

A Cross-Sectional Study on Intranatal and Postnatal Healthcare Usage among Mothers in Fishermen Community of Kovalam Area in Kanchipuram District, Tamil Nadu

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Abstract:

Introduction: Globally, most of the maternal deaths are occurring in the developing countries. Both intranatal and postnatal healthcare services play a major role in improving the maternal health as well as reducing the maternal mortality. **Aims & Objectives :** To assess the utilization of intranatal and postnatal health services and to identify the factors influencing their utilization among women of fishermen population in Kanchipuram district, Tamil Nadu. **Method :** The cross-sectional study was done among the mothers in Kovalam area of Kancheepuram district. Details were collected using a pre-tested questionnaire and analyzed using statistical software. **Results :** The study included 284 mothers of which 35% were illiterates. Delivery was conducted by skilled personnel in 80.28% of pregnancies. During the postnatal period 35.91% of the mothers had more than one postnatal visit, 54.58% mothers had only one visit and 9.51% had no postnatal visit. 48.24% of the mothers were beneficiaries of Janani Suraksha Yojana scheme and also only 45.77% had received cash benefits from Dr. Muthulakshmi Reddy scheme. Better levels of education and socio economic class were found to be significantly associated with better utilization of intranatal and postnatal services. **Conclusion :** This study reveals the fact that maternal health service schemes were not fully utilized by the community and improving the literacy status & socio-economic status will have a better impact on utilization.

Key words: Fishermen, Intranatal care, Maternal health, Postnatal care, Utilization.

Introduction:

According to World Health Organization (WHO) reports 830 women are dying every day from pregnancy or childbirth related complications worldwide. The maternal mortality ratio in developed countries is 12 per lakh live births in contrast to 239 per lakh live births in developing countries. ^[1] India alone accounts for 45,000 maternal deaths in 2015 and the Maternal Mortality Ratio (MMR) in our country is 167 per lakh live births during 2011-13. ^[2] It is of utmost importance to have proper intranatal care by skilled health personnel and postnatal care in the weeks after child birth, as timely management can save the lives of both mother and child.

In India, the total fishermen population was about 4 million living in 8.64 lakh families. 61% of the fishermen population was living below the poverty line. Sex ratio among them was 928 females per 1000 males and the family size on an average was 4.63. ^[3] The fishermen population is being considered as a marginalized and special group owing to their varied socio-cultural practices, low socio-economic status, low literacy levels and possibly less awareness about the healthcare services being provided. Taking into account of the above details, this study has been planned to identify the usage of intranatal and postnatal health care services and the factors influencing the usage among fishermen population in Tamil Nadu.

Method :

This study was a community based cross-sectional study to assess the utilization of maternal health services among women of fishermen population and it was conducted among women residing in Kovalam (fishermen area) village in Thiruporur taluka of Kanchipuram district. The study was done between April 2015-September 2015 (6 months). The study was done among married women who have delivered a child in the past 5 years, who were a resident of the study area. Unmarried women, those women who were not residents of the study area and those who were not willing to participate in the study were excluded from the study.

The sample size was calculated on the basis of 49.6% of pregnant women having received postnatal care in rural areas of Kancheepuram, district as per DLHS- 4 data, using the formula, $N = Z_{\alpha}^2 p \times q / d^2$, sample size comes to 265. [4] Assuming 10% non responsiveness, the sample size is taken as 290. For the study purpose Kovalam village in Thiruporur taluka of Kanchipuram district was chosen, since the area is highly inhabited by fishermen population. With the help of the local health authorities and the maternal-child health registers available with them, a complete list of mothers from the fishermen families, who have delivered in last 5 years was prepared and the study subjects were selected by simple random technique using computer generated random numbers.

