

Factors influencing utilization of postnatal care services among postpartum mothers of Vijayanagara district, Karnataka

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Abstract: India has made tremendous progress in reducing Maternal Mortality Rate (MMR) by 92 per cent since 2020, but still efforts are required to achieve the new SDG target. Vijayanagara district of Karnataka is a district of Kalyan Karnataka with poor maternal and infant health practices according to National family health survey V report. Hence the present study was conducted with the objective to assess the utilization of post-natal services (PNC) and study the factors influencing utilization of postnatal care services. A community based cross sectional study was conducted in the year 2021-23 in Vijayanagar district on a sample of 810 mothers within 3 months of delivery. Pre-tested questionnaire was used to elicit the information on utilization of postnatal care services and demographic information. SES scale by Agarwala *et al.* 2005 was used. Data was analyzed using SPSS package Version 26. Results revealed that the overall prevalence of utilization of postnatal care services was 32.46 per cent out of 810 mothers. Mothers between 29 to 32 years had utilized postnatal care services, mothers from middle SES (46.50%) group, who had Antenatal Care (ANC) attendance, who had knowledge on PNC services (36.30%) were utilized all the recommended PNC services. Socioeconomic status (SES), age of mother, number of ANC visits and knowledge on postnatal care services were found to be significant factors affecting postnatal care services utilization. The study revealed low level of utilization of postnatal care services among mother (32.46%). This emphasizes the need to educate pregnant and lactating mothers regarding the importance of PNC services.

Key words: Antenatal visits, Postnatal care services, Prevalence, Socio-economic status, Utilization

Introduction

In a respectful atmosphere, pregnancy, childbirth, and parenting can effectively uphold women's rights and social standing without compromising their health. Safe motherhood and childbirth are made possible by the support that communities and families give expectant mothers and their newborns, the expertise of medical professionals, and the availability of sufficient medical facilities, supplies and emergency care when needed (Muktamath *et al.*, 2022).

Over 500,000 women worldwide lose their lives during or shortly after giving birth to children each year; over 90 per cent of these deaths take place in underdeveloped nations (Anon, 2020). The postnatal phase lasts six weeks from the time a baby is delivered until the reproductive organs revert to their typical non-pregnant state (Fraser, 2010). For the well being of both the mother and the child, the timing of postnatal care is equally essential.

Studies have indicated that the "immediate postnatal period," which lasts for 24 hours following delivery, accounts for 50% of maternal mortality and 40% of neonatal deaths. The World Health Organization advises women who give birth in a medical facility to get PNC for at least 24 hours following the birth. The first postnatal visit should happen as soon as after delivery—ideally within 24 hours—if the birth takes place at home. It is advised to make three more PNC contacts on day three, between days 7–14 after delivery, and six weeks after delivery (Pandey *et al.*, 2019). The use of postnatal care has been limited in south Asia, especially in India. According to the 2020-21 National Family Health Survey (NFHS-4), in urban areas,

only 27.70 per cent mothers received postnatal care from within 2 days of delivery, while children who received a health check after birth are very low, *i.e.* 29.50 per cent. Despite this, many women who give birth in facilities are discharged within hours after childbirth, without any indication about where they can obtain further care or support (Sunitha and Muktamath, 2023).

Utilization of postnatal care can be affected by large number of factors including socio-demographic factors, economic factors, accessibility and availability of maternal and child health services *etc.* Understanding the factors that influence care-seeking behavior for postpartum services in India is vital to improve quality of care and designing appropriate interventions. Our study tried to elucidate these factors with the objective to assess the utilization of post-natal services and factors influencing utilization of postnatal care services.

Material and methods

A community based cross sectional study was carried out in Vijayanagar district of Kalyan Karnataka region from 2021-23. The study population comprised of mothers who delivered in last 3 months and residing in rural and urban area of Vijayanagar district. Purposive sampling method was used to select the participants. The total sample of the study was 810 postpartum mothers.

Purposive Sampling technique was employed by taking a list of mothers by anganwadis and primary health care centers. Anganwadi teachers from women and child welfare department and ASHA workers from health department were contacted and

Table 1. Distribution of postpartum mothers based on demographic profile

Characteristics	Category	Frequency	Percentage
Age of the mother (years)	19-23	201	24.80
	24-28	454	56.00
	29-32	155	19.10
Age at marriage (years)	18-21	473	58.40
	22-25	272	33.60
	26-29	65	8.00
Education of the mother	Illiterate	148	18.30
	Primary	84	10.40
	Secondary	257	31.70
	PUC& Diploma	131	16.20
	Graduation	147	18.10
	Post graduation	43	5.30
Occupation of the mother	Homemaker	711	87.80
	Working	99	12.20
Locality	Rural	638	78.80
	Urban	172	21.20
Type of family	Nuclear	480	51.60
	Joint	392	48.40
Size of the family	1-5	437	54.00
	6-10	309	38.10
	More than 10	64	7.90
Socio economic status of the family	Upper high	11	1.40
	High	74	9.10
	Upper middle	292	36.00
	Lower middle	415	51.20
	Poor	18	2.20

list of recently delivered women from these areas were selected for the study.

