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Assessment of maternity care services among pregnant women in a coastal area in central Kerala, India

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ABSTRACT

Background: Maternal care services are intended to take care about the pregnant during the antenatal, intra natal and post natal periods so as to reduce maternity related health problems. The current study tries to assess maternity care services among pregnant women in a coastal area in central Kerala, India.

Methods: The setting was Mararikkulam south panchayat and the study was cross sectional in nature. The minimum sample size of the study was calculated to be 213. A house to house survey was conducted in all the 23 wards to find out those who had a live or still birth in the last one year (2014-2015) who were our study subjects. The maternity care services were assessed using multiple indicators. In statistical analysis, data was entered in Microsoft excel and was analysed using SPSS 16.0 version

Results: As per the current study the number of pregnancies registered early i.e. within 12 weeks was 72.2%. Only 68% had all the antenatal check-ups while 26.1% had less than 4 antenatal check-ups and 5.9% had no regular antenatal check-ups. 67.7% of the mothers had taken iron and folic acid for the prescribed period of pregnancy. Ultrasound examination was done at least once during the pregnancy in 63.3% of cases and not done in 36.7%. For tetanus prophylaxis 84.5% had appropriate course of TT vaccination. 73.5% of the mothers were well aware of the danger signs of pregnancy and 21.2% were partially aware and 5.3% were unaware of the danger signs.

Conclusions: Antenatal care services are still low in coastal areas compared to other areas in Kerala

Keywords: Maternity care, Antenatal check-ups, Kerala

INTRODUCTION

"The test of any civilisation is the measure of consideration and care which it gives to the weaker members" (anonymous) is a true indicator for development of any country. In India women of child bearing age and children below 15 years constitute 57.5% of population. Mothers and children constitute a large group, but they are also a vulnerable or a special risk group requiring special care. Mother and child have to be considered as a single unit. The health of child is closely interlinked to that of a mother.

Maternal mortality refers to deaths due to complications from pregnancy or childbirth. About 830 women die from pregnancy- or childbirth-related complications around the world every day. It was estimated that in 2015, roughly 303 000 women died during pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings, and most could have been prevented.² From 1990 to 2015, the global maternal mortality ratio declined by 44 per cent – from 385 deaths to 216 deaths per 100,000 live births, according to UN inter-agency estimates.³ This translates into an average annual rate of reduction of 2.3 per cent. While impressive, this is less than half the 5.5 per cent annual rate needed to achieve

the three-quarters reduction in maternal mortality targeted for 2015 in Millennium Development Goals. Maternal mortality has become much lower than ever before in the 21st century due to good interventions but the values are still unacceptably high in Asia and Africa. Out of all deaths among 15-44 age groups 14.6% around the world are due to maternal conditions.

As per the special bulletin on maternal health calculated using the RHIME technique in 2014 the MMR of India stood at 167/ lakh live births with maximum deaths in the 20-29 age group (68%). The MMR ranged from 61 in Kerala to 300 in Assam. It was higher in rural areas compared to urban areas. Causes of maternal mortality are many and varied. As per the planning committee report of government of India the most common causes of maternal deaths are Haemorrhage 30% Anaemia 19% Sepsis 16% Obstructed labour 10% Abortion 8% Toxaemia 8% Others 8%. Most of these conditions are preventable if given proper maternal care.

Women's health during the reproductive or fertile years (between the ages of 15 and 49 years) is relevant not only to women themselves, but also has an impact on the health and development of the next generation. For many women, the years between puberty and menopause offer multiple opportunities for personal fulfilment and development but high chances of mortality also prevail. Pregnancy and childbearing are particularly risky for women who suffer from malnutrition especially anaemia. Pregnancy and child birth are physiological conditions. Any intervention during pregnancy can make a difference between life, death and malnutrition of both mother and the baby.

