



The Journal of Young Investigators

The premier undergraduate research journal

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Volume 19, Issue 16
October 2009

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Abstract

India accounts for nearly 20% of maternal and child health services in the globe. This could be related to several factors such as non utilization or under utilization of maternal and child health (MCH) services. For proper programme implementation, understanding community knowledge and practices regarding maternal care during pregnancy, delivery, and postnatal period is required. To assess the utilization of MCH services, a cross sectional community based study was conducted in a sub-centre area of the Udupi District. A pre-tested questionnaire was administered to 185 recently delivered mothers and the data analyzed using SPSS (version 13.0) package. 90% of the women had at least 3 antenatal visits and 96% of them had institutional deliveries. 89% of the women were aware of the different contraceptive methods available. Around 37% of the under-fives were malnourished. Despite the findings, improving community awareness on maternal and child health (MCH) services is still required.

Introduction

India provides Maternal and Child Health (MCH) services to the community through a network of sub-centers such as; Primary Health Centers (PHC), Community Health Centers (CHC), District Hospitals, State Medical College Hospitals and other Hospitals both in the public and private sectors. The sub-centre is the peripheral outpost of the existing health delivery system in rural India that caters to a population of 5000 persons in general and 3000 persons in hilly, tribal and backward areas. Its functions are mother and child health care, family planning and immunization. PHC is a basic health unit that provides an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care. It caters to a population of 30,000 persons in the plains and 20,000 persons in hilly, tribal and backward areas. Its main functions are medical care, MCH including family planning, education about health etc. UNICEF (2009) indicates that the maternal mortality ratio in India is 300 per 100,000 live births and under-five mortality rate is 72 per 1000 live births despite the existence of National programmes for improving the maternal and child health. To combat these problems and to ensure maternal health under the Child Survival and Safe Motherhood (CSSM) programme (a component of RCH; RCH phase II is currently integrated with the National Rural Health Mission i.e. NRHM*) a massive expansion of MCH services has occurred at sub district and district levels, as observed by National Health Policy (2002). Efforts are made through Reproductive Child Health (RCH) programme to improve the utilization of the facilities and to ensure the delivery of integrated services of assured quality through decentralized planning. RCH approach emphasizes on client-

oriented, need-based high quality services with inbuilt mechanism for quality improvement, as is pointed out by National Health Policy (2002). All these efforts did not make much headway in improving the coverage and quality of services. This could be related to several factors as important one being non utilization, or under utilization of MCH services especially amongst the rural poor due to lack of awareness or access to health care services. Understanding the knowledge and practices of community regarding maternal care during pregnancy, delivery and postnatal period is required for programme implementation. Lal S et al (2002) indicates that the reported data from sub-centre and PHCs are not always reliable and most often does not reflect the true situation as supported by NFHS-2 (1998-99). Therefore the present study aims at assessing the utilization of MCH services by recently delivered mothers in the background of their socio-demographic features in a sub-centre area of a coastal district of Karnataka.

*NRHM, a mission launched by the government from 2005 to 2012, seeks to improve rural health care delivery system. Family planning, CSSM, client approach to health care, prevention and management of reproductive tract infections and sexually transmitted diseases- these four components define the RCH phase I. Essential obstetric care, emergency obstetric care and strengthening referral system are the major strategies under RCH phase II.

Materials and Methods

A community based cross sectional study was carried out in a sub-centre area of Kodi Bengre PHC in Udupi District, coastal Karnataka during August to December 2006. Among twelve sub-centers (that are function under two PHCs within a

radius of ten kilometers from our medical college), one sub-centre was chosen by lottery method. The health statistics of this sub-centre are similar to the neighboring sub-centers. The sub-centre covers a total of 1711 population with 842 males and 869 females having 289 eligible couples. A total of 185 mothers who had delivered during the five years prior to the study period and who were co-operative and present during the door to door survey were included in the study. A pre-tested questionnaire was designed under the guidance of faculty member and was pilot tested in a subset of population and suitably modified before conducting the actual survey. Information regarding socio-demographic profile, details of antenatal, natal, postnatal care, child immunization, nutritional status of children and family planning methods was collected. Informed consent was taken from the mothers and they were explained about the purpose of the study. Modified Udai Pareek scale was used to calculate socioeconomic status. Literacy was defined as those able to read and write irrespective of their age. Unskilled workers were those who did not require prescribed training for their work, semiskilled workers were those who could work even without the prescribed training and skilled workers were those who required a prescribed training before starting their profession. A fully immunized child was defined as one who received the following vaccines- one dose of BCG, three doses of DPT, three doses of OPV and one dose of Measles within one year of birth. WHO prescribed ICDS (Integrated Child Development Scheme) Growth Chart was used to assess the nutritional status of the child and grade malnutrition if detected. Primi gravidas who received two doses of TT, four weeks apart, in their second trimester, and multi gravidas who received a single booster dose of TT within two years of their previous pregnancy, were defined as adequately immunized against tetanus. A total of hundred IFA tablets (each tablet containing 100 mg of elemental iron and 500 mcg of folic acid) taken for a minimum duration of three months is recommended during pregnancy. A team consisting of a faculty member and trained medical students visited the houses and the above mentioned information was collected. Data was analyzed using SPSS (version 13.0) package and was expressed as rates, ratios and percentages.