Data was collected by conducting in-depth interview, using pretested structured questionnaire, after obtaining informed consent from mother. SES scale by Aggrawala *et al.* 2005, was used. Data analysed using Statistical Package for Social Sciences (SPSS version 26).

Results and discussion

Table 1 shows the demographic characteristics of mother. Majority of the mothers (56.00%) were between 24-28 years, 24.80 per cent were between 19-23 years and 19.10 per cent of the mothers were between 29-32 years of age. Most of the mothers (58.40%) married at the age of 18-21 years, 33.60 per cent between 22-25 years and 8.00 per cent were between 26-29 years. About 63.20 per cent of mothers had completed 1 to 2 years of their marriage, 30.10 per cent completed 3-4 years and 6.70 per cent completed 4 to 5 years.

With respect to education about 31.70 per cent completed their secondary education, 16.20 per cent had PUC and Diploma education while 18.10 per cent and 5.30 per cent mothers completed graduation and post-graduation respectively. Majority of the mothers were homemakers (87.80) and only 12.20 per cent were working. About 78.80 per cent belonged to rural locality whereas 21.20 per cent were from urban area. Majority of mothers (51.60) belong to nuclear family whereas 48.40 per cent were belonging to joint family. With respect to the size of the family, 54 per cent of the mothers living in families

having 1 - 5 family members, 38.10 per cent were living with 6 - 10 family members and 7.90 per cent of the mothers were living with more than 10 family members.

Regarding socio-economic status of the family, 51.20 per cent of the participants belonged to lower middle SES followed by upper middle SES (36%), high SES (9.10%), 2.20 per cent and 1.40 belong to poor and upper SES group respectively.

Table 2 shows the distribution of maternal factors with respect to utilization of PNC services. With respect to antenatal visits majority of mothers 434 (53.60%) received less than 4 antenatal visits and about 52.70 per cent of mothers received less than 4 postnatal visits/services. With respect to time of PNC visit,

Table 2. Utilization of postnatal care services by postpartum mothers based on maternal factors N=810

Factors	Category	Frequency	Percentage
Antenatal visits	< 4 visits	434	53.60
	≥ 4 visits	376	46.40
Postnatal visits	< 4 visits	614	75.80
	≥ 4 visits	196	24.19
Postnatal service did you receive	Check up	427	52.70
	Immunization	383	47.30
	Family planning	208	25.70
	Postnatal check-up for both baby and mother	219	27.00
Type of postnatal service received	Getting MADILU kit	614	75.80
	Iron and folic acid supplementation	483	59.60
	Psychological counseling	196	24.19
	Clothing for baby & mother	-	-
	Nutritional counseling	56	10.30
Source of information about postnatal services	Breast feeding counseling	597	73.70
	Friends	179	22.10
	Media	75	9.30
	Health workers	631	77.90
Postnatal care services attendance after delivery	1 time	314	38.80
	2 time	273	33.70
	3 time	163	20.10
	More than 3 time	60	7.40
Reasons for not utilizing PNC service	Not aware the services are offered	283	34.90
	Had no problem	405	50.00
	No PHC in the vicinity	40	4.90
	Cultural factors	82	10.10
Decision about seeking health care services	Self	112	13.80
	Partner	404	49.90
	Both	254	31.40
	Elders	40	4.90
Satisfaction with PNC services	No	313	38.60
	Yes	480	59.30

Factors influencing utilization of postnatal care service.....

majority of mothers were aware about time of PNC visit. Majority of mothers (38.80%) responded that mothers should receive PNC services within 24 hours of delivery followed by 2 to 3 days (33.70%), 4 to 7 days (20.10%) and 8 to 30 days (7.40 %). About duration of hospital stay, about 35.60 per cent of mothers stayed after delivery for 2 to 3 days, followed by 21 day (23.80%), 3 to 5 days (20.50%) and more than five days (20.10 %). The most common postnatal services received was health checkup for infant (52.70%), followed by immunization (47.30%), family planning (25.70%) and postnatal checkup for mother (27.00%).

