

A cross-sectional study of postnatal coverage and contraceptive use in Bhadravati Taluk, Shimoga, Karnataka, India

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Abstract

Background: To reduce maternal and infant mortality, postnatal care and contraception services have to be provided at the home and community levels, institutions where delivery takes place, and again at home after discharge from the facility.

Objective: (1) To determine the prevalence of contraceptive usage among women who delivered in the last 6–36 months; (2) to determine the coverage of postnatal checkup among those women; and (3) to find the association between postnatal coverage and postpartum contraceptive usage.

Materials and Methods: A community-based cross-sectional study was undertaken in the Bhadravati Taluk of Shimoga district, Karnataka, India. Study was conducted over 3 months from July to September 2013. By cluster sampling technique, 210 mothers who had delivered in the last 6–36 months were included in the study. House-to-house visit was done, and data were collected using a pretested and semi-structured questionnaire after taking an informed consent.

Result: Of 210 deliveries, 58.5% were conducted in government institutions; LSCS was performed in 80 (38.3%). Only 44.5% had three or more postnatal checkups. In the study population, 35.2% underwent tubectomy, 0% vasectomy, and 15.3% were already pregnant at the time of interview. In the rest of sample, spacing methods were used such as Copper T (16.4%), OCPs (7.7%), and condom (4.8%), and 9.6% had lactational amenorrhea; 67.6% of women had unmet need for contraception, and 61.1 % of live births occurred within 30 months from the previous live birth.

Conclusion: Spacing methods of contraception and postnatal care are low in the study population.

KEY WORDS: Contraceptive usage, postnatal checkup, unmet need, cluster sampling, Shimoga

Introduction

Maternal mortality has been understood as a sensitive indicator of a nation's growth and development. Government of India has always stressed on the importance of bringing

down the maternal mortality and infant mortality rates. However, it is unfortunate to note that, in spite of several programs and policies, India still has about 178 mothers dying out of 1,00,000 live births (MMR India, 2013).^[1] This number is not far from the countries in sub-Saharan Africa where similar numbers of maternal mortality can be seen. It has now been clearly understood that risk to maternal health and a huge mortality risk arises from a poor planning of pregnancy. Early marriage, early childbearing (<20 years), and late childbearing (>35 years) are recognized factors of maternal mortality in India. Higher degree of parity and frequent childbirths are the other significant factors. In the light of these factors, it can be stated that contraception plays a noteworthy role in reducing the maternal mortality by reducing the number of pregnancies. If the mother fully breastfeeds

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her child, she can, at least for the first 6 weeks, rely on the contraceptive effect of lactational amenorrhea. Thereafter, an alternative contraceptive method would be required, such as progestin-only pills, intrauterine devices (IUDs), or barrier methods. Interval contraception is the key to spacing pregnancies.

Birth is a crucial event, which, if not meticulously managed, can result in deleterious health effects and even death for either members of the maternofetal unit. Lack of proper postpartum care carries significant risk for the mother and early neonatal mortality. The postpartum period or *peurperium* starts about an hour after the delivery of the placenta and includes the following six weeks. Postpartum hemorrhage, puerperal infections, and eclampsia are the major causes of maternal mortality worldwide. The postpartum period also serves as a good opportunity to counsel the mothers about contraception, stressing upon the importance of lactational amenorrhea through fully breastfeeding the child and the advantages of breastfeeding, and to carry out an HIV testing if that was missed during pregnancy. In the background of advocating for maternal health, WHO recommends postnatal care timing at 6 h, 6 days, 6 weeks, and 6 months after delivery.^[2] This addresses different health aspects of the mother and child during various stages since the time of delivery, such as stabilizing the vitals, neonatal care, feeding and nutrition, infection, routine tests, immunization, weaning, and growth and development. Ensuring this is provided would enable identification and management of emergencies occurring during postnatal period. The ANMs, LHV's, and staff nurses are being oriented and trained for tackling emergencies identified during these visits.