The study was done by using a pre- tested, semi-structured questionnaire to collect data from the participants. The study questionnaire was divided into three parts as follows: Part I- Socio Demographic details- Basic details such as age at child birth, education, occupation, income, etc. Part II-Details regarding delivery by skilled personnel (doctors/ trained nurse/trained dais/etc.) or unskilled personnel (untrained dais/quacks/etc.), mode of delivery, place of delivery and details of any intranatal complications; Part III- Details about the number of post natal visits, any complications during the period, intake of iron and folic acid tablets and about family planning methods adopted were

enquired. Whether received benefits under Dr. Muthulakshmi Reddy scheme (cash benefit scheme in Tamil Nadu)/ Janani Suraksha Yojana (JSY) was also asked. Socio-economic classification was done using Modified BG Prasad (2015) classification based on Tamil Nadu Consumer Price Index of August 2015 value of 124.5. [5]

Initially permission to conduct the study was obtained from Institutional ethical committee. With the help of the local health worker, the eligible mothers were identified. Informed and written consent was obtained from the participants. Confidentiality was guaranteed to each participant. Details about the basic socio-demographic profile and utilization of health services were obtained as per the questionnaire. Data collected was entered into MS Excel and then analyzed using SPSS 16.0 software. Categorical data were represented by percentages and proportions. To test the association Chi square test was used for categorical variables and P value < 0.05 was taken as statistically significant.

Results:

The study included 284 mothers from Kovalam area of Kancheepuram district. Among them, 57% (162) were in the age group of 21-25 years, 22% (63) were <20 years, 19% (54) were of 26-30 years and only 2% (5) were >30 years at the time of child birth.

Among the study participants 35.21% (100) were illiterates, 34.51% (98) have studied till primary education, 19.37% (55) have done secondary education, 9.86% (28) have done some under graduation and remaining 1.06% (3) have studied till post graduation. With regards to their occupation, 37.68% (107) of the mothers were homemakers, 45.42% (129) were unskilled workers, 6.69% (19) were having semi skilled job and remaining 10.21% were doing skilled work. Among the mothers enquired 61.27% (174) were having their first child, 27.11% (77) having second child, 8.45% (24) were having their third and remaining 3.17% (9) were having their fourth child. According to modified B.G.Prasad classification 45.07% (128) of the study subjects belong to socio-economic class

Table 1: Utilization of Intranatal Healthcare services

VARIABLE	SUB CATEGORY	FREQUENCY (N=284)	PERCENTAGE (%)
Skilled attendance at delivery	Skilled	228	80.28
	Unskilled	56	19.72
Mode of delivery	Normal	157	55.28
	Caesarean	127	44.72
Any complications during delivery	Yes	118	41.55
	No	166	58.45
Type of complication	Bleeding	31	26.27
	Fits	14	11.86
	Diabetes mellitus/ Hypertension	37	31.36
	Fever	16	13.56
	Others*	20	16.95

*-prolonged/obstructed labour, placenta related complications, uterine complications, etc.

Table 2 : Utilization of Postnatal Healthcare services

VARIABLE	SUB CATEGORY	FREQUENCY (N=284)	PERCENTAGE (%)
No. of post natal visits	1	155	54.58
	2	88	30.98
	3	8	2.82
	>3	6	2.11
	No visit	27	9.51
No. of Iron and folic acid tablets taken	<50	122	42.96
	50-100	45	15.85
	100-200	15	5.28
	Not taken	102	35.92
Any complications during post natal period	Yes	89	31.34
	No	195	68.66
Advised about family planning methods	Yes	251	88.38
	No	33	11.62
Type of contraception adopted	OCP	23	8.10
	IUD	120	42.25
	Condom	9	3.17
	Permanent	66	23.24
	Not used	66	23.34
Beneficiary of JSY scheme	Yes	137	48.24
	No	147	51.76
Beneficiary of Dr. Muthulakshmi Reddy Scheme	Yes	130	45.77
	No	154	54.23

II, 41.9% (119) belong to class III, 10.56% (30) belong to class I and only 2.46% (7) belong to class IV.

