{1000} \\ &= \frac{2 \times 28455}{1000} = 626\end{aligned}$$

Total number of expected deliveries were calculated by subtracting 10% wastage factor from total pregnancy. The expected delivery = (626-62) 569. The total deliveries occurred during 2012-13 were 548, of which 520 women were enrolled for the study and 28 women were not been able to trace.

A pilot study was done in Italhond subcentre of Ganebail PHC. Thirty recently delivered women were interviewed to pretest and validate the questionnaire. However, 520 participants were interviewed who were available in the village at the time of visit. A scheduled plan was prepared to visit all the 29 villages with prior information to ASHAs and ANMs. All the houses of the participant were enlisted and house visit was carried out. Data was collected from registers of ANMs and ASHAs workers of their respective sub-centre and village.

Before conducting this study, written permission was obtained from District Health Officer, DHO office campus, Belagavi. A pretested and self administered questionnaire was administered to the participant and data was collected regarding socio-demographic, maternal and child health care services utilization. Data was analysed by using SPSS software (version 20). Frequency and percentage was calculated. Ethical clearance was obtained from the Institutional Ethics Committee of the JNMC, KLE University Belagavi and informed consent was taken prior to the initiation of the study.

Results

Table 1: Selected socio-demographic characteristics of the study participants (n=520).

Socio-demographic characteristics		Frequency	Percentage
Age in years	15-19	21	4
	20-24	320	61.5
	25-29	148	28.5
	30 and above	31	6
Education	Illiterate	21	4.04
	Literate	499	95.96

Occupation	Housewife	514	98.8
	Coolie	2	0.4
	Agriculture	3	0.6
	Private job	1	0.2
Religion	Hindu	487	93.7
	Muslim	28	5.4
	Christian	4	0.8
	Jain	1	0.2
Type of family	Nuclear	116	22.3
	Joint	404	77.7
Socio economic status	Class I	2	0.4
	Class II	72	13.8
	Class III	166	31.9
	Class IV	264	50.8
	Class V	16	3.1

Table 2: Antenatal care services utilization pattern among mothers (n=520).

Service used pattern		Frequency	Percentage
Antenatal registration	Yes	519	99.8
	No	1	0.2
Gestational period at 1 st ANC check-up	< 12 weeks	280	53.8
	12 weeks to 20 weeks	218	41.9
	> 20 weeks	22	4.2
ANC check-ups by ANM at home	1 st ANC	427	82.1
	2 nd ANC	63	12.1
	≥ 3 ANC	4	0.8
	No ANC	26	5
ANC check-ups by ANM at institution	1 st ANC	8	1.5
	2 nd ANC	84	16.2
	3 rd ANC	380	73.1
	≥ 4 ANC	47	9
	No ANC	1	0.2
Complete dose of TT immunization	Received	519	99.8
	Not received	1	0.2
Measurement done	Yes	519	99.8
	No	1	0.2
Investigation performed	Yes	519	99.8
	No	1	0.2
Haemoglobin levels	< 7 mg	12	2.3
	7 mg to 11 mg	462	88.8
	> 11 mg	45	8.7
	Not done	1	0.2
IFA tablets consumed	< 25%	8	1.5
	25-50%	436	83.8
	50-100%	76	14.6

Table 3: Intranatal care services utilization pattern among mothers (n=520).

Service used pattern		Frequency	Percentage
Place of delivery	Institutional	504	96.9
	Home	16	3.1
Causes of home delivery (n=16)	Better at home	1	6.3
	No time to go	7	43.8
	Not necessary	8	50
Escorted during delivery (n=504)	None	157	30.2
	ASHA	287	55.3
	AWW	6	1.2
	ANM	7	1.3
	Others	47	9
	Don't know	16	3
Mode of transportation for delivery	108 ambulance	148	28.5
	Private vehicle	356	68.5
	Don't know	16	3
Duration of hospital stay	<48 hours	236	45.38
	>48 hours	222	42.69
	Don't know	62	11.93
Duration of labour	Pre term	23	4.4
	Full term	495	95.2
	Delayed labour	2	0.4
Type of delivery	Normal delivery	479	92.1
	Assisted delivery	9	1.7
	Caesarean section	32	6.2
Outcome of delivery	Live birth	517	99.4
	Still birth	3	0.6
Condition of newborn	Normal	490	94.23
	Sick new born	30	5.77