With respect to postnatal services received by the mother, results revealed that, most common postnatal services received by the mother were mother card and madilu kit consisting of health information for the mother (75.80%), followed by breast feeding counseling (73.70%), iron and folic acid supplementation (59.60%), psychological counseling (24.19 %) and nutritional counseling (10.30%). Majority of mothers (77.90%) received information about postnatal services by health workers followed by friends (22.10%) and media (9.30%).

Majority of mothers (38.80%) attended one time to postnatal services followed by 2 times (33.70%) and 3 times (20.10%). Regarding reasons for not utilizing PNC services, about 50.00 per cent of mothers expressed that they 'had no problem' followed by 'not aware of the services are offered' (34.90%), cultural factors (10.10%) and no PHC in the vicinity (4.90%). With respect to decision about seeking health care services, majority of (49.90%) mothers expressed that their health care decision was made by their partner, about 31.40 per cent mothers noted that both make the decision about health care followed by self (13.80%) and elders (4.90%). About satisfaction with postnatal services offered, majority of mothers (59.30%) satisfied with postnatal services offered followed by non-satisfaction (38.60%).

The overall prevalence of postpartum care services utilization was 32.46 (263 out of 810) (Fig.1). Mothers between 29 to 32 years had utilized postnatal care services more (51.00%) than mothers between 19 to 23 years (34.30%) and 24 to 28 years (25.3%) (Table 3), the reason might be older mothers having health issues like gestational diabetes, thyroid problem and anaemia during pregnancy. This made them to take consultation of the delivery and older mothers had 1.98 times higher odds of utilizing PNC services than other group. The results of this study on par with study's findings of Sharma *et al.* (2014) in M.P. Khaki and Sithole (2019), Tessema *et al.* (2020) who showed that mothers between 25 to 34 years and above years had higher odds of utilizing postnatal care services and significant association between age of the mother and postnatal care services utilization. Educated mothers utilized more PNC services.

Mothers who married at the age of 26 to 29 years had utilized PNC services than other group and odds of utilizing PNC services 1.21 times higher odds of risk compared to reference category and 22 to 25 years (0.61 times) (Table 3). The

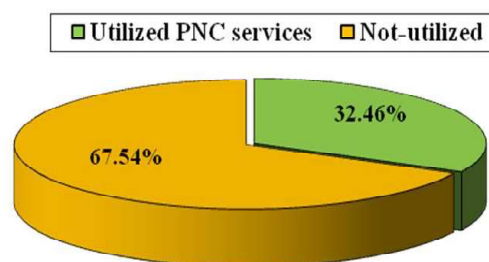


Fig 1.Overall utilization of PNC services by mothers

Table 3. Bivariate analysis of factors associated with utilization of postnatal care services N=810

Characteristics	Category	Not -utilized n=547 N (%)	Utilized n=263 N (%)	OR	P value
Age of mother (years)	19-23 years	132 (65.70)	69 (34.30)	1	0.000**
	24-28 years	339 (74.70)	115 (25.30)	0.649(0.453, 0.930)	
	29-32 years	76 (49.00)	79 (51.00)	1.989(1.295, 3.054)	
Age at marriage(years)	18-21 years	305 (64.50)	168 (35.50)	1	0.007**
	22-25 years	203 (74.60)	69 (25.40)	0.617(0.443, 0.860)	
	26-29 years	39 (60.00)	26 (40.00)	1.210(0.712, 2.058)	
Education of mother	Illiterate	96 (69.10)	43 (30.90)	1	0.152 ^{NS}
	Primary and secondary	58 (74.40)	20 (25.60)	0.770(0.413, 1.435)	
	PUC and Diploma	167 (62.50)	100 (37.50)	1.337(0.864, 2.069)	
Occupation of mother	Graduation and above	226 (69.30)	100 (13.70)	0.988(0.643, 1.518)	0.014*
	Homemaker	491 (69.10)	220 (30.90)	1	
	Working	56 (56.60)	43 (43.40)	1.714(1.117, 2.629)	
Locality	Rural	103 (59.90)	69 (40.10)	1.53(1.08, 2.17)	0.016*
	Urban	444 (69.60)	194 (30.40)	1	
Socio economic status of the family	High	133 (67.20)	65 (32.80)	1	0.001**
	Middle	68 (53.50)	59 (46.50)	1.775(1.123, 2.806)	
	Poor	346 (71.30)	139 (28.70)	0.822(0.576, 1.173)	
ANC Visit	≥ 4 Visits	236 (62.80)	140 (37.20)	1.500(1.116, 2.016)	0.007**
	< Visits	311 (71.70)	123 (28.30)	1	
PNC services knowledge	Yes	244 (63.70)	139 (36.30)	1.392(1.036, 1.870)	0.028*
	No	303 (71.00)	124 (29.00)	1	