Delivery was conducted by skilled personnel in 80.28% (228) of pregnancies, of which 37.72% deliveries happened in primary health centres, 47.81% delivered in government hospitals and 18.86% delivered in private hospitals. 19.72% (56) of deliveries were conducted by untrained personnel. 55.28% of the mothers had normal delivery and 44.72% had caesarian delivery. Also 41.55% have got some complications during delivery, which includes severe bleeding, epilepsy, diabetes/hypertension, fever and others. (Table 1)

In the postnatal period, 54.58% (155) mothers had only one postnatal visit, 30.98% had two visits, 4.93% of mothers had three or more visits and 9.51% of the mothers had no visits. Also, 35.92% of the mothers did not take any iron and folic acid tablets and 88.38% of the mothers were advised regarding family planning in the postnatal period. Various family planning methods adopted were intra uterine devices (42.25%), oral contraceptives (8.1%), condoms (3.17%), permanent sterilization (23.24%) and the other 23.34% were not practicing any method.

Table 3 : Factors in utilization of Intranatal health services

Variable	Percentage (n)	Skilled attendance at delivery	Chi square value	df	P value
Age at child birth (in completed years)					
<20	63	85.7	3.059	3	0.383
21-25	162	77.8			
26-30	54	79.6			
>30	5	100			
Education					
Illiterate	100	82	16.683	3	0.001*
Primary	98	84.7			
Secondary	55	61.8			
Graduate & above	31	93.5			
Occupation					
Home maker	107	78.5	3.366	3	0.339
Unskilled work	129	79.1			
Semi skilled work	19	78.9			
Skilled work	29	93.1			
Birth order of child					
1	174	79.9	0.835	2	0.659
2	77	83.13			
3	33	75.8			
Socio Economic Class					
I	30	100	13.345	3	0.004*
II	128	74.2			
III	119	83.2			
IV	75	7.1			

*- statistically significant

Table 4: Factors in utilization of Postnatal health services

Variable	Percentage (n)	Skilled attendance at delivery	Chi square value	df	P value
Age at child birth (in completed years)					
<20	63	15.9	1.962	3	0.580
21-25	162	13.1			
26-30	54	18.5			
>30	5	20			
Education					
Illiterate	100	22	8.421	3	0.038*
Primary	98	9.2			
Secondary	55	10.91			
Graduate & above	31	16.13			
Occupation					
Home maker	107	14	2.142	3	0.543
Unskilled work	129	15.5			
Semi skilled work	19	21.1			
Skilled work	29	6.9			
Birth order of child					
1	174	16.1	4.364	2	0.113
2	77	7.8			
3	33	21.2			
Socio Economic Class					
I	30	6.7	3.655	3	0.301
II	128	14.1			
III	119	17.6			
IV	75	14.28			

*- statistically significant

48.24% of the mothers were beneficiaries of JSY scheme and also only 45.77% had received cash benefits from Dr. Muthulakshmi Reddy scheme. (Table 2)

From Table 3, it was observed that education - graduate and above (χ^2 - 16.683; p-0.001) and socio economic class- class I (χ^2 - 13.345; p-0.004) were significantly associated with utilization of skilled attendance at delivery. And education-graduate and above (χ^2 - 8.421; p-0.038) was found to be having statistically significant association with better utilization of postnatal health services. (Table 4)

Discussion:

Out of the total 284 study population, 80.28% deliveries were conducted by skilled personnel. National Family Health Survey-4 (NFHS-4) data shows 99.3% of the deliveries were conducted by skilled personnel in rural Tamil Nadu and 80% in national level.^[6] District level Household survey-4 (DLHS-4) also shows 99.1% of the deliveries being conducted by skilled personnel in rural Tamil Nadu.^[4] Jat et al. has reported the deliveries conducted by skilled personnel to be 49.8%.^[7] The better situation in our study population can be due to better

availability of healthcare facilities and personnel in the study area. Lancet Maternal Survival Steering Group report by Campbell OM et al. has also reported that effective intrapartum care is needed in order to reduce maternal mortality.^[8]

During the postnatal period 90.49% of the mothers had at least one postnatal visit. According to DLHS-4 data only 63% of the mothers had postnatal visits in rural Tamil Nadu within two weeks of delivery.^[4] 48.24% of the mothers were beneficiaries of JSY scheme and also only 45.77% had received cash benefits from Dr. Muthulakshmi Reddy scheme. As per NFHS-4 data, only 43.8% of mothers received cash benefits from JSY scheme.^[5] More than half of the mothers have to be covered under the scheme in the future.