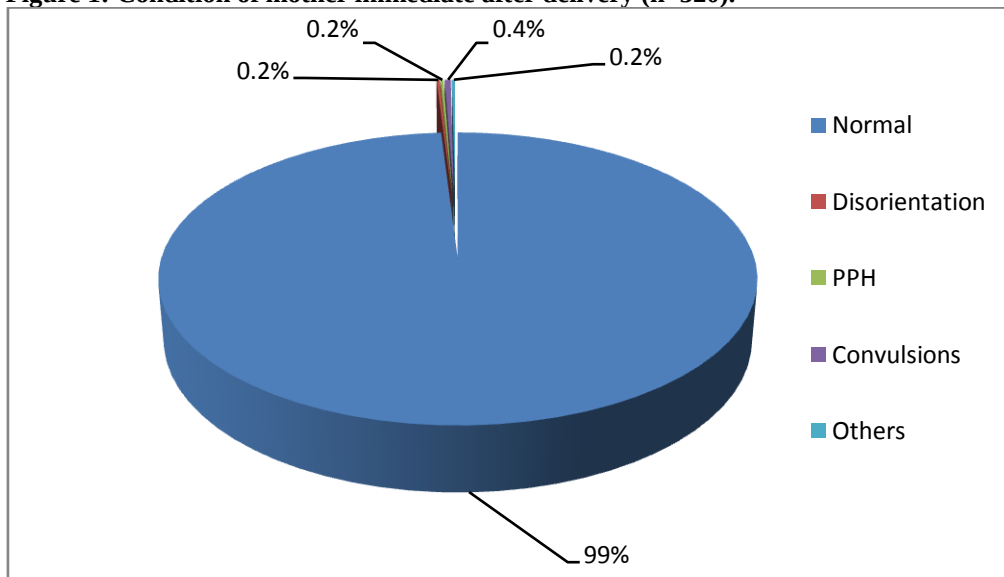
Figure 1: Condition of mother immediate after delivery (n=520).

Table 4: Postnatal care services utilization pattern among mothers (n=520).

Service used pattern		Frequency	Percentage
Number of PNC visits	≤ 3 visits	339	65.19
	≥ 4 visits	181	34.81
Received counselling services	Yes	514	98.8
	No	6	1.2
Initiation of breastfeeding	< 30 minutes after delivery	455	87.5
	< 1 hour after delivery	35	6.73
	> 1 hour after delivery	30	5.77
Immunization status	None	84	16.15
	BCG	13	2.5
	OPV	31	5.96
	Hepatitis	3	0.57
	BCG+OPV	334	64.23
	BCG+OPV+Hepatitis	55	10.59

Majority (61.5%) of the women belonged to the age group 20-24 years with a mean age of 23.44 ± 3.27 years. High proportions (96%) women were literate and very few (4%) women were illiterate. Most of women (98.8%) were housewives where as a negligible percentage (1.2%) women belonged to working group (agriculture and private job). About (93.7%) women belonged to Hindus religion followed by Muslims (5.4%), Christian (0.8%) and Jain (0.2%) respectively. Large proportion (77.7%) of the participants lived in joint family and (22.3%) women resided in nuclear families. More than half of the participants (50.8%) belonged to class IV followed by class III (31.9%), class II (13.8%), Class V (3.1%) and Class I (0.4%). (Table 1)

ANC registration was found in (99.8%) of cases. only (53.8%) pregnant women were registered within 12 weeks of their gestation period whereas (41.9%) were registered between 12 weeks to 20 weeks of their gestation and (4.2%) were registered after 20 weeks of gestation. Majority (95%) women received one or more ANC services at home. More than three quarters (82%) women had received three or more than three ANC services by ANM in the institution. Most of the women (99.8%) received complete dose of immunization TT. Almost cent percent i.e. (99.8%) women received complete measurement of weight, blood pressure and abdominal examination. About (91%) participants haemoglobin levels were less than 11 gram percent, out of which majority (88.8 %) women were anaemic and (2.3%) were severely anaemic. Most of the pregnant women (83.8%) consumed 25-50% of IFA tablets they received. (Table 2)

