

Health-seeking behaviour among antenatal and postnatal rural women in Kancheepuram District of Tamil Nadu: A cross-sectional Study

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ABSTRACT

Introduction: Maternal morbidity and mortality is still a major public health challenge. Lack of proper birth plan and delay in identification of pregnancy complications is one of the major causes of maternal morbidities and deaths, especially in the rural areas. **Aim:** The study was conducted with the aim to evaluate the health-seeking behaviour for obstetric care services among the antenatal and postnatal mothers in a rural area of Tamil Nadu. **Materials and Methods:** This descriptive cross-sectional study was done among antenatal and postnatal mothers registered in the Rural Health Training Centre, in Sripuram area of Kancheepuram district, Tamil Nadu during 2017. About 150 antenatal and 150 postnatal mothers were selected by simple random sampling method. A pre-tested structured questionnaire was used to collect relevant data which was analysed using the SPSS version 22. **Results:** Only 21% of the study participants had adequate knowledge regarding the danger signs of pregnancy and the major determinants were maternal literacy and adequate prenatal care. Regarding the health-seeking behaviour, 62.3% of them preferred primary health centres as preferred place of delivery, 87.3% of them had received adequate prenatal care and it 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:** 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: Care seeking, danger signs, maternal, pregnancy, prenatal care

Introduction

Maternal death is defined by the World Health Organisation (WHO) as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or

incidental causes.^[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]

The Reproductive and Child Health (RCH) Programme – Phase I was launched in India during 1997–98 with one of the key components being provision of essential obstetrics care. The essential obstetrics care intends to provide the basic maternity

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services to all pregnant women through early registration of pregnancy, provision of minimum three antenatal checkups by ANM/doctor, provision of safe delivery at home or in an institution and provision of three postnatal checkups. RCH Programme – Phase II was launched in the year 2005, had emergency obstetric care as one of the core strategies to reduce maternal mortality by providing 24 hour delivery services, provision for surgical interventions like caesarean section, safe abortion services, essential laboratory facilities and referral services.^[5]

For effective implementation and better utilisation of the components of RCH services, a ‘Mother Child Protection’ (MCP) card has been developed as a tool, which is a graphical presentation of self-learning information pertaining to antenatal, intranatal, postnatal mother and infant care details and practices. The MCP card propagates adequate knowledge on obstetrics care and helps the families to learn, understand and follow practices for achieving good health for pregnant women, young mothers and their children.^[6]

But in spite of all these efforts, the obstetrics care services 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.^[3,7]

One of the major interventions which could help in addressing these delays is by promoting the Birth Preparedness and Complication Readiness (BPACR) among women to help them become aware of the danger signs of pregnancy and become aware of when to seek professional medical care.^[3]

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.^[8] 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 utilisation of health care among antenatal 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.^[9]

In order to develop effective and appropriate health policies regarding RCH care in a community, it is necessary to 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.^[10]

Based on this background, this study was planned and carried out in a rural area of Kancheepuram 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.

Materials and Methods

Study area and study population

This is a community-based cross-sectional descriptive study. The study was carried out in the field practice area located in Sripuram in Kancheepuram district. As per the records maintained in the Rural Health Training Centre, the area covers approximately 52,300 population spread over Lakshmipuram and Nagalcani wards. The study area chosen was Lakshmipuram which has a population of 26,840 (Male: 13,856 and female: 12,884). There were 425 antenatal and 380 postnatal women residing in the study area who were defined as the study population.

Sample size and sampling method

All the 425 pregnant and 380 postnatal mothers who were registered in the Rural Health Training Centre, Sripuram, during the year 2017 were listed out. From among the listed, 150 antenatal and 150 postnatal women were selected by the simple random sampling method.

Tool for data collection

A pretested structured interview schedule was prepared to elicit information related to socio-demographic characteristics, health-seeking behaviour of the study participants, birth preparedness which was assessed in the form of adequate prenatal care (≥ 4 antenatal visits) and complication readiness in terms of awareness regarding danger signs of pregnancy.