Higher levels of education (graduates & above) and socio economic class I were found to be significantly associated with better utilization of intranatal services. Kesterton AJ et al. in their study also found that economic status was a major factor in institutional care seeking for child birth in rural India.^[9] And only higher education (graduate and above) was found to have statistically significant association with better utilization of postnatal health services. In other studies too, socio economic status and mother's education were found to have association with better utilization of either intranatal or postnatal services.^[10-15] In a study done by Van Eijk AM et al. in Kenya, accessibility to health facility was also found to be a significant determinant of institutional care for delivery.^[16] Apart from education and economic status, maternal health knowledge, birth interval and number of household members were also identified as determinants of facility based care for childbirth by Kawakatsu Y et al.^[17]

A study done in a special community in Bangladesh by Islam M R et al. has reported a very low level of postnatal service usage (6.2%) and the reasons were level of education, distance to the service centers and exposure to any mass media.^[18]

Kebede et al. has also reported that distance from the health facility was a major factor leading to better health service utilization.^[19] Jacobs et al. has reported that utilization of antenatal services also serve as a determinant of intranatal and postnatal care utilization.^[20] Exposure to media and women with low parity were identified as factors influencing their utilization, according to a study by Regassa N.^[21] Huq NL et al. has advised an integrated maternal healthcare intervention by deploying more skilled birth attendants in remote areas for promotion of skilled care during childbirth.^[22]

Conclusion:

The study which was done among the fishermen community found out the percentage of deliveries conducted by skilled personnel were less than the average in the state and also more than half of the mothers were not covered under both the state/central cash benefit schemes. More than 90% of the mothers had at least one postnatal visit. Better socio-economic status and higher levels of education were identified to be associated with better utilization of intranatal and postnatal services. The study proves the need for improving awareness and utilization of maternal healthcare services among the mothers in the community, especially among those residing in the underserved areas like fisherman community.

Recommendations:

The study has reported the fact that intranatal & postnatal healthcare services were not utilized fully by the community and fishermen population being a special group has to given the needed attention from the healthcare delivery system. Apart from improving the level of awareness about the services, more impetus on literacy and socio-economic development of the community has to be given.

Declaration:

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Conflict of Interest: Nil

References :