Majority (96.9%) women availed institutional delivery whereas (3.1%) women delivered in their home. Women who delivered in their home were enquired regarding the reasons for not opting institutional delivery, (43.8%) participants answered there was no sufficient time to go to institution for delivery and (50%) said it is not necessary to go for institutional delivery. Only (6.3%) responded that it is better at home. More than half (55.2%) of the pregnant women were escorted by ASHAs during their delivery in the institution. A negligible number of pregnant women were accompanied by AWW (1.2%) followed by ANM (1.3%) and others (9%). However a large portion of the pregnant women (30.2%) were not accompanied by any health personal. Majority of the women (45.38%) were discharged within 48 hours of delivery. About (68.5%) pregnant women were availing private vehicle for transportation to institution during delivery whereas (28.5%) utilized 108 ambulance services which is free of cost. Regarding the duration of labour (95.2%) deliveries were full term deliveries, (4.4%) were pre term and (0.4%) were delayed labour. Most (92.1%) of the deliveries were normal deliveries, (6.2%) of the deliveries were by caesarean section and only a smaller proportion i.e. (1.7%) was assisted deliveries. Cent percent (99.4%) of the delivery resulted in live births and only (0.6%) were stillbirths. Majority (94.23%) newborn babies were normal and (5.7%) were sick new born. (Table 3)

About (1%) women experienced complications after delivery. (Figure 1) As per the guidelines issued by NRHM (65.19%) women did not receive 4 PNC check-ups and (34.81%) women received ≥ 4 PNC visits. Almost all (98.8%) respondents received counselling services after delivery regarding breast feeding, nutrition, family planning services, PNC visits and immunization to the newborn. Large proportion (87.5%) women initiated breast-feeding

within half hour after delivery followed by (6.73%) initiated within one hour and (5.77%) after one hour of delivery. Regarding immunization status (64.23%) newborn received BCG along with OPV vaccination, (5.96%) received only OPV vaccine, (2.5%) received only BCG vaccine, (0.57%) received only Hepatitis vaccine and (16.15%) newborn did not receive any kind of vaccination. (Table 4)

Discussion

Socio demographic characteristics:

In the present study (61.5%) women were in the age group of 20-24 years which was similar to the studies conducted in different parts of India.^(11, 13, 14, 21, 25-27) Some studies showed average age of pregnant women ranging from 25-29 years at the time of interview.^(9,15-17, 24) However (4%) women were in the age group of 15-19 years as seen in the studies conducted at KHAM district and in rural area of Delhi (5.6%).^(9,15) About (96%) of women in our study were literate. NFHS-3 data shows (60%) literacy for Karnataka and DLHS-3 data shows (64%) literacy rate among females.⁽¹⁹⁻²⁰⁾ Almost (98.8%) women were housewives which were similar to a studies conducted in various parts of country.^(11,14,25-26)

In this study (93.7%) women were Hindus, (5.4%) were Muslims, (0.8%) were Christians and (0.2%) were Jain. Similar findings were noted in various studies where participants of Hindu ranged from (71.11 to 100%) and Muslim religion ranged from (3 to 28.89%).^(12-15, 24, 27) It was noted that (22.3%) women belonged to nuclear families where as a contrast result (71.8%) was reported in a study conducted in Dehradun in 2008-09.¹³ Socio economic status of women showed (0.4%) women belong to upper class (Class I), (13.8%) belonged to upper middle class (Class II) however only (3.1%) belonged to lower class (Class V). Similar findings were reported in studies conducted at Jabalpur, Madhyapradesh with (16.7%) in upper and upper middle class.²¹ Similarly (34.4%) women were categorized in lower middle class in study conducted at Dehradun.²⁹

ANC service utilization:

Present study showed (99.8%) women were registered by ANM, of which (53.8%) were registered within 12 weeks of gestation and (46.2%) were registered late. However, early ANC registration was less than target set by NRHM (85%). DLHS 3 data shows (84.7%) ANC registration and (61.8%) early ANC registration.¹⁸ It was also noted from the various articles reviewed, ANC registration was more than (75%).^(14,23,26) Less than half (41.9%) women registered in second trimester and (4.2%) registered after 20 weeks of gestation. NFHS-3 data shows (15%) registered in 2nd trimester and (14%) in 3rd trimester.¹⁹ DLHS-3 data shows (16.9%) registration was done in 2nd trimester and (1.2%) in 3rd trimester.²⁰ However, a contrast figures have been noted in a study conducted in KHAM District, i.e. only (39.9%) were registered in 1st trimester, (58.7%) in 2nd trimester and (1.4%) in 3rd trimester.⁹ This variation may be due to geographical variation, low health status and low health services in the Sub Saharan African countries.