It is in the light of these matters that we undertook this study in the Bhadravati Taluk of Shimoga district in Karnataka, India, with the objectives to estimate the prevalence of contraceptive usage among women who delivered in the last 6–36 months, to determine the coverage of postnatal checkup among these women, and to find the association between postnatal coverage and postpartum contraceptive usage.

Materials and Methods

We undertook this study in the Bhadravati taluk of Shimoga district, which is about 255 km away from the state capital Bengaluru. With a population of nearly 4 lakhs, Bhadravati is an industrial town and the taluk headquarters of Shimoga district. Bhadravati has 266 villages in the rural area and 76 villages in the urban area, all of which were considered as clusters, that is, a total of 344 sampling units. Among them, 30 clusters were selected by population proportionate to size sampling. Within the selected clusters, a random selection of households was done. In each cluster, seven mothers were interviewed, who had delivered in the last–36 months, after obtaining their informed written consent. A pretested semi-structured questionnaire was used to get information regarding contraceptive usage and postnatal care. We were more interested in getting contraception-related information

for the period of 6 months to 3 years after delivery, as lactational amenorrhea provides reasonable protection during the first 6 months.

The sample size was estimated based on the desired confidence interval of 95% and the desired level of precision of the estimates as ±10%. A routine coverage of 76% was taken for Bhadravati taluk. The following formula was used:

$$N = \frac{[DE \times 1.962 p (1-p)]}{d^2}$$

$$\Rightarrow N = \frac{[2 \times 1.962 \times 76 (100 - 76)]}{102}$$

$$\Rightarrow N = 140$$

where expected routine coverage of postnatal care (p) = 76%; desired width of the confidence interval = ±10%; design effect (DE) = 2.0; and the desired confidence interval = 95%.

The total sample size (minimum) was 140 and raised by 50% to 210 to take care of situations where some clusters may be inaccessible.^[3]

The data gathered were analyzed using SPSS software, version 20. We calculated the prevalence of contraceptive usage among the women interviewed and the coverage of postnatal care among them. We used appropriate statistical tests of significance. A p value of less than 0.05 was considered as significant.

Results

We studied the coverage of postnatal checkup and use of contraceptive practices among women in urban and rural areas of Bhadravati taluk. Of the 210 women recruited for the survey, the adequacy of postnatal checkups was studied in terms of “adequate” being defined as having had three postnatal checkups and “inadequate” as less than three.

Table 1: Association between schooling of mother and father, residence, and place of delivery with the mode of delivery among women in the study group

N = 210	LSCS	Normal	Total	χ^2 value	p
Schooling of mother					
Illiterate	2	13	15	6.257	0.044
7 years or less	18	38	56		
More than 7 years	60	79	139		
Schooling of father					
Illiterate	4	22	26	8.161	0.017
7 years or less	20	38	58		
More than 7 years	56	70	126		
Residence					
Rural	55	77	132	1.922	0.166
Urban	25	53	78		
Place of delivery					
Government institute	37	85	122	8.472	0.014
Home	0	1	1		
Private institute	43	44	87		

Table 2: Association of factors with adequacy of postnatal coverage

N = 210	Adequate	Inadequate	Total	χ^2	p
Schooling of mother					
Illiterate	8	7	15	1.917	0.384
7 years or less	27	29	56		
More than 7 years	82	57	139		
Schooling of father					
Illiterate	12	14	26	4.654	0.098
7 years or less	39	19	58		
More than 7 years	66	60	126		
Number of children					
Up to 2 children	106	87	193	0.606	0.436
More than 2 children	11	6	17		
Residence					
Rural	57	75	132	22.623	0.000
Urban	60	18	78		
Religion					
Christian	1	4	5	7.562	0.023
Hindu	89	79	168		
Muslim	27	10	37		
Income status					
Above poverty line	15	20	35	2.814	0.093
Below poverty line	102	73	175		
Type of family					
Three generation	39	39	78	1.643	0.440
Joint	33	23	56		
Nuclear	45	31	76		
Place of delivery					
Government institute	70	52	122	1.216	0.544
Home	1	0	1		
Private institute	46	41	87		

In our study, we found that only 55.7% (117) women had adequate postnatal checkups, 34% (71) women had education only up to seventh standard, and 40% (84) of the husbands were educated only up to seventh standard [Table 1]. However, there was no significant association between educational levels of either spouse with postnatal coverage. The residence of the women was significantly associated with coverage of postnatal checkups [Table 2]. Women in urban households had more adequate checkups than their rural counterparts. There was no significant association between *per capita* income and coverage of postnatal care.