Awareness of danger signs in each of the three phases, i.e., pregnancy (antenatal), childbirth (natal) and postpartum period were assessed.^[11] 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 danger signs of pregnancy listed, were considered to be having adequate knowledge.

Pilot study

Pretesting was carried out for standardising the questionnaire and based on the observations made during the pilot testing, necessary changes were made in the questionnaire. The results of the pilot study were not included in the final analysis.

Inclusion and exclusion criteria

All the willing pregnant mothers and postnatal women residing in the rural field practice area of the medical college at the time of study were included. Pregnant and child-rearing mothers who were not willing to participate in the study and those who were not permanent residents of the study area were excluded.

Data collection methods

This community-based cross-sectional study was carried out among 150 pregnant and 150 postnatal mothers by making house visits to the identified and willing study participants. The purpose of the study was clearly explained to them and informed consent was obtained in local (Tamil) language before administering the structured interview schedule. The questions related to socio-demographic and related obstetric factors were collected from them. The data collection were carried out by the trained interns posted in the RHTC from October to December 2017.

Statistical analysis

The data entry were done using MS Excel Software and analysed using the SPSS version 22 (manufactured by SPSS Inc. Chicago, USA). The descriptive and analytical statistics were presented in frequency tables and graphs. Factors associated with the study variables were analysed by calculating the strength of association by odds ratio (OR) and significance at 95% confidence interval (CI) using the Chi-square test and *P* value.

Ethical committee approval and informed consent

Institutional ethics committee of the medical college had approved to carry out this study. Informed consent in the local language (Tamil) was obtained from the study participants before administering the questionnaire.

Results

The results of the study to evaluate the birth preparedness and complication readiness among antenatal and postnatal mothers and the 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 58% of them were found to be in the age group of 21–25 years. Regarding the educational status of the participant and their spouse, around 46% and 42.3% of them, respectively, had education up to secondary school. According to the BG Prasad's Socio Economic Status Classification, 41.7% of them belonged to middle class followed by lower middle class (39%). Nearly 61% of the study participants were belonging to nuclear family type and most of them belonged to Hindu religion (88%).

Table 2 shows the health-seeking behaviour and pregnancy characteristics of study participants. It was found that nearly 62.3% of the participants preferred primary health centre (PHC) for their safe delivery. For antenatal care, 43.7% of the participants had their husband accompanying them to the health centres and 42.7% of the participants reported that their husband was the decision maker regarding the place of delivery of the child. Most of the study participants received iron and folic acid (IFA) tablets (94.3%) and tetanus toxoid (TT) injection (95.7%). Around 87.3% of them had adequate prenatal care and 70.3% of them had adequate gestational weight gain during pregnancy.

Table 1: Socio-demographic characteristics of the study participants

Characteristics	Frequency (n=300)	Percentage
Age group (years)		
<20	35	11.7
21-25	174	58.0
26-30	73	24.3
>30	18	6.0
Education of mother		
Illiterate	14	4.7
Primary school	29	9.7
Secondary school	138	46
Higher secondary school	86	28.7
Graduate or above	28	9.3
Profession or honours	5	1.7
Education of husband		
Illiterate	20	6.7
Primary school	30	10
Secondary school	127	42.3
Higher secondary school	85	28.3
Graduate or above	32	10.7
Profession or honours	6	2.0
Religion		
Hindu	264	88
Christian	22	7.3
Muslim	14	4.7
Socio-economic status (BG Prasad Classification)		
Upper class	9	3
Upper middle class	45	15
Middle class	125	41.7
Lower middle class	117	39
Lower class	4	1.3
Type of family		
Nuclear	183	61
Joint/three generation	117	39

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 were bleeding from vagina before 37 weeks (73.7%) and severe pain in the abdomen (69%). None 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 21% of the study participants were found to be having adequate knowledge regarding the danger signs of pregnancy [Figure 1].