About (95%) women had at least one ANC service at home which includes counselling and health education not only to the pregnant women but also to the family members. Similar study conducted at Ujjain district showed (12%) women received ANC services at their respective home.¹⁶ DLHS-3 data shows (4.5%) women had community based ANC checkups.²⁰ Almost all ANC (99.8%) registered by ANM had at least one ANC check up conducted by ANM in institution. Three fourth (73.1%) women had three ANC check up and (9%) had more than four ANC checkups. On the other hand (1.5%) had only one ANC services, (16.2%) had two ANC services but (0.2%) did not received any kind of ANC services. NFHS-3 data shows (13%) women did not receive any ANC services whereas (73.4%) received more than 3 ANC services.¹⁹ Similarly DLHS-3 data showed (10.1%) did not receive any ANC services and (81.3%) received more than 3 ANC services conducted by ANM.²⁰ It was interesting to note that almost cent percent (99.6%) women weight, BP and abdominal examination was considered during each ANC checkups. NFHS-3 data shows (81-90%) while DLHS-3 data shows (52.4-78.9%) women basic measurement were considered during pregnancy.^(19,20) Similar study conducted in Haryana in 2010 showed (93.24%) women basic measurement were considered during ANC checkups and (66.6%) in study conducted at Jamnagar in 2011.^(25, 27)

Most of the women (83.8%) consumed only 25 to 50% of IFA tablets, (14.6%) women consumed more than 50% of the tablet and (1.5%) women consumed less than 25% of IFA tablets they received. Since women did not consume IFA tablets which were provided to them which resulted in high prevalence of anaemia. Similar study conducted in rural Delhi showed (20%) have consumed less than 100 tablets.²⁴ More than half of women (56.8%) consumed 75% IFA tablets which was reported at Haryana in 2010.²⁵ A study conducted at Kham District in 2008 showed (51.57%) had consumed less than 100 tablet.⁹

INC service utilization:

In our study (96.9%) women opted for institutional delivery. NFHS-3 data shows only (56.75%) institutional delivery rates and DLHS-3 data shows (72.2%) institutional delivery.⁽¹⁹⁻²⁰⁾ Different studies conducted in various parts of India showed institutional delivery rates ranges from (38-89%) across the country.⁽²⁵⁻²⁸⁾ Nearly (3.1%) of the deliveries were home deliveries among which (50%) opined it is not necessary to go to hospital for delivery, (43.8%) women expressed that they didn't had enough time to go to hospital because of labour pain and (6.3%) told it is better at home. DLHS-3 data indicated (30%) women did not have time to go to hospital, (39%) said not necessary, (40%) expressed not customary, (18.5%) told better at home, (9.8%) women opined that cost was too much to bear and (2%) opined quality of service was not good in hospitals.²⁰ Similarly studies conducted in various parts of India revealed the reasons for opting home delivery were home was convenient (7.3-68%), no need for institutional delivery (11.3-56.3%), hospital is too far (2.5-15%), cost too much (12-15%), nobody to take care of the family (4-14%) and other reasons (0-6.8%).^(12, 14, 21, 28)

Out of 504 institutional delivery, (55.2%) women were escorted by ASHAs, negligible percentage (1.2%) women were escorted by AWWs followed by ANMs (1.3%), other health personnel (9%) and (30.2%) women who delivered in institution were not accompanied by any health personnel. A study conducted in Jabalpur, Madhyapradesh indicated (33%) of the institutional deliveries were motivated and accompanied by ASHAs.³⁶ Similar findings were reported at Dehradun and Ujjain study.^(9,14) Only (16%) pregnant women were escorted by ASHAs which was in contrast to above finding.²³ Of the total institutional delivery, majority of the women (71.5%) used private vehicle for transportation of pregnant women to hospital for delivery and (28.5%) women utilized 108-ambulance service which is free of cost. DLHS-3 data shows only (24.2%) women used either ambulance service or private four-wheeler for moving the pregnant women to hospital and (73%) women were using public transportation facility.²⁰ A concurrent assessment of JSY carried out in 9 states of northern India revealed (30-64%) women were using private vehicle for transportation, (3-4%) were using bullockart and (5%) were travelling by foot.¹² Various studies revealed that majority (38%-98%) women were using private vehicle for transportation.^(16,23,26) After introduction of Arogya Kavacha programme (108-Ambulance services) in Karnataka, most of the women were utilizing 108 ambulance services.

