



Prevalence, utilization and determinants of complete postnatal care services among rural women in northern Tamil Nadu

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ABSTRACT

Postnatal care is the care given to the mother and her newborn baby immediately after birth up to first six weeks after delivery. Receiving 4 complete postnatal visits by healthcare workers helps to decrease the maternal and neonatal mortality rates. The present study was conducted with the aim of assessing the utilization and determinants of post-natal care among mothers who gave birth. This community based cross sectional study was conducted in the rural area of northern Tamilnadu with 210 mothers who delivered a year prior to commencement of study by "30 cluster sampling method". A pretested, semi-structured data tool was used. Descriptive variables were presented as proportions and frequencies. Chi-square test was used to ascertain the associations. Only 78.1% had received their first postnatal care within 24 hours. The prevalence of complete postnatal care services was found to be 16.2%. The main reason behind it was lack of knowledge/ignorance about the benefits of postnatal services. The present age of the mother, family type, parity, postnatal care counseling and cultural beliefs were significantly associated with utilization of post-natal check-ups. As the prevalence and utilization of postnatal care is considerably low, development of health facilities, the promotion of service providers, sustainable maternal and child health programs and awareness-raising will further promote better outcomes.

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INTRODUCTION

The postnatal period begins from the birth of the baby to 6 successive weeks with the recommended time of visit, i.e. 6–24 hours, 3–6 days and 6 weeks after the birth (WHO, 2014). Although the health

of mothers is generally thought to be the health of the society, an estimated 287 000 maternal deaths occurred worldwide (WHO, 2013). Every year, three million neonates die within their first month of life, representing nearly 40% of all deaths of kids under the age of 5 and the majority newborn deaths are in developing countries (WHO, 2014). An oversized percentage of maternal and neonatal deaths occur during 48 hours after childbirth.

Receiving complete and appropriate postnatal care (PNC) by skilled health care provider during the initial 42 days after childbirth is most vital for significantly reducing the maternal and neonatal mortality rate which is shown in several studies conducted in developing countries (WHO, 2014), (Warren *et al.*, 2006; Baqui *et al.*, 2009). Regardless of demonstrated benefits of complete postnatal care, this is often the foremost ignored domain in most

parts of our country. Report shows that the utilization of complete PNC services is meagre with several factors including maternal age, mother level of education, women and husband occupational status, place of delivery, mode of delivery, total number of births, and perception of obstetric-related danger signs and knowledge of PNC services (Workineh, 2014; Worku et al., 2013). Moreover, within a population the determinants of utilizing PNC programs do not appear to be similar across different communities and socio-economic status.

According to NFHS 4 survey, rate of postnatal care within 24 hours of delivery is just 58.7 % in Tamil Nadu (Brahmapurkar, 2019). The rural area women are most disadvantaged at this point. Thus, assessing factors affecting utilization of postnatal care service in several setup area is incredibly important to enhance maternal and child health. With this background, our study aimed to produce present-day evidence on postnatal care service coverage by skilled healthcare provider and determinants for availing the PNC services among women who gave birth in rural area of Tamilnadu.

MATERIALS AND METHODS

This community based cross sectional study was conducted from January to March 2020 in the rural field practice area district (Thiruvallur) of tertiary medical college hospital in a metropolitan city of Tamilnadu. Study comprised of 210 women who gave birth in preceding year from the commencement of study period (i.e. January 2019 to January 2020) residing in the area of study. Thiruvallur district consists of 14 Blocks and 43 village panchayats. Ethical approval was obtained from institutional ethics committee board.

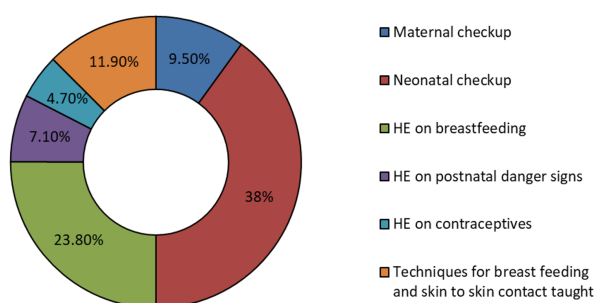


Figure 1: Components of postnatal care received by mothers through healthcare workers [*HE – Health Education]

Sampling Method

Participants were selected through '30*7 clusters sampling' method proposed by WHO was used for rapid assessment of coverage evaluation based on