Proper maternal care including early registration of pregnancy, proper antenatal check-ups, adequate iron and folic acid supplementation, TT vaccination, Proper investigations during antenatal period, aseptic precautions during delivery especially in trained hands can go a long way in reducing maternal mortality. Kerala also known as gods own country has been blessed with good health indicators. But there is still scope for improvement in maternal care services especially in rural areas including coastal areas. In coastal areas most of the people belong to fisherman community and their socio-demographic characteristics are different from that of other areas. Not enough studies have been conducted previously, in coastal areas to obtain data on maternity care services. The current study tries to assess maternity care services among pregnant women in a coastal area in central Kerala, India.

METHODS

A cross sectional study was conducted in Mararikkulam south panchayat, Aryad block, Alapuzha district in Kerala. Mararikkulam south is a coastal village bordered by Arabian Sea on the west, National highway 47 on the east, Mararikulam north on the north and Alappuzha

municipality on the south. The panchayat covers an area of 19.07 square km with population of 21277 and has 23 wards. The study period was from 2015 January till July 2015. The majority of population belongs to low socioeconomic strata and the main occupation is fishing and coir making.

Sample size

As per the data of National family health survey 4 the percentage of pregnant women who received Mother and Child Protection (MCP) card which can be taken as an indicator of early registration of pregnancy was 84.2%. Applying this to the formula 4pq/d2 with an absolute precision of 5%, (4X0.842X0.158/0.05X0.05 the minimum sample size of the study was calculated to be 213.

Sampling technique

Inclusion criteria

A house to house survey was conducted in all the 23 wards to find out those who had a live or still birth in the last one year (2014-2015) who were our study subjects. Those who were not willing were excluded. Among those who gave consent a pretested semi structured interview schedule was administered after thorough training for ASHA workers and anganwadi workers of the area. The maternity care services were assessed using the following indicators. Early registration of pregnancy before 12 weeks, Number of antenatal check-ups, whether basic lab investigations done or not, Iron and folic taken or not, Tetanus prophylaxis, Awareness about pregnancy related complications, Care giver during pregnancy and delivery, JSY benefits availed or not.

Statistical analysis

The data was properly coded and entered in Microsoft excel and further analysis was done using the software SPSS16.0 version. The relevant results have been expressed as percentages.

RESULTS

As per the house to house survey a total of 245 women who delivered last year were identified out of a total of 11668 females in the reproductive age group (15-49). The basic demographic details of the study population is given in Table 1.

As per the current study the number of pregnancies registered early i.e. within 12 weeks was 72.2%. For majority of the females the care giver during pregnancy was government doctors (82.9%). Only 68% had all the antenatal check-ups while 26.1% had less than 4 antenatal check-ups and 5.9% had no regular antenatal check-ups. 67.7% of the mothers had taken iron and folic acid for the prescribed period of pregnancy. Ultrasound

examination was done at least once during the pregnancy in 63.3% of cases and not done in 36.7%. For tetanus prophylaxis 84.5% had appropriate course of TT vaccination. 73.5% of the mothers were well aware of the

danger signs of pregnancy and 21.2% were partially aware and 5.3% were unaware of the danger signs the details are given in Table 2.

Table 1: Basic demographic profile of the study population.

S.no	Particulars	Classification	Frequency N (%)
1	Age group (in years)	15-20	32 (13.5)
		21-35	164 (66.9)
		Above 35	49 (20)
2	Religion	Christian	118 (48.46)
		Hindu	122 (49.98)
		Muslim	5 (2.54)
3	Education	Illiterate	10 (4)
		Primary	91 (37)
		Middle/High	81 (33)
		Higher secondary	34 (14)
		Above HS	29 (12)
4	Occupation	House wives	103 (42)
		Private jobs/job in market	54 (22)
		Manual labourer	39 (16)
		Govt. employee	21 (8)
5	APL/BPL	BPL	102 (41.5)
		APL	143 (58.5)

Table 2: Maternal care indicators.

