

# Assessment of awareness and service utilization of maternal and child health programmes among beneficiaries in a tribal district of Maharashtra

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Received: October 23, 2017; Accepted: February 03, 2018

## ABSTRACT

**Background:** Reduction of mortality of women and neonate is an area of concern for the governments across the globe. Ensuring that women receive skilled care at delivery is an essential part of safe motherhood programs. Janani Suraksha Yojana, a safe motherhood intervention was introduced in 2005 to promote institutional delivery among the poor pregnant women. In 2011, Janani Sishu Suraksha Karyakram was launched. The present study intends to assess awareness of services rendered among beneficiaries. **Objectives:** To assess the awareness regarding the schemes in pregnant mothers and utilization of the same. **Materials and Methods:** A hospital-based cross-sectional study conducted in antenatal care Outpatient Department of Rural Health and Training Centre of a government tertiary care teaching hospital situated in a tribal district of Maharashtra. Study was conducted from August to September 2016. Study tools used were pretested questionnaire used as personal interview. The data were compiled, coded and analysis was done in SPSS Version 23. **Results:** Among the 200 pregnant females included in the study, 30 (15%) were <20 years of age, 135 (67%) were 20–30 years of age, and 35 (17.5%) were more than 30 years of age. 65 (32%) of the pregnant females belonged to joint families and 135 (67.5%) of them were from nuclear families. 37 (18.5%) of the pregnant females were illiterate, and among the literates, 22 (11%) had completed their graduation, rest 72% of them were educated up to high school. **Conclusion:** Systematic improvement needed for proper implementation and increase in awareness among mothers in peripheral and hard-to-reach areas so that the services are utilized by the beneficiaries.


**KEY WORDS:** Awareness; Utilization; Maternal-child Health Services

## INTRODUCTION

Maternal mortality and infant mortality are proven to be indicators of the quality of public health in the community. Southeast Asia, specifically India, has always been on highest contributors of maternal and infant mortality. Maternal mortality ratio (MMR) in India in 1990 was 520/100,000 population. Gradual improvement of quality of health care

along with healthcare infrastructure resulted in decreased MMR. MMR was significantly reduced to 167/100,000 population according to sample registration system (SRS) 2013. 2.89 lakh women died in 2013 due to pregnancy and child birth-related causes. Almost all deaths occurred in low resource setting and most could have been prevented. The number of maternal deaths is very high as compared to many of the developing and developed nations. The reasons are mostly pregnancy-related causes such as hemorrhage, pregnancy-related hypertension, and obstructed labor.<sup>[1,2]</sup>

Infant mortality is also closely associated maternal mortality. Infant mortality was very high at 1990. SRS revealed the infant mortality rate (IMR) was 81/1000 which decreased about 50% to 40 per 1000 live birth. However, still the millennium development goals (MDGs)<sup>4</sup> target of achieving IMR 28

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DOI: 10.5455/ijmsph.2018.1029003022018	

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per 1000 live birth could not be obtained. Nevertheless, the improvement is significant but more needs to be done before we can be able to achieve the MDG4 targets. Most of the causes of infant mortality are also due to prematurity and the complication during delivery, which are preventable.<sup>[1,3]</sup>

The decrease in both maternal and child mortality may be attributed to any public health intervention introduced as a form of maternal and child health (MCH) programmes. Under the broader umbrella of National Rural Health Mission, in 2005, Janani Suraksha Yojana (JSY) was introduced as flagship health programme of central government to give impetus to institutional delivery by skilled birth attendants. It was a totally central government sponsored scheme. In 2011, another scheme Janani Sishu Suraksha Karyakram (JSSK) was introduced reduce the out of pocket expenditure of patients in hospital, which was a burden on the family of the mother. It also intended to improve the quality of care of the pregnant female and ensuring minimum stay in hospital during the high-risk postpartum period.<sup>[1,4,5]</sup>

After many years of implementation of maternal benefit schemes, this study intends to assess the awareness regarding these schemes in pregnant mothers and utilization of these schemes among previously pregnant mothers attending the antenatal care (ANC) Outpatient Department (OPD) in a Rural Health Training Centre of a tertiary care hospital.