Of the 210 women, 105 (50%) were using contraceptives, and 15.3% of women were already pregnant at the time of the study. There was no statistically significant association between schooling of women, schooling of her husband, number of children, residence, and type of family with the use of contraceptives. Religion had significant association for the use of contraceptives. Of the 105 women using contraceptives, 74 (70.47%) underwent tubectomy, 17 (16.19%) were using IUD, 8 (7.61%) were using oral contraceptive pills (OCPs), and 5 (4.76%) were using

condoms [Table 3]. One of the women in the study had her husband staying abroad and was considered as abstinence. There were no cases of male sterilization. Place of delivery, religion, and schooling of the husband had significant association with the use of spacing methods. Women who had delivered in government institutions adopted sterilization. Proportionately, more Hindu women adopted sterilization. Husbands who had more than 7 years of schooling were significantly associated with the use of spacing methods, which implies that use type of contraceptive is still decided by the male in family.

Contraceptive usage was not found to have association with the education levels of either spouses, rural or urban residence, number of children, and type of family. However, it was found that, while all Christian women practiced some form of contraception, among Hindu and Muslim families, 47.6% and 67.6% were not practicing contraception. Contraceptive practice was proportionately higher among women with higher levels of education compared with those with lower levels [Table 4]. A statistically significant association was found between the education levels of the husband and contraceptive practice. Higher rates were seen among women with

Table 3: Association of various factors with contraceptive usage

N = 210	Using contraceptive	Not using contraceptive	Total	χ^2	p
Schooling of mother					
Illiterate	7	7	14	1.721	0.423
7 years or less	24	32	56		
More than 7 years	74	66	140		
Schooling of father					
Illiterate	14	12	26	0.350	0.840
7 years or less	30	28	58		
More than 7 years	61	65	126		
Number of children					
Up to 2 children	92	101	193	5.184	0.23
More than 2 children	13	4	17		
Residence					
Rural	68	64	132	0.326	0.568
Urban	37	41	78		
Religion					
Christian	5	0	5	9.949	0.007
Hindu	88	80	168		
Muslim	12	25	37		
Type of family					
Three generation	43	35	78	1.317	0.518
Joint	26	30	56		
Nuclear	36	40	76		

husbands who have had higher education levels. Contraception, particularly by sterilization, was common among the Hindus and Christians than among Muslims. Sterilization was more frequent among deliveries in government hospitals than in private nursing homes.

Although contraceptive usage was proportionately higher among mothers with adequate postnatal checkups than those with inadequate checkups, statistically, there was no association between postnatal coverage and contraceptive usage [Table 5].

Table 4: Factors influencing the type of contraceptive used

	Spacing methods	Sterilization	Total	χ^2	p
Schooling of mother					
Illiterate	1	6	7	3.808	0.149
7 years or less	4	20	24		
More than 7 years	26	48	74		
Schooling of father					
Illiterate	0	14	14	7.945	0.019
7 years or less	8	22	30		
More than 7 years	23	38	61		
Number of children					
Up to 2 children	30	62	92	3.399	0.065
More than 2 children	1	12	13		
Residence					
Rural	17	51	68	1.898	0.168
Urban	14	23	37		
Religion					
Christian	0	5	5	10.536	0.005
Hindu	23	65	88		
Muslim	08	04	12		
Place of delivery					
Government institute	10	50	60	12.521	0.002
Home	01	0	01		
Private institute	20	24	44		

Table 5: Association between postnatal checkup coverage and postpartum contraceptive usage

Postnatal checkup	Using contraceptive	Not using contraceptive	Total
Adequate	51 (54.8%)	42 (45.2%)	93 (100%)
Not adequate	54 (46.2%)	63 (53.8%)	117 (100%)
Total	105	105	210

$\chi^2 = 1.563$; $p = 0.211$.