Figures in the parentheses indicates percentage *Significant at 5 per cent level **Significant at 1 per cent level

mothers who do not utilized PNC services, the reason may be due to their maturity and aware of services and the women who married early were less empowered to take decisions. Regarding education and PNC service utilization, mothers who had PUC and Diploma education had utilized PNC services and odds of utilizing PNC services was 1.33 times higher odds of risk compared to mothers who had primary and secondary education and who are graduates and illiterates. This may be due to educational level in mothers and lack of awareness about PNC services provided by government. These findings are in line with study done by Pandey *et al.* (2019) in Jabalpur district, India and Upadhyay and Gupta, 2019 who showed that the educated mother's availed postnatal care services compared to illiterates. Education had significant association with postnatal care services utilization.

Working mothers had utilized 1.71 times higher odds of risk of utilizing PNC services than homemakers. This may be due to working mothers had awareness about postnatal care, delivery complications and they had to return back to their work after availing six months of maternity leave and they may want to be healthy and fit. Similar results reported by Sharma *et al.* (2014) and Khaki and Sithole (2019) There is a significant association found between occupation and PNC service utilization.

Mother who belonged to middle SES (46.50%) had utilized PNC services followed by high SES (32.80%) and poor SES (28.30 %). Bivariate analysis showed mothers who belonged to middle SES category were 1.77 times more likely to utilize PNC care services and mothers' belonged poor SES group were 0.82 times lesser odds of risk of utilizing PNC care services than reference category. Mothers of low-income group lack the financial assistance to visit the hospital or prioritise needs of the baby over their own health. The majorities of the participants in the study were daily wagers and are from poor family. Going for their own health will lead to wage loss of their husband, their husband does not get a frequent leaf or there may be time constraint. This maybe because women who used comprehensive prenatal care services received enough counseling regarding the postpartum care during their ANC visits.

Mothers from rural area utilized PNC services compared to urban mothers and the odds of utilizing PNC services 1.53 times higher among rural mothers compared urban mothers. Significant association observed between locality and utilization of PNC services (Table 3). This could be due to ASHA workers from health department and Anganwadi workers, child and women welfare department giving awareness on postnatal care in rural areas. They do visit PNC homes and check for health of the mother and new born. These workers suggest and

counsel the mothers about postnatal care and neonatal care. Anganwadi workers provide nutritional food to the mothers and twice in a month they visit for PNC services and weight of the mother and unit will be checked.

In spite of government's efforts to make home visits by healthcare provider (ASHA workers and Anganwadi workers) women in urban area are not utilizing the postnatal care services. Even more efficient strategies need to be planned to give education and awareness to the mothers, family and the community for better survival of mother and her infant. Contradictory results reported by Karanati *et al.* (2020) Angore *et al.* (2018) and Dona *et al.* (2022) showed that mothers from urban area had utilized PNC services compared to rural mothers and significant association was also observed. This may be because in the present study rural women attended government hospitals and the strong network of ASHA workers and likely home visits increased the utilization of PNC services in rural area.

Mothers who attended antenatal visits during their pregnancy more than four times utilized PNC services more compared to who did not. An odd of not utilizing PNC service was 1.50 times higher among those mothers who made few ANC visits. Similar results were found by Dona *et al.* (2022) mothers who did not attend ANC more than four times higher odds of risk of utilizing PNC services compare to who did.

Significant association was found between ANC attendance and utilization of services also studies conducted by Upadhyai and Gupta (2019), Mon *et al.* (2018), Pandey *et al.* (2019), Bose *et al.* (2023), Karadlkar and Sherkhane (2018) and Chhetri *et al.* (2020) showed significant association between ANC visits and postnatal care services utilization. The mothers who had more knowledge about postnatal care services utilized better PNC services and the risk of not utilizing was 1.39 times higher among mothers with poor knowledge compared to mothers who were aware knew about the PNC services.

Conclusion

Postnatal care services refer to physical examination, vaccination, health and nutrition education, successful breast-feeding practices, care during puerperium and family planning services are the critical healthcare services which women require after giving birth. Utilization of postnatal health services is affected by various factors like accessibility, availability and quality as well as individual attitude and social economic status may influence the use of postnatal care services. The factors which influenced the utilization of postnatal care services were older mother, late marriage, working status of the mother, middle SES group, number of ANC visit and knowledge about PNC service.

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