## MATERIALS AND METHODS

This is a descriptive, cross-sectional study done in ANC OPD of Rural Health and Training Centre of tertiary care teaching hospital in a tribal district of Maharashtra. The minimum sample size calculated using Epi info Version 7 was 176, using institutional delivery rate in rural area as 86.7%. Antenatal mothers attending the OPD were selected through systematic random sampling (every 3<sup>rd</sup> mother was selected) included in study after they consented to be a part of it. Finally, a total of 200 pregnant women were interviewed using semi-structured questionnaire. The data were collected between August and September 2016. Data were entered, coded, and analyzed using SPSS Version 23. The qualitative data were presented as frequencies and the cross tabulation was analyzed using Chi-square test.  $P < 0.05$  was taken as statistically significant.

## RESULTS

Among the 200 pregnant females included in the study, 30 (15%) were  $\leq 20$  years of age, 135 (67%) were 20–30 years of age, and 35 (17.5%) were more than 30 years of age. 177 of them belonged to family without any below poverty line (BPL) card and only 23 (11.5%) were BPLs. 65 (32%) of the pregnant females belonged to joint families and 135 (67.5%) of them were from nuclear families. 37 (18.5%) of the

pregnant females were illiterate, and among the literates, 22 (11%) had completed their graduation, rest 72% of them were educated up to high school. 183 (91.7%) of the pregnant women belonged to Hindu religion and 17 (8.3%) belonged to Muslim religion.

Among 200 pregnant mothers, 102 were the 1<sup>st</sup> time mothers and 98 were having a previous delivery within last 5 years. These 98 mothers with previous pregnancy were potential beneficiaries of all ongoing MCH promotion schemes including JSY and JSSK. The service utilization rates among mothers with previous pregnancy showed that 60 (61.2%) of them were escorted by accredited social health activist (ASHA) in their previous pregnancy. Among these mothers, 67% of them received monetary benefits before discharge from hospital. 72% of the mothers paid for the vehicle which coming to the hospital during previous delivery.

The comparison of knowledge between the 1<sup>st</sup> time pregnant mothers and mothers with previous pregnancy showed among the mothers with previous pregnancy, 72% had knowledge of vaccination during ANC period, 72% knew about the cash benefits of delivering in a government hospital, 68% knew the treatment and referral for complications during pregnancy is freely available, 9% of them knew the phone number of the ambulance, 13% knew/heard about JSY, and 5% knew/heard about Janani Suraksha Karyakram. None of the mothers registered during the first trimester of pregnancy. 31% of the multigravida mothers registered before 20 weeks of gestation. The difference of all of the above factors with those of the 1<sup>st</sup> time mothers was statistically significant [Table 1].

None of the pregnant women were registered during their first trimester of pregnancy. 22 (73.3%) of the pregnant women  $< 20$  years of age registered within 20 weeks of gestation, 78 (57.78%) of the pregnant women of age group 20–30 years of age registered within 20 weeks, and only 5 (14.29%) of the pregnant mothers of age more than 30 years registered during that period. 16 (53.3%) of the pregnant women  $< 20$  years of age knew about tetanus toxoid (TT) vaccination during antenatal period compared to 98 (72.59%) of the women between 20 and 30 years of age and 26 (74.29%) of the mothers more than 30 years of age. 5 (16.67%) of the mothers  $< 20$  years of age knew ASHA should visit for at least three ANC checkups till child delivery compared to 25 (18.52%) of women between 20 and 30 years of age group and only 4 (11.3%) of mothers with age more than 30 years. 9 (30%), 13 (43.33%), and 18 (60%) of the women in  $< 20$  years of age knew about JSSK, JSY, and availability of free treatment and referral facility for complications during pregnancy, respectively. 14 (10.37%), 38 (28.15%), and 84 (62.2%) of the pregnant women in the age group 20–30 years of age knew about JSSK, JSY, and availability of free treatment and referral facility for complications during pregnancy, respectively. Similar frequencies for pregnant women more than 30 years of age were 0 (0%), 4 (11.3%), and 17 (48.57%). None of the

**Table 1:** Comparison of knowledge and service utilization of MCH schemes among the 1<sup>st</sup> time pregnant mothers and mothers with previous pregnancy