Discussion

According to DLHS4, in Karnataka,^[4] family planning methods usage was 59.3%, female sterilization 51.6%, and male sterilization 0.2%, OCP 1.3%, and IUD 1.4%. Institutional delivery was 89.1%; delivery at private institution was 37.2%. Delivery by cesarean section was 7.7% in overnment and 14.5% in private institutions; 12.8% of women who delivered during last 5 years had postdelivery complications.

According to DLHS4 reports for Karnataka state, 85.9% of the women delivered during the past 1 year had postnatal checkups. According to DLHS4, in Shimoga district,^[5] 70.8% of the eligible couples used family planning, 65.6% female sterilization, 0.1% male sterilization, 0.8% OCP, and 1.8% IUD. About 97.5% of women had institutional delivery, 36.6% had delivery at private institution, and 13.7% had delivery by cesarean section at private institutions.

Increasing contraceptive use in developing countries has cut the number of maternal deaths by 40% over the past 20 years, merely by reducing the number of unintended pregnancies. By preventing high-risk pregnancies, especially in women of high parities, and those that would have ended in unsafe abortion, increased contraceptive use has reduced the maternal mortality ratio—the risk of maternal death per 100 000 live births—by about 26% in little more than a decade. A further 30% of maternal deaths could be avoided by fulfillment of unmet need for contraception. The benefits of modern contraceptives to women's health, including non-contraceptive benefits of specific methods, outweigh the risks. Contraception can also improve perinatal outcomes and child survival, mainly by lengthening interpregnancy intervals.^[6]

This study has brought to light certain significant findings that influence acceptance of contraceptive practices among rural households. It was found that rather than education level of the wife or socioeconomic status, it is the husband's education level and religion that play key roles in decisions on family planning. The results from this study are comparable with several other studies on this aspect of maternal and child health. The proportion of women who had received postnatal care after delivery was low (34%). Less than one in five women (19%) received care within 48 h of giving birth. Women in one village had less access to postnatal care than women in the neighboring one. Lack of awareness was the main barrier to the utilization of postnatal care. The woman's

own occupation and ethnicity, the number of pregnancies and children, and the husband's socioeconomic status, occupation, and education were significantly associated with the utilization of postnatal care. Multivariate analysis showed that wealth as reflected in occupation and having attended antenatal are important factors associated with the uptake of postnatal care. In addition, women experiencing health problems appear strongly motivated to seek postnatal care.

To improve access to contraceptives by the eligible couples, it has been decided to utilize the services of ASHA to deliver contraceptives at the doorstep of households and incentivize her for the effort.^[7]

In a study by Murphy and Fahey, on mode of delivery among private and public patients in an integrated maternity hospital setting, it was found that, compared with public patients, private patients were more likely to be delivered by cesarean section or operative vaginal delivery. The greatest disparity was for scheduled cesarean section. Our study showed significant association of cesarean section with higher schooling of mother and father and private hospital deliveries.^[8]

Findings from a study in Nigeria by Akinlo et al. showed that contraceptive use among postpartum women will increase substantially if more women use maternal health-care services, especially for antenatal care and postnatal care. However, this study did not show any significant association between postnatal coverage and contraceptive usage among the women.^[9]

Conclusion

Spacing methods of contraception and postnatal care are low in study population. Reproductive choice is one of the more fundamental human rights, and by freeing women from an incessant cycle of pregnancy, breastfeeding, and child care, contraception represents a huge step toward greater gender equality. The benefits to families of fewer children, in whom more resources can be invested, and the benefits to societies of reduced fertility and slowed population growth for social and economic advance and preservation of local environments are likewise important. The lifesaving effect of contraception has largely run its course in developed countries, and future major contributions to reductions in maternal deaths, and associated morbidity, are mainly restricted to countries with high fertility, where unmet need for family planning tends to be high and where abortion is typically illegal and often unsafe.

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