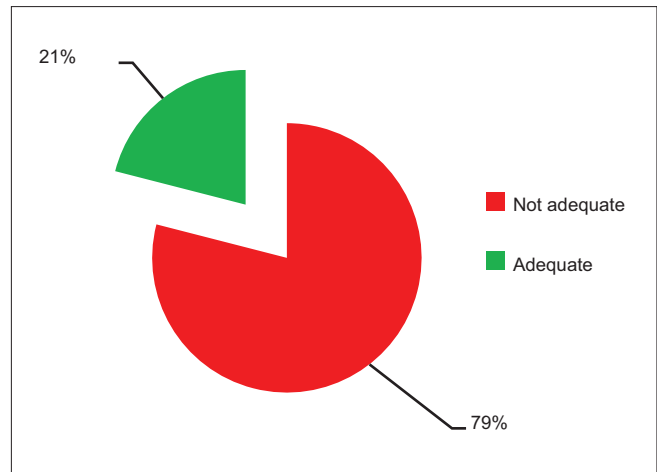
Table 4 shows the breastfeeding and weaning practices of the study participants. Regarding the breastfeeding practices of the study

Table 2: Health-seeking behaviour and pregnancy characteristics of study participants

Characteristics	Frequency (n=300)	Percentage
Preferred place of delivery		
PHC	187	62.3
CHC	8	2.7
District hospital	90	30
Tertiary hospital	15	5.0
Adequacy of prenatal care		
Not adequate	38	12.7
Adequate	262	87.3
Persons accompanied to health facility for obstetric care		
Husband	131	43.7
Mother-in-law	36	12
Mother	75	25
Health care provider	14	4.7
Close relatives	25	8.3
Self	19	6.3
Final decision making regarding the place of birth		
Husband	128	42.7
Mother-in-law	31	10.3
Mother	94	31.3
Health care provider	21	7
Close relatives	16	5.3
Self	10	3.3
Received IFA tablets		
No	17	5.6
Yes	283	94.3
Received TT injection		
No	6	2
Yes	287	95.7
Not applicable	7	2.3
Total number of pregnancies		
One	162	54
Two	125	41.7
Three	13	4.3
Adequacy of gestational weight gain (9-11 kg) ^[5]		
Not adequate	89	29.7
Adequate	211	70.3
Persons who conducted delivery (n=150)		
Doctor	107	71.4
ANM	2	1.3
Nurse	41	27.3
Mode of delivery (n=150)		
Normal delivery	103	68.7
Caesarean	47	31.3

participants, it was found that 67.3% of the study participants initiated their breastfeeding within 1 hour of birth, 97.3% of them were encouraged feeding of colostrum, only 58% of them practiced exclusive breastfeeding and 27.3% of them started their weaning practice even before 6 months of age of the child.

Among the study participants, it was found that the odds of having inadequate knowledge regarding danger signs

**Figure 1: Knowledge regarding the danger signs of pregnancy among the study participants**

of pregnancy were 3.3 times higher among those who were <30 years of age (OR: 3.30, 95% CI: 0.95–2.19). The association was also found to be statistically significant (P : 0.012). It was found that the participants who were illiterate had 4 times increased odds of having inadequate knowledge regarding danger signs of pregnancy (OR: 4.08, CI: 0.94–17.64). The association was also found to be statistically significant (P : 0.042). Those who had inadequate prenatal care during their pregnancy had 2.72 times increased odds of being less aware of the danger signs of pregnancy (OR: 2.71, CI: 1.03–7.16) [Table 5], which is also statistically significant (P : 0.036).