Results

Table 1 shows the socioeconomic and demographic characteristics of the population sampled. The majority of mothers sampled were

| | | |
|----------------------------|-----|------|
| Age group | No: | % |
| ≤ 20 years | 10 | 5.4 |
| 21 – 30 years | 120 | 64.9 |
| 31 – 40 years | 50 | 27.0 |
| > 40 years | 5 | 2.7 |
| Religion | | |
| Hindus | 120 | 64.9 |
| Muslims | 59 | 31.9 |
| Christians | 6 | 3.2 |
| Education of women | | |
| Never attended school | 7 | 3.8 |
| Primary school | 42 | 22.7 |
| Secondary school | 114 | 61.6 |
| Above secondary | 22 | 11.9 |
| Occupation | | |
| Housewives | 145 | 78.4 |
| Unskilled | 7 | 3.8 |
| Semiskilled | 25 | 13.5 |
| Skilled | 3 | 1.6 |
| Professional | 5 | 2.7 |
| Per - capita Income | | |
| < 1299 | 136 | 73.5 |
| 1300 – 3999 | 42 | 22.7 |
| Above 4000 | 7 | 3.8 |
| Parity | | |
| Primi | 73 | 39.6 |
| Multi | 112 | 60.4 |

Table 1 Socioeconomic and demographic characteristics of the participants

Hindus (64.9 %) which belonged to the 21-30 years old group (64.9%). A high literacy rate of 96.2% was recorded and 78.4% were housewives by occupation. Around 76% were living in joint family type. The per capita income was deduced to be less than Rs.1299 in 73.5% of the mothers. Majority of the women (60.4%) were multiparous. It was observed that most of the women were literate and that they were aware of the health services and had utilized them.

Table 2 shows that 166 (90%) women made at least three antenatal visits while 96 % had institutional deliveries. Most of them utilized private health facilities (71.4%) for ANC. Around 5% of them approached private consultants while around 18% utilized the government health facilities. More than half of them (57.3%) paid their first visit to the health centers only in second trimester of pregnancy while 38.4% were registered during the first trimester itself. Blood pressure and weight were recorded for all the women during their antenatal visits. Majority of the mothers were subjected to all the basic minimum investigations (urine test, blood test, B.P. monitoring) and received adequate doses of Tetanus Toxoid injections and Iron and Folic Acid tablets. Around 75% of the mothers received Iron and Folic Acid tablets at least for a period of three months. Almost 72% of the mothers had normal deliveries. Most of the deliveries were conducted

| | | |
|--|-----|------|
| Antenatal Registration | No: | % |
| First trimester | 71 | 38.4 |
| Second trimester | 106 | 57.3 |
| Third trimester | 8 | 4.3 |
| No. Of ANC's | | |
| ≤ 3 visits | 22 | 11.9 |
| 4 – 8 visits | 124 | 67.0 |
| > 8 visits | 39 | 21.1 |
| Received Iron and Folic Acid tablets | 139 | 75.1 |
| Adequate dose of TT received | 127 | 68.6 |
| Blood investigation done | 153 | 82.7 |
| Urine investigation done | 123 | 66.5 |
| Delivery conducted by | | |
| Doctor | 150 | 81.1 |
| Trained Housewife | 30 | 16.1 |
| Untrained dai | 5 | 2.7 |
| Place of delivery | | |
| Government Hospital | 28 | 15.1 |
| Private hospital | 150 | 81.0 |
| Home delivery | 7 | 3.9 |
| Immunization status of children | | |
| Fully immunized | 29 | 55.7 |
| Partially immunized | 23 | 44.3 |
| Nutritional status | | |
| Normal | 127 | 63.0 |
| Grade I Malnutrition | 42 | 21.0 |
| Grade II Malnutrition | 20 | 10.0 |
| Grade III Malnutrition | 12 | 6.0 |