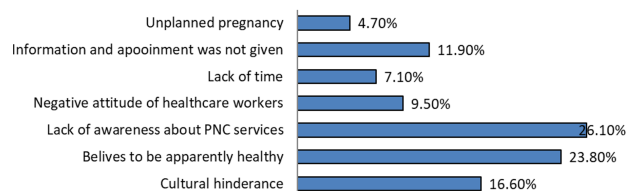


Figure 2: Reasons for not complying with PNC services by study participants

probability proportional to size (PPS) for cluster selection (Chadha, 2006). The list of villages (sampling unit) of Thiruvallur district was availed from district panchayat office. Cumulative population and cluster interval (CI) was calculated by dividing cumulative population by 30. First cluster (village) was selected by choosing random number from random table; similarly remaining clusters were selected using CI and random numbers. Town panchayats and urban communal were excluded from selection.

Selection of study participants and data collection

Each cluster was randomly divided into quadrants for better representation of study population. Using a team of 5 member's data was collected. The first house in each cluster was chosen from random direction using tip of pen method. Women who are residing within the study area for at least a year were chosen. From each cluster 7 mothers were chosen, i.e. 2 from each quadrant and 1 from last quadrant. House – house data collection was performed until the desired sample size was attained. A pretested semi-structured questionnaire was used to collect data containing the demographic details, obstetric characteristics, utilization of postnatal services and the other information required. Pilot testing was performed with investigators in the field for uniformity. All data were cross-checked by principal investigator at field level and mistakes were rectified immediately to maintain the quality of data. Written informed consent was obtained after informing the participants regarding the aim of study, benefits, procedure and confidentiality of the research study in the local language.

Study tool and Study variables

The study instrument consisted of three components,

Section-I

Sociodemographic Details which incorporates Age (in years), Education of mother, Education of father, Occupation of mother, type of family, Income, Socioeconomic status and Number of children.

Section- II

Obstetrics Characteristics of women including Parity, Nature of last pregnancy, ANC visits, Course of pregnancy, Mode of delivery, type of labor.

Section-III

utilization and components of postnatal care services like Total number of PNC visits, Feeding practices, Immunization status, PNC counseling, Post-delivery seclusion.

Statistical Analysis

Data was tabulated in Microsoft Excel 365 and analyzed by Statistical Package for Social Sciences (SPSS) Software 21.0. Descriptive Statistics were calculated for all the variables in frequencies and percentages. Analytical statistics like chi-square tests were applied to elicit the factors influencing complete postnatal care services

RESULT

Sociodemographic characteristics

A total of 210 mothers were included for analysis. The mean age of the mothers was 24.9 ± 2.7 . An average family size was found to be 4.8. Among the mothers who completed high school, 72(52.9%) of them perceived undergraduate courses and the remaining 64(47%) broken with schooling. Out of these, the majority 138(65.7%) of them belong to socioeconomic class II and some 58(27.8%) belongs to class III. Only few 7(3.3%), 5(2.3%), 2(0.9%) belongs to class I, IV and V respectively. (Table 1)

Obstetric characteristics

More than half of mothers were primi and among the multiparous woman 3(4.1%) of them with birth order of 3, conducted home delivery. Almost all mothers had there ANC checkups among which maximum 127(57.6%) pregnancies were unplanned but was supported. Out of 124 mothers, 95(45.2%) of them faced complication during antenatal period like anemia, GDM, hypertension, PROM etc., few 5(2.3%) mothers during their natal period like labor dystocia and the remaining 24(11.4%) during their postnatal period like postpartum hemorrhage, perineal tears etc. Term pregnancy mainly consists of vaginal 48(41.3%) and instrumental delivery 28(24.1%) and in some cases cesarean 40(34.4%). (Table 2)

Utilization of postnatal care services

Most of the mothers 164(78.1%) had received their first postnatal care within 24 hours but only 17(8.1%) of them had there last postnatal visit between 4-7 days, many 147(70%) had received

within 6 weeks and the remaining did not attend their next visit. About the mothers who were given complete postnatal care counseling nearly 76(49%) of them received neonatal care which includes exclusive breast feeding, birth registration, umbilical cord care, immunization etc., and the remaining mothers received maternal care like nutrition, contraception, personal hygiene etc. Among those women who attended postnatal counseling, nearly 150(71.4%) of them exclusively breastfed their babies for the first 6 months. Nearly half 110(52.7%) of the mothers proposed that there was a social and cultural faith called "Seclusion" which prevents them from coming out of home after delivery among those 48(22.8%) of them had food restrictions and were given improper diet. (Table 3)