S.no	Maternal care indicator	Classification	No (%)
1	Registration of pregnancy	Before 12 weeks	177 (72.2)
		12-20 weeks	37 (15.1)
		>20 weeks	12 (4.9)
		Not registered	19 (7.8)
2	Antenatal check ups	4 or > 4 check ups	166 (68)
		< 4 check ups	64 (26)
		No regular check ups	15 (6)
3	Care giver during pregnancy	Government doctor	203 (82.9)
		Private doctor	35 (14.3)
		No professional care	7 (2.9)
4	Iron and Folic acid (IFA) tablet intake	Regular intake	166 (61.7)
		Irregular intake	69 (28.2)
		Not taken	10 (4.1)
5	Atleast one ultrasound examination	Yes	155 (63.3)
		No	90 (36.7)
6	Tetanus Prophylaxis	Adequate	207 (84.5)
		Inadequate	33 (13.5)
		Unimmunized	5 (2)
7	Awareness about danger signs of pregnancy	Well aware	180 (73.5)
		Partially aware	52 (21.2)
		Unaware	13 (5.3)

As far as basic laboratory investigations during pregnancy were concerned urine albumin estimation was done in 65.3%, Not done in 17.1% and 17.6% do not remember whether done or not. For haemoglobin, estimation was done in 70.2% pregnant women, Not done in 14.3% and 15.5% do not remember whether done or

not. Blood sugar estimation was done in 64.9%, not done in 16.7% and 18.4% do not remember whether done or not. Blood pressure estimation was done in 86.1%, not done in 5.7% and not documented or do not remember in 8.2%. This has been depicted in Figure 1. Majority of the women delivered in a government hospital (82.47%) and

66.7% had a normal delivery. Of the study population only 42.2% had availed JSY benefits. The details regarding the same have been given in Figures 2-4.

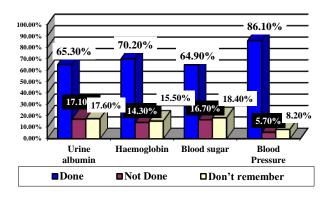


Figure 1: Utilisation of basic lab services in maternal care.

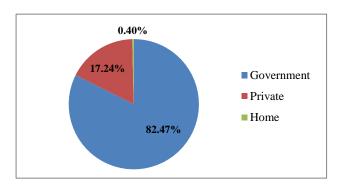


Figure 2: Place of child birth.

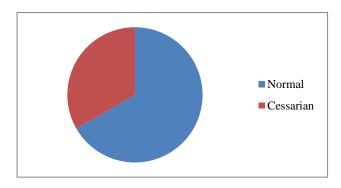


Figure 3: Type of labour.

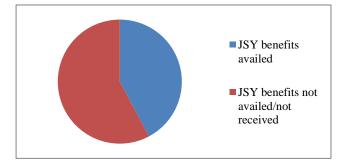


Figure 4: Utilisation of JSY benefits.

DISCUSSION

Early registration of pregnancy is imperative for the timely diagnosis and treatment of pregnancy related morbidities. As per our study only 72.2% had registered their pregnancy early and 7.8% were not registered at all. This is low compared to the study conducted by Murthy et al in Karnataka which reported a 98.5% coverage of 1st trimester registration of pregnancies. 10 Another study by Patel et al in Maharashtra reported a proportion of 19.6% as early registration of pregnancies, while the majority, 80.4%, registered after that time. The mean gestational age at the time of registration was 20.3±6.2 weeks. 11 On the other hand Metgud et al in their study in a rural area of North Karnataka reported 92.31% registration of pregnancies, but only 30.00% of them were registered in the 1st trimester of pregnancy. 12 Thus it can be seen that percentage of early registration of pregnancy varies from 19% to 98% in various studies.

As per the current study 82.9% preferred government doctors for their antenatal care. This is usually the case in rural areas as shown in the study by Vincent et al in Pondicherry which showed most of the women in rural area seek care in government facility due to its availability, accessibility and affordability as per the qualitative study conducted by them. Mini and Sidhiq in their study assessing pattern of antenatal care among women utilising a tertiary care centre in government sector for delivery, found that 59% had antenatal care services from Government institutions and the remaining 41% from private centres. In the study assessing pattern of an antenatal care services from Government institutions and the remaining 41% from private centres.