More than a quarter (42.69%) women stayed for more than 48 hours in the hospital after delivery and majority (45.38%) women were discharged within 48 hours of delivery. Similar findings were reported in a Dehradun study where (46%) women were discharged within a span of 1 to 3 days where as (54%) women were discharged within 1 day after delivery.²⁹ Programme evaluation of JSY in nine states of North India in 2010 stated that (19.8%) women were staying for more than 48 hours after delivery in the hospital, (24%) stayed for less than 12-36 hours, (10%) between 24-36 hours and (54%) stayed for less than 12 hours of delivery. It was also reported that (22.5%) women left hospital within 3 hours of delivery.⁸ About (95%) deliveries were fullterm, (4.4%) were preterm and (0.4%) were delayed labour. NFHS-3 data shows (41.6%) were premature labour.¹⁹ In this study (92.1%) women had normal delivery, (6.2%) were caesarean section and (1.7%) were assisted delivery. Similar findings were observed in Gujarat study which revealed (85%) were normal delivery, (8%) assisted delivery and (7%) caesarean section.¹⁷ In contrast to our results, a study conducted in Rohtak, Haryana indicated (100%) normal delivery.²⁵ Outcome of pregnancy showed (99.4%) live births and (0.6%) stillbirths. NFHS-3 data reveals (4.5%) pregnancy wastage.¹⁹ Condition of child immediate after delivery showed (5.7%) newborn babies suffered illness and was shifted to higher centres for treatment. Nearly (1%) women had complication during delivery. DLHS-3 data indicated (43.7%) women experienced some sort of complication during delivery.²⁰

PNC service utilization:

Present study indicated that only (34.81%) women received $\geq$ four PNC services and (50%) received three or more PNC services. NFHS-3 data shows (55.6%) women received $\geq$ three PNC services.¹⁹ DLHS-3 data reveals (64.6%) women received $\geq$ three PNC services.²⁰ In contrast to our findings, studies conducted in Gujarat, India in the year 2006 showed only (28-30%) women received $\geq$ three PNC services.¹⁷ A study conducted in Ghazia Khan city, Pakistan highlighted (31-60%) women received $\geq$ three PNC services.¹⁰ Cent percent i.e. (99%) women had PNC counselling services. A similar finding was highlighted in a study conducted in Rohtak, Haryana in 2009-10, i.e. (68%) women received PNC counselling.²⁵ A large proportion (87.5%) newborn were breastfed within 30 minutes of delivery, (6.73%) were breastfed within one hour of delivery and (5.77%) were breastfed after one hour of delivery. Similar findings were seen in the study conducted in Uttarpradesh (79%) and Delhi (87.83%).^(15,24) NFHS-3 data showed (36%) of new born were breastfed within one hour of delivery.¹⁹ DLHS-3 data considered (87%) newborn received colostrums and (46.9%) received breast milk within one hour. It was also highlighted that only (73.4%) newborn received breastfeeding within one day.²⁰ This improvement in breastfeeding habits is mainly due

to counselling services given during ANC and immediately after delivery to the mothers. There is an increase awareness noted among the community regarding breastfeeding habits.

Among the institutional deliveries (64.23%) newborn had both BCG and OPV vaccine, (5.96%) received only OPV, (2.5%) received only BCG vaccine, (0.57%) received Hepatitis vaccine and (16.15%) new born did not receive any vaccine immediately after delivery. A similar study conducted in rural areas of Delhi in 2009-10 showed (70.94%) newborn received BCG and OPV vaccination.²⁴ NFHS-3 data indicated (26.4%) newborn received OPV vaccine.¹⁹ DLHS-3 data stated (11.5%) new born received OPV vaccination immediate after delivery.²⁰ This improvement in immunization is mainly because of increased government institutional delivery rates, supported by introduction of 'O' dose vaccination programme.

Conclusion

The study concluded that full ANC coverage was much better in our study when compared to DLHS-3 data. Most women availed three or more PNC services. Postnatal complication in mothers was very low whereas incidence of sick newborn was considerably high. Intake of IFA tablets and duration of hospital stay after delivery was low and it should be assured in accordance with NRHM guidelines. Augmentation of health facilities, encouragement of service provider, creating awareness and motivating women to utilize maternal services in stipulated time will support to achieve furthermore better results.

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