Figure 1 shows the postnatal services received by the mothers where majority 78.9% of the women were not taught about correct breast feeding technique and skin to skin contact to keep the baby warm. Figure 2 tells us the various reasons for not attending the postnatal services after delivery and also various social disturbances. Also, most of them 65.9% had hindrances from mother-in-law on autonomy of availing healthcare services.

As shown in Table 3, post natal care can be affected by several factors. It was observed that, education of mothers ($P= 0.003$) was important contributing factor with utilization of postnatal care ($OR = 2.545$; 95%CI: 1.375-4.714), and mother, who were house wives, utilized PNC 2.980 times more (95%CI: 1.600-5.548) ($P=.000$).

As shown in Table 4, post-natal care can be affected by several factors. It was observed that, age of mothers was important contributing factor with utilization of postnatal care ($OR = 2.45$; 95%CI: 1.32-9.98), and mother, who were living in nuclear family, utilized PNC more (95%CI:1.12 - 7.34).

DISCUSSION

Postnatal care is significant in maintaining and helping the woman and the baby to improve the health, by providing an opportunity for the healthcare professionals to identify and treat the health conditions, which might develop in the mother and new-born during the postnatal period because majority of the deaths occurs in this period. Utilization of postnatal care services plays a very important role in the health of the mother and the newborn.

This study was aimed to identify the utilization of postnatal care services prevalence among the mothers and the factors affecting them to perceive complete utilization of the services.

Table 1: Sociodemographic characteristics of study participants

Demographic Characteristics	Categories	N	%
Age	<25	128	60.9
	>25	82	39
Education of mother	Up to middle school	74	35.2
	High School and more	136	64.7
Education of father	Up to middle school	67	31.9
	High School and more	143	68
Occupation of mother	Housewife	208	99
	Working	2	0.9
Occupation of Father	Agriculture/labor	164	78.1
	Business/Professional	46	21.9
Type of family	Nuclear	202	96.1
	Joint	8	3.8
Per capita income (Average = Rs 4960)	<4960	76	36.1
	>4960	134	63.8
Socioeconomic status (BG Prasad's SE Classification)	Class I & II	147	69
	Class III, IV & V	63	31

Table 2: Obstetric characteristics of postnatal mothers

Obstetric Characteristics	Categories	N	%
Parity	<2	135	64.2
	>2	75	35.7
Nature of pregnancy	Planned and supported	51	24.2
	Unplanned but supported	121	57.6
	Unplanned and unsupported	38	18.2
Course of pregnancy	Complicated a	124	59
	Uncomplicated	86	40.9
Mode of delivery	Vaginal birth	68	32.3
	Instrumental delivery	48	22.8
	Cesarean	94	44.7
Term of labor	Term	116	55.2
	Pre and Post term	94	44.7
Autonomy on healthcare seeking	self	67	31.9
	Spouse/relatives	143	68

^a Antenatal, natal & postnatal complications

Among women involved in the study, only 16.2% received complete postnatal care i.e. at least 4 visits within six weeks of delivery. Women were more likely to receive postnatal care if they knew about care, lived in urban areas, received more than secondary education, had caesarean births, had at least four antenatal visits, and were ascertained if pregnancy was supported (Bhattacharjee *et al.*, 2013). Our outcome shows a very less proportion of women obtained postnatal care compared to previous studies done in Darjeeling which was 18.8% (Bhattacharjee *et al.*, 2013). This may be due to the fact that the postnatal care was considered unimpor-

tant by the mother and their family and also home visits and counseling by health care workers was not sufficient to make people understand in this regard (Bhattacharjee *et al.*, 2013).

Almost 97.8% mothers in our survey received the full ANC services during their pregnancy, which is higher than a study conducted in Northwest Ethiopia that reported 76.6% of women received ANC service during their last pregnancy (Akibu *et al.*, 2018).