Knowledge and service utilization	1 <sup>st</sup> time pregnant mothers (n=102) (%)	Mothers with previous pregnancy (n=98) (%)	P value
Know about TT vaccine to be given in antenatal period	68	72	0.002**
Know about cash benefit for delivering in government hospital	23	72	<0.001**
Know about free complication treatment facility	51	68	0.02**
Know phone number to call government ambulance	12	9	0.014**
Know about JSSK	18	5	<0.01**
Know about JSY	42	13	<0.01**
Registration of pregnancy in the first 20 weeks	74	31	<0.001**

\*\*Signifies significant value. TT: Tetanus toxoid, JSSK: Janani Sishu Suraksha Karyakram, JSY: Janani Suraksha Yojana, MCH: Maternal and child health

**Table 2:** Association of maternal demography with knowledge and service utilization regarding maternal health schemes (P values)

In ANC period	Age of mother	Religion	Family type	Poverty	Mother education	Mother having mobile
Pregnancy registration within 20-week gestation	<0.01**	<0.01**	<0.01**	0.02**	<0.01**	0.1
Know about vaccine given	0.09	0.01**	0.41	<0.01**	<0.01**	0.67
Know about ASHA visits	0.608	0.051	0.16	0.52	<0.01**	0.13
Know JSY	0.015**	0.004**	0.9	0.06	<0.01**	0.96
Know JSSK	0.006**	0.12	0.15	0.2	0.018**	0.37
Know about free treatment	0.34	<0.01**	0.10	0.09	0.0002**	0.02**
Will use government ambulance to come for delivery	0.07	0.14	0.32	0.1	<0.01**	0.24
Know phone number of government ambulance	0.12	0.45	0.01**	0.60	<0.01**	0.6

\*\*Signifies significant value. ANC: Antenatal care, ASHA: Accredited social health activist, JSY: Janani Suraksha Yojana, JSSK: Janani Sishu Suraksha Karyakram

pregnant mothers <20 years of age wished to use government ambulance while coming and going back from delivery nor did they knew 108 phone number to call the ambulance. 14 (10.37%) of the pregnant women in 20–30 years of age wanted to use government ambulance for transport and 17 (12.59%) knew 108 phone number to call ambulance. 4 (11.43%) of the pregnant women more than 30 years of age wanted to use government ambulance and 4 (11.43%) of them knew 108 phone number to call ambulance Table 2.

A total of 17 (100%) of the pregnant Muslim women registered after 20 weeks compared to 105 (57.3%) of the Hindu women registered within 20 weeks of gestation. All the Muslim women, 17 (100%) knew about the TT vaccination compared to 123 (67.2%) of the Hindu women knew about TT vaccination. All of the Muslim (100%) women knew about JSY compared to 55 (30%) of the Hindu women who knew about JSY. Only 4 (23.53%) of the Muslim women knew about availability of free treatment and referral service for complications during pregnancy compared to 115 (62.84%) of the Hindu women who knew about the facility Table 2.

A total of 49 (75.3%) of the mothers belonging to joint families were registered within 20 weeks of gestation as compared to 56 (41.48%) mothers belonging to nuclear families. 12 (18.8%) of the pregnant women from joint families knew the phone number of ambulance service compared to 9 (6.6%) of the women from nuclear families.

A total of 18 (78.26%) of the pregnant women belonging to BPL families registered within 20 weeks of gestation and 5 (21.75%) of them knew about TT vaccination as compared to 87 (49%) of the women from above poverty line families who registered within 20 weeks of gestation, 16 (9%) of the well to do families were registered in the third trimester of pregnancy and 135 (76.2%) of them knew about TT vaccination.

A total of 14 (63.6%) of the graduate mothers and 81 (57%) of the mothers educated up to high school registered within 20 weeks of gestation compared to only 10 (27%) of the mother who were illiterate registered in same time. 18 (81%) of the graduate mothers and 104 (73%) of mothers who

studied up to high school knew about TT vaccine compared to 18 (48.65%) of the illiterate mothers Table 2.