Regular antenatal check-ups are of utmost importance in ensuring fruitful culmination of pregnancy for both mother and baby. But in the current study only 68% had all the antenatal check-ups while 26.1% had less than 4 antenatal check-ups and 5.9% had no regular antenatal check-ups. As per the study conducted by Roy et al in Lucknow, UP, 85.5% of the beneficiaries surveyed were found to receive at least three antenatal care services from any health facility. As per the study conducted by Singh et al in north India 62% had made 3 or more antenatal check-ups, 26.6% got 1-2 antenatal check-ups while 11% pregnant women had no antenatal check-ups at all. 16

Current study showed that 67.7% consumed 100 or more IFA Tablets during the antenatal period, which is lower than the state level prevalence of 75.6%. ¹⁷ On the other hand Metgud et al showed a coverage of only 59.68% among pregnant women in their study in the rural area of North Karnataka. ¹² In the current study 84.5% had been properly vaccinated with TT which is line with the DLHS data where 93.6% got at least one dose of TT. ¹⁷ As per study conducted by Singh et al 77% of women got 2 doses of TT or booster dose. 13.6% did not get immunised with TT which was 2% unimmunised in the present study. ¹⁶ Niharika and Bhavani et al also showed a similar coverage of 83.5% for the recommended two

doses of T.T among antenatal mothers in their study in Warangal, Telangana. ¹⁸

As per the current study 73.5% were fully aware about danger signs of pregnancy which is a good sign. As per the study conducted by Demissie et al in Ethopia 53% of the study participants have poor awareness on danger signs of pregnancy.¹⁹ But as per the study conducted by See Teng et al in Malaysia more than half of the women had a fair (28.1%) or poor(23.6%) level of knowledge about pregnancy danger signs.²⁰

Urine albumin testing is a very important predictor of developing preeclampsia in pregnancy. This has been shown in studies like the one conducted by Fatema et al in Bangladesh that early pregnancy levels of micro albuminuria can be used as predictors of preeclampsia with high negative predictive value.²¹ but the present study only 65% had done urine albumin which is disappointing. Haemoglobin estimation was done in the current study in 70.2%. This is similar to the data given DLHS4 Kerala which reported that 79.4% had haemoglobin estimation done in pregnancy. 17 It is heartening to know that BP measurements were done regularly in the study sample. Blood pressure measurement is of paramount importance in predicting preeclampsia and later chances of small for date babies as shown as per the study conducted by Starling et al which showed a greater second to third trimester increase in maternal arterial pressure was associated with greater odds of small-for-gestational-age birth weight.²²

In the current study among those eligible to receive JSY benefit's 57.8% received JSY (Janani suraksha Yojna benefit's within a short time. As per the study conducted by Rajarajan et al in Puduchery about 46% of the pregnant ladies availed cash transfer benefit. ²³ Others did not receive it or did not apply for JSY benefits but Murty et al reported that 65.5% of antenatal women availed JSY benefits in their study in Mysore district, Karnataka, India. ²⁴

At least 1 Ultrasound examination during pregnancy is vital in determining growth and abnormalities of the foetus. As per the current study it was 63.3%. As per NFHS 3 data percentage of pregnancies with an ultrasound was 23.5%. ²⁵ As per the study conducted by Ikeako et al the number of respondents who had ultrasonography in their previous pregnancies was 58.7%. ²⁶ But this is lower than the study conducted by Huang et al in rural Eastern China during antenatal care, 96.1% women received ultrasound scans and the average reported number of scans was 2.55. 46.8% women were screened for 3 or more times with the maximum number being 11 scans. ²⁷

CONCLUSION

The present study proves that even in a state like Kerala where the human development index is the highest in the

country, antenatal services are finds to be insufficient in reaching coastal areas. Therefore these services are to be further strengthened in these areas so as to reach the sustainable development goals.

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