Place of delivery was one of the sturdiest interpreters of postnatal care service utilization. Almost

Table 3: Distribution of utilization of postnatal careservice by study participants

Utilization of Postnatal care	Categories	N	%
First PNC Visit	Within 24 hours	164	78.1
	Between 2 -3 days	16	7.6
	Between 4 – 7 days	19	9.04
	During 6th week	7	3.3
	Never visited	4	1.9
No of PNC Visits (N= 210)	< 4 visits	176	68.5
	>4 visits	34	31.5
Whether PNC counseling given?(N= 178)	Yes	155	87.1
	No	23	12.9
Feeding practices for first 6 months of age	Exclusive Breast Feed- ing(EBM)	150	71.4
	Mixed (EBM + Formula feeding)	48	22.8
	Only Formula Feeding	12	5.7
Immunization status	Full immunized	193	91.9
	Partially immunized	17	8
Utilization of contraceptives Before PNC visits	Accepted	40	80
	Not accepted	170	19
Utilization of contraceptives After PNC visits	Accepted	190	90.4
	Not accepted	20	9.5
Post-delivery seclusion	Yes	110	52.3
	No	100	47.6

Table 4: Association of determinants and postnatal care services perceived by mothers

Characteristics	PNC services		Chi-square	Odd's ratio	95% CI	
	Yes(≥ 4)	No(< 4)				
Age	<25	10(4.7)	118(56.1)	17.47	2.45*	1.32 – 9.98
	>25	24(11.4)	58(27.6)			
Education of mother	Up to middle school	6(2.8)	68(32.3)	2.98	0.98	0.12 – 3.76
	High School and above	28(13.3)	108(51.4)			
Occupation of Mother	Housewife	33(15.7)	175(83.3)	0.97	2.65	0.34 – 8.93
	Working	1(0.47)	1(0.47)			
Type of family	Nuclear	30(14.2)	172(81.9)	43.98	1.76*	1.12 – 7.34
	Joint	4(1.9)	4(1.9)			
Per capita income	<4960	17(8)	59(28)	0.45	1.67	0.34 – 17.8
	>4960	17(8)	117(55.7)			
Parity	<2	25(11.9)	110(52.3)	5.87	1.51*	1.12 – 6.34
	>2	9(4.2)	66(31.4)			
PNC counseling given	Yes	32(17.9)	123(69.1)	17.86	2.65*	1.34 – 11.56
	No	2(1.1)	21(11.7)			
Post-delivery seclusion	Yes	22(10.4)	88(41.9)	5.42	1.5*	1.3 – 12.76
	No	12(5.7)	88(41.9)			

*p value <0.05, statistically significant

all except 3 mothers, gave birth to their last child at institutions whereas in comparison only 75% of the mothers delivered in health institution at Gondar Zuria District, Ethiopia (Tesfahun *et al.*, 2014).

This may be attributed to the fact that women are enrolled for maternity benefit schemes in the study area. Among the mothers, only 3(4.1%) of them with birth order of 3, conducted home delivery and in comparison 30(15%) delivered at home in an article done in urban slum of Mumbai (Landge *et al.*, 2017).

The configuration of postnatal care usage is consistent with previous studies. Of all postnatal care participants, 78.1 per cent attended with 4–24 hours of birth. This is more when compared to a study in Northwest Ethiopia where 34% of women who attended postnatal care visits attended early postnatal care (Tesfahun *et al.*, 2014). Due to the fact that, most deliveries were institutional in our study.

Overall 144 (68.5%) of mothers received the partial postnatal care counseling including exclusive breast feeding (99.1%) and immunization status (98.9%) but on breast feeding technique and keeping baby warm and checking umbilical cord was only 67.9%. whereas similar study made in Western Rajasthan reveals that immunization (98.87%), exclusive breast feeding (98.87%) and others was 79.1% (Uppadhaya *et al.*, 2016). This implies that complete and proper counseling was not given to the mothers in the current study.

Half of the mothers (52.3%) believed post-delivery seclusion which restrained them from attending visits is far better when compared to other study which shows 76.3% of mothers considered cultural belief more than their checkups (Landge *et al.*, 2017). Cultural practices have been associated with non-utilization of postnatal care in studies conducted in rural, Bangladesh (Winch *et al.*, 2005). Confinement of the mother and the newborn is most strongly observed before the noai ceremony on day 7 or 9, and involves restrictions on movement outside the home, sleeping where the birth took place rather than in the mother's bedroom, and sleeping on a mat on the floor. Newborns are seen as vulnerable to cold air, cold food or drink (either directly or indirectly through the mother) and malevolent (Winch *et al.*, 2005).