Among the postnatal mothers, it was found that those who had adequate prenatal care had increased odds of adequate gestational weight gain (OR: 2.59, CI: 1.12–5.97), practicing exclusive breastfeeding (OR: 3.36, CI: 1.29–8.74), following healthy weaning practices (OR: 2.87, CI: 1.17–7.40) and consuming full course of IFA medication (OR: 5.33, CI: 1.66–17.08). The association between these characteristics and adequate prenatal care was also found to be statistically significant (P < 0.05) [Table 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. Owing to the limited information available regarding these factors, this study was carried out and it yielded interesting results which are discussed below.

From this study, it was found that adequate knowledge regarding the danger signs of pregnancy was present in only 21% of the study participants. In studies done by Gopalakrishnan and Rama and Acharya *et al.*, around 46% and 41% of the participants had adequate knowledge regarding the danger signs and complications of pregnancy and in a study done by Dave *et al.*,

Table 3: Awareness of danger signs of pregnancy among study participants^[11]

Characteristic	Frequency (n=300)	Percentage
Bleeding from vagina before 37 weeks	221	73.7
Severe pain in abdomen	207	69
Breathlessness	89	29.7
Swelling in face or body	120	40
Reduced foetal movements	103	34.3
High fever	135	45
Malpresentation	11	3.7
Slow progress of labour more than 12 h	9	3
Excessive bleeding from vagina	35	11.7
High fever with blurring of vision	0	0
Fits with severe pain in abdomen	28	9.3
Early rupture of bag of water	67	22.3

*Multiple responses for each variable

Table 4: Breastfeeding practices of postnatal women

Characteristics	Frequency (n=150)	Percentage
Early initiation of breastfeeding		
Yes	101	67.3
No	49	32.7
Practices regarding colostrum		
Not encouraged/do not know	4	2.7
Encouraged	146	97.3
Exclusive breastfeeding		
Yes	53	35.3
No	63	42
Currently breastfed	34	22.7
When was weaning started		
Before 6 months	41	27.3
After 6 months/not yet started	109	72.7

it was found to be only 8%.^[6,7,12] These variation 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 >30 years of age had a proportionately higher knowledge regarding danger signs of pregnancy (44.4%) when compared to those who were <30 years of age (19.5%) and the association was also found to be statistically significant. This may be due to the fact that those who were >30 years of age would have been well informed about pregnancy and its complications. These findings are contradictory to the findings by Akshaya and Shivalli and Ghosh *et al.*, where they found that the maternal age did not play a role in the adequacy of knowledge regarding the BPACR.^[10,13] 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 42% of them had an education up to secondary school. Similar results were obtained in a study done by Akshaya and Shivalli.^[10] There was a statistical significant association found between maternal literacy and adequate knowledge regarding the danger signs of pregnancy. Similar results were found in a study carried out by Agarwal *et al.*^[14] These findings highlight the fact that literacy level plays a major role in determining the BPACR among women.

Regarding the health-seeking behaviour of the study participants, 62.3% of the study participants preferred PHCs' as their preferred place of delivery. Similarly, Jain *et al.* found that the maternal health-seeking behaviour from the PHC was 68% in

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

Characteristics	Total n=300	Adequate knowledge regarding the danger signs of pregnancy		Chi-square	P	Odds ratio	95% CI
		Number	%				
Age of the participant							
<30 years	282	55	19.5	6.344	0.012*	3.30	0.95-2.19
>30 years	18	8	44.4				
Literacy of the participant							
Illiterate	30	2	6.7	4.128	0.042*	4.08	0.94-17.64
Literate	270	61	22.6				
Literacy of husband							
Illiterate	20	6	30	1.046	0.306	0.59	0.21-1.62
Literate	280	57	20.4				
Type of family							
Nuclear	183	36	19.7	0.499	0.480	1.22	0.69-2.15
Joint	117	27	23.1				
Socio-economic status							
Upper class	54	10	18.5	0.664	0.717	-	-
Middle class	125	29	23.2				
Lower class	121	24	19.8				
Adequate prenatal care							
Not adequate	50	5	10	4.376	0.036*	2.72	1.03-7.16
Adequate	250	58	23.2				