## DISCUSSION

The service utilization rates among mothers with previous pregnancy showed that 60 (61.2%) of them were escorted by ASHA in their previous pregnancy. Among these mothers, 67% of them received monetary benefits before discharge from hospital. 72% of the mothers paid for the vehicle which coming to the hospital during previous delivery. Among the mothers with previous pregnancy, 72% had knowledge of vaccination during ANC period, 72% knew about the cash benefits of delivering in a government hospital, 68% knew the treatment and referral for complications during pregnancy is freely available, 9% of them knew the phone number of the ambulance, 13% knew/heard about JSY, and 5% knew/heard about Janani Suraksha Karyakram. 22 (73.3%) of the pregnant women <20 years of age registered within 20 weeks of gestation and younger pregnant women were having significant higher early registration of pregnancy. Young mothers were also having higher knowledge regarding JSY and JSSK also. In this study, religion was found to have statistically significant relation with time of registration of pregnancy, knowledge regarding vaccination in ANC period, knowledge about JSY, and knowledge about free treatment and referral facility for complication during pregnancy ( $P < 0.01$ ,  $0.01$ ,  $0.04$ ,  $<0.01$ , respectively). Muslim mothers were having higher knowledge regarding TT vaccination in ANC period and knowledge about JSY, while Hindu mothers had higher awareness about availability of free treatment and referral facility. Muslim women also registered earlier than Hindu women. In our study, type of family (nuclear or joint family) has statistically significant association with time of registration of pregnancy and knowledge of ambulance service phone number ( $P < 0.01$ ,  $0.01$ , respectively). Pregnant women from joint families used to register their pregnancy earlier and had higher knowledge about ambulance helpline. Poverty in family (BPL card) was seen to be significantly associated with timing of registration and knowledge of ANC vaccine ( $P = 0.02$ ,  $<0.01$ ). Earlier registration of pregnancy was seen in women from families BPL, but knowledge among them was lower. Mothers' education was significantly associated with timing of registration of pregnancy, knowledge of ANC vaccination, knowledge of ASHA visits and ANC checkups, knowledge of JSY and JSSK, knowledge about free treatment and referral facility for complications of pregnancy, and knowledge of free transport through government ambulance and awareness of phone number for calling the ambulance ( $P < 0.01$ ,  $<0.01$ ,  $<0.01$ ,  $<0.01$ ,  $0.018$ ,  $0.0002$ ,  $<0.01$ ,  $<0.01$ , respectively). Higher education among mothers was associated with earlier registration and higher knowledge about maternal health programs.

Study was done by Kumar *et al.* in 2015 in North India showed in 48.09% cases, the rent of the vehicle is paid by

ASHA.<sup>[4]</sup> 79.39% of the pregnant females were escorted by ASHA. Study by Mondal *et al.* in 2015 in West Bengal showed 53.2% had to pay for vehicle during pregnancy.<sup>[6,7]</sup> Study by Kumar *et al.* revealed that 28% of the pregnant women did not know anything about JSY.<sup>[4]</sup> Study by Mondal *et al.* showed only 12.9% of the women were aware of all components of JSSK and 1.4% could name the JSSK.<sup>[6,7]</sup> The utilization of services in our study is less as compared to previous study; the reason may be due to lower awareness regarding services among tribal mothers.

The present study has its strength, as it includes comparison of demographic factors with knowledge and service utilization of mothers. The study had its limitations. In spite of efforts, absolute randomization could not be obtained because of the refusal of the mothers to be a part of this study, many of the mothers cited lack of time for the same. The study groups of the 1<sup>st</sup> time mothers and women with previous pregnancies were unmatched groups, hence chances of biases remain.

## Recommendation

On the basis of the findings of the study, some recommendations may be, cash incentives can be directly transferred to beneficiary account, as many of them had to pay for their vehicle for transport. Awareness about the available health facilities can be increased among the 1<sup>st</sup> time mothers through peer education and messaging health tips through mobile phones as most of the mothers have it. In a process of pregnancy, the whole family should be involved rather than individualistic approach.

## CONCLUSION

Even after several years of launching of MCH promotion schemes, still improvement is needed for proper implementation and increase in awareness among mothers in peripheral and hard-to-reach areas so that the services are utilized by the beneficiaries. Only availability of study also doesn't seem to ensure their utilization. It requires proper awareness about services and its advantages.

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**How to cite this article:** Panigrahi SK, Akarte SV. Assessment of awareness and service utilization of maternal and child health programmes among beneficiaries in a tribal district of Maharashtra. *Int J Med Sci Public Health* 2018;7(4):291-295.

**Source of Support:** Nil, **Conflict of Interest:** None declared.