With regards to determinants, present age of the mother, family type, parity, postnatal care counseling and cultural beliefs had significant relationship with the utilization of complete PNC services. Conversely literacy, socioeconomic class, occupation of mothers had significant relationship with the utilization of complete postnatal services in other

study (Uppadhaya *et al.*, 2016).

Limitations

Potential recall bias, as the mothers were asked about events that occurred a year back prior to the study. Cultural issues could not be addressed completely, as it was quantitative study. Qualitative studies may throw light on this aspect. Study area is limited to one district, which is restricting the scope and relevance.

CONCLUSION

This study highlights the low prevalence and utilization of complete postnatal care services among the study population and also determinants like age, parity, family type, cultural practices and PNC counseling during delivery had significant associations. These findings implies the fact that increasing awareness on postnatal care services, preventing complications and adhering the mothers to national postnatal care protocol strictly is the need of the hour.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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REFERENCES

- Akibu, M., Tsegaye, W., Megersa, T., Nurgi, S. 2018. Prevalence and Determinants of Complete Postnatal Care Service Utilization in Northern Shoa, Ethiopia. *Journal of Pregnancy*, 2018(1):1–7.
- Baqui, A. H., Ahmed, S., Arifeen, S. E. 2009. Pro-jahnmo 1 Study Group. Effect of timing of first postnatal care home visit on neonatal mortality in Bangladesh: an observational cohort study. *BMJ*, 339:1–6.
- Bhattacharjee, S., Datta, S., Saha, J., Chakraborty, M. 2013. Maternal health care services utilization in tea gardens of Darjeeling, India. *Journal of Basic and Clinical Reproductive Sciences*, 2(2):77.
- Brahmapurkar, K. P. 2019. High under-five mortality rate in Rural Madhya Pradesh, time to identify high-risk districts using National Family Health Survey-4 data with comparison to low under-five mortality rate in Rural Tamil Nadu, India. *International journal of preventive medicine*, 10.
- Chadha, V. K. 2006. Sample size determination in health studies. *NTI bulletin*, 42(3&4):55–62.

- Landge, J. A., Dehmubed, A., Bhawalkarn, J. S. 2017. Are Women Availing Post Natal Care Services? Cross Sectional Study in an Urban Slum of Mumbai. *Natl J Community Med*, 8(6):288–291.
- Tesfahun, F., Worku, W., Mazengiyya, F., Kifle, M. 2014. Knowledge, Perception and Utilization of Postnatal Care of Mothers in Gondar Zuria District, Ethiopia: A Cross-Sectional Study. *Maternal and Child Health Journal*, 18(10):2341–2351.
- Uppadhaya, S. K., Bhansali, S., Sivodia, S. K., Agrawal, N., Garg, K., Singh, M. 2016. Utilization of postnatal care services in rural area of Western Rajasthan, India. *Ntl J Community Med*, 7(7):569–572.
- Warren, C., Daly, P., Toure, L., Mongi, P. 2006. Postnatal care. Opportunities for Africa“ s Newborns. *Cape Town, South Africa: Partnership for Maternal, Newborn and Child Health*, pages 79–90.
- WHO 2013. Global Health Observatory (GHO) Geneva. Switzerland. World Health Organization.
- WHO 2014. WHO recommendations on postnatal care of the mother and newborn. 62p. pages 978–992. World Health Organization.
- Winch, P. J., Alam, M. A., Akther, A., Afroz, D., Ali, N. A., Ellis, A. A., Baqui, A. H., Darmstadt, G. L., Arifeen, S. E., Seraji, M. H. R. 2005. Local understandings of vulnerability and protection during the neonatal period in Sylhet district, Bangladesh: a qualitative study. In *The Lancet*, volume 366, pages 478–485. Elsevier BV.
- Workineh, Y. G. 2014. Factors Affecting Utilization of Postnatal Care Service in Amhara Region, Jabitena District, Ethiopia. *Science Journal of Public Health*, 2(3):169.
- Worku, A. G., Yalew, A. W., Afework, M. F. 2013. Factors affecting utilization of skilled maternal care in Northwest Ethiopia: a multilevel analysis. *BMC international health and human rights*, 13:20.