*P<0.05 statistically significant at 95% CI using the chi-square test

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

Characteristics	Total n=150	Adequate prenatal care		Chi-square	P	Odds ratio	95% CI
		No	%				
Adequacy of weight gain during pregnancy							
Not adequate	46	32	69.6	5.243	0.022*	2.59	1.12-5.97
Adequate	104	89	85.6				
Exclusive breastfeeding							
No	55	42	76.4	6.698	0.010*	3.36	1.29-8.74
Yes	95	87	91.6				
Weaning started							
Before 6 months	41	31	75.6	5.0529	0.024*	2.87	1.11-7.40
After 6 months/not yet started	109	98	89.9				
Consumed IFA tablets >3 months							
No	13	8	61.5	9.358	0.002*	5.33	1.66-17.08
Yes	136	112	82.4				

*P<0.05 statistically significant at 95% CI using the Chi-square test

Agra District.^[15] But Abdulrida *et al.* in Baghdad found that about 55.2% of the mothers sought care from government PHCs.^[16] Qureshi *et al.* in their study on healthcare-seeking behaviours in pregnancy in rural Sindh in Pakistan found that private health facilities were often preferred if the family can afford them, over the government health facilities.^[17]

The better utilisation of the PHCs in this study may be due to the attractive benefits provided by the government schemes through primary health care in the form of cash incentives, 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 (94.3%) and TT injection (95.7%) during the course of their pregnancy period. Similar findings were obtained in a study done by Vincent *et al.*, where among the postnatal mothers, 82.4% of them consumed IFA tablets for >90 days.^[18] Non-compliance in the IFA medication in some of them would have been due to the adverse effects like nausea and vomiting. Similar findings were obtained in studies conducted by Jha *et al.* and Kotecha *et al.*^[19,20] This shows the efficacy of these services provided by the government health centres.

Regarding the final decision making on choosing the place of birth, it was found that husbands (42.7%) 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 Qureshi *et al.*^[17] 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.

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 utilisation of maternal health care services.^[21]

It was found that nearly 87.3% 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 Jha *et al.*, but contradictory findings were observed in studies done in rural setting by Ghosh *et al.* and Saha *et al.*, where only 50% and 60% of the participants had adequate antenatal visits, respectively.^[13,18,22] 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.^[23] Among the study participants, it was found that 70.3% of them had adequate gestational weight gain. There was a statistically significant association found between adequate gestational weight gain and adequate prenatal care (in the terms of antenatal visits). Similar findings were observed in a study done by Yeo *et al.*^[24]

Regarding the breastfeeding practices among the postnatal mothers in the study population it was found that around 95% of them practiced exclusive breastfeeding and there was a statistically significant association found between practice of exclusive breastfeeding and adequacy of antenatal visits. These findings are similar to the study conducted by Deepanrajan *et al.*^[25] This shows that health workers and medical officers play a major role in creating awareness about exclusive breastfeeding practices among antenatal and postnatal mothers.

Tamil Nadu is in the forefront of delivering the RCH services through the better established health care delivery system, particularly through the extensive network of PHCs, showing better health indicators. But 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.^[6]

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%.^[10,11,26] 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 utilisation and reduce maternal and infant morbidity and mortality.

Limitations

One of the limitations 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 field practice area as per convenience, covering a small geographical area.

Conclusion

From this study it was found that adequate knowledge regarding the danger signs of pregnancy was present in only 21% 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 utilisation of these health services which in turn depends on their health-seeking behaviour for which, the important determinants include support of family members and the literacy of the participants, adequate prenatal care, strengthening of public health infrastructure and employment of required number of health personnels corresponding to the patient load.

The primary care physicians and the supporting health professionals should take necessary steps to provide health education and awareness creation regarding the danger signs of pregnancy either at the personal level or in the form of mass public education to all the expectant pregnant mothers. This will lead to overall reduction in the maternal morbidity and mortality.

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Conflicts of interest

There are no conflicts of interest.

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