1. World Health Organization, UNFPA and the World Bank: Trends in maternal mortality: 1990 to 2015 estimates developed by WHO, UNICEF, UNFPA and the World Bank Geneva. World Health Organisation 2015. Available from: http://apps.who.int/iris/bitstream/10665/194254/1/9789241565141_eng.pdf?ua=1 [Last accessed on 2016 December 21]. 2
2. Registrar General of India: Sample registration system-special bulletin on maternal mortality in India 2007-2009. Office of Registrar General of India New Delhi 2011. Available from: censusindia.gov.in/Vital...Bulletins/Final-MMR%20Bulletin-2007-09_070711.pdf [Last accessed on 2016 Dec 28].
3. Fisheries and fishing communities in India. Available from: <http://indianfisheries.icsf.net/> [Last accessed on 2016 March 12].
4. District Level Household and Facility survey -4. (2012-13) Ministry of Health and Family Welfare. Government of India. International institute for population sciences. Available from: <https://nrhmmis.nic.in/DLHS4/Tamilnadu/District%20Factsh eets/Khancheepuram.pdf> [Last accessed on 2016 March 20].
5. Consumer Price Index Numbers on Base 2012=100 for Rural, Urban and Combined for the month of August, September 2015. Press Information Bureau, Ministry of Statistics & Programme Implementation, Government of India. Available from: [http:// pib.nic.in /newsite /PrintRelease.aspx?relid=128646](http://pib.nic.in /newsite /PrintRelease.aspx?relid=128646) [Last accessed on 2016 March 21]
6. National Family Health Survey-4, (2015-16). Ministry of Health and Family Welfare, Government of India, International Institute for Population Sciences. Available from: [http:// www.rchiips.org/nfhs/FCTS/TN/Kancheepuram.pdf](http://www.rchiips.org/nfhs/FCTS/TN/Kancheepuram.pdf). [Last accessed on 2016 Jan 20].
7. Jat TR, Ng N, San Sebastian M. Factors affecting the use of maternal health services in Madhya Pradesh state of India: a multilevel analysis. *International Journal for Equity in Health*. 2011;10:59. doi:10.1186/1475-9276-10-59. [PubMed].
8. Campbell OM, Graham WJ. Strategies for reducing maternal mortality: getting on with what works. *Lancet* 2006; ;368(9543):1284-99. [PubMed].
9. Kesterton AJ, Cleland J, Slogett A, Ronsmans C. Institutional delivery in rural India: the relative importance of accessibility and economic status. *BMC Pregnancy and Childbirth* 2010, 10:30.
10. Adogu PO, Egenti BN, Ubajaka C, Onwasigwe C, Nnebue CC. Utilization of maternal health services in urban and rural communities of Anambra State, Nigeria. *Nig J Med* 2014; 23(1):61-9. [PubMed]
11. Alam N, Hajizadeh M, Dumont A, Fournier P. Inequalities in Maternal Health Care Utilization in Sub-Saharan African Countries: A Multiyear and Multi-Country Analysis. *PLoS ONE* 2015;10: 1-16.
12. Tura G. Antenatal care service utilization and associated factors in Metekel zone, Northwest Ethiopia 2009; 19: 111-118.
13. Chakraborty N, Islam MA, Chowdhury RI, Bari W, Akhter HH. Determinants of the use of maternal health services in rural Bangladesh. *Health Promotion International* 2003; 18: 327-37.
14. Babalola S, Fatusi A. Determinants of use of maternal health services in Nigeria: looking beyond individual and household factors. *BMC Pregnancy and Child Birth* 2009, 9:43
15. Jolly SP, Rahman M, Afsana K, Yunus FM, Chowdhury AMR. Evaluation of Maternal Health Service Indicators in Urban Slum of Bangladesh. *PLoS ONE*. 2016;11(10):e0162825. doi:10.1371/journal.pone.0162825. [PubMed]
16. Anna M van Eijk, Hanneke M Bles, Frank Odhiambo, John G Ayisi, Ilse E Blokland, Daniel H Rosen, Kubaje Adazu, Laurence Slutsker and Kim A Lindblade. Use of antenatal services and delivery care among women in rural western Kenya: a community based survey. *Reproductive Health*. 2006;3:2. doi:10.1186/1742-4755-3-2. [PubMed]
17. Kawakatsu Y, Sugishita T, Oruenjo K, Wakhule S, Kibosia K, Were E, Honda S. Determinants of health facility utilization for childbirth in rural western Kenya: cross-sectional study. *BMC Pregnancy Childbirth* 2014; 14(1):265. [PubMed].
18. Islam M R, Odland J O. Determinants of antenatal and postnatal care visits among Indigenous people in Bangladesh: a study of the Mru Community. *Rural and Remote Health* 2011; 11: 1672.
19. Kebede A, Hassen K, Nigussie Teklehaymanot A. Factors associated with institutional delivery service utilization in Ethiopia. *International Journal of Women's Health*. 2016;8:463-475. doi:10.2147/IJWH.S109498. [PubMed].
20. Jacobs C, Moshabela M, Maswenyeho S, Lambo N, Michelo C. Predictors of Antenatal Care, Skilled Birth Attendance, and Postnatal Care Utilization among the Remote and Poorest Rural Communities of Zambia: A Multilevel Analysis. *Frontiers in Public Health* 2017;5:11. doi:10.3389/fpubh.2017.00011. [PubMed]
21. Regassa N. Antenatal and postnatal care service utilization in southern Ethiopia: a population-based study. *African Health Sciences*. 2011;11(3):390-397. [PubMed].
22. Huq NL, Ahmed A, Haque N al, Hossain M, Uddin J, Ahmed F, Quaiyum MA. Effect of an integrated maternal health intervention on skilled provider's care for maternal health in remote rural areas of Bangladesh: a pre and post study. *BMC Pregnancy and Childbirth*. 2015;15:104. [PubMed]]