Table 2 Utilization of Mother and Child Health services

by doctors (81%) whereas 2.7% deliveries were conducted by untrained dais. Majority of the mothers (81%) chose private hospitals for their delivery, while 15.1% went to government hospitals and 3.9% had home deliveries. In the present study there were 52 children between the age group of 12-23 months, 29 (55.7%) of whom were fully immunized. Amongst the children who were not fully immunized, majority did not receive Measles and Vitamin A prophylactic vaccines. Only 30 out of 52

| No. of Children | Methods(n=90) | | | | |
|-----------------|----------------|---------------------|--------------------|--------------------------|-------------------|
| | OCP No: (%) | Copper-T No: (%) | Condoms No: (%) | Sterilization No: (%) | Others No: (%) |
| 1 | 1 (1.1) | 9 (10.0) | 10 (11.1) | 1 (1.1) | 6 (6.7) |
| 2 | 5 (5.6) | 8 (8.9) | 5 (5.6) | 20 (22.2) | 2 (2.2) |
| ≥3 | 1 (1.1) | 3 (3.3) | 1 (1.1) | 17 (18.9) | 1 (1.1) |
| Total | 7 (7.8) | 20 (22.2) | 16 (17.8) | 38 (42.2) | 9 (10.0) |

Table 3 Distribution of mothers according to parity and contraception use

children (57.7%) received Measles vaccine. Among a total of 201 children aged under 5 years, 37% children were found to be malnourished with 42 (21%) having grade I, 20 (10%) having grade II and 12(6%) having grade III malnutrition.

In the present study 148 (80%) women had knowledge of at least four contraceptive

methods which includes oral contraceptive pills, copper – T, condoms and sterilization but only 90 (49%) of them were using one or the other methods of contraception.

Table 3 shows that 38 (42.2%) women adopted the permanent method of sterilization. The study shows that 37 of these women (that is, 97.4% of those who adopted sterilization as a method of contraception) were having two or more than two children. Condom and copper –T were the commonly used methods (spacing method) among mothers who had only one child.

Discussion

Most maternal deaths can be prevented if women can have access to basic medical care during pregnancy, child birth and postpartum period. In India, these services are provided through a network of health centers in outpatient clinics as well as through home visits by the health workers. All the pregnant women received antenatal care in the present study as compared to 76% in a study conducted by Agarwal P et al (2007) in New Delhi on 100 married women, and 77.2% according to NFHS-3 (2005-06). The high level of literacy and awareness among the subjects coupled with the multiplicity of health services available here could be the reasons behind this success. Thus the overall utilization of health care facilities in the sample population is good. More than half of them (57.3%) paid their first visit to the health centers only in second trimester of pregnancy. The reasons for this delay could be poor accessibility, lack of awareness of the importance of early registration of pregnancy and timely antenatal visits. This is important because early administration of folic acid is essential for neural tube development in the baby. In our study all the women had their blood pressure and weight recorded during their antenatal visits. This is commendable because the national estimates as per NFHS-3 (2005-06) for the same are 63.8% and 63.2% respectively. Majority (81%) of the pregnant women preferred private health care facilities to government health care facilities. This shows that although majority of the population belonged to lower socio-economic group (73.5% of the population had per capita income < Rs.1299), 71.4% utilized private health services instead of government health facilities which were available free of cost. One probable reason could be that the private health care system has adequate staff and is well equipped with better service standards than the government sector. Hence there is a need to strengthen the government health care delivery system. Further

studies need to be undertaken to explore the reasons behind the preference for private health services. 82.7% of the pregnant women in our study had their blood samples taken during their routine antenatal visits as is supported by the National Family Health Survey (NFHS-3) of Karnataka state (2005-06) which reports 87.3%, although the percentage of women who had urine investigations done (66.5%) is much lower than the state average (85.3%). In our study, 96.1% of the deliveries were held in the hospitals of which 81.1% were conducted by doctors while a similar study by Agarwal P et al (2007) reports that only 68.2% of the deliveries were conducted by doctors, however the national estimate for the same is only 35.2%. The high level of awareness about contraception and the higher prevalence of institutional deliveries are attributable to the very high level of literacy in the subjects under study and also the availability of multiplicity of health care services in the region. It is also observed that multi parous women gave less importance and were less serious about the need for antenatal check up as compared to the primi para. This is supported by previous findings in a study conducted by Sinhababu et al (2006) in West Bengal on 360 women.

In our study 55.7% of the children were fully immunized as compared to NFHS estimate of 43.5%. 57.7% received Measles vaccine which is supported by NFHS (58.8%). The study also shows that 37% of children are undernourished which is lesser than the national estimate of 42.5%. The possible reasons for this observation could be high maternal literacy rate and better health awareness in our study population, which in turn influence the health seeking behavior of the mothers and the nutritional status of their children. Nutritionally healthy children will be less prone to infections and perform better in school which eventually leads to better productivity and life expectancy. Among the 63 couples who had more than one child, 37 of them (58.7%) adopted sterilization as their method of contraception. There is a need to motivate more and more couples to undergo sterilization after the delivery of their second child.

All the indicators in our study are above the national statistics except Couple Protection Rate and child immunization. According to the RCH national target for 2000, Couple Protection Rate is 60%, but in our study it is only 49%. The National Family Health Survey III target for child immunization is 90%, however in our study it is shown to be 55.7%.

One potential source of error in our study

could be 'recall bias' on the part of the mothers interviewed. There is also the issue of reliability of the data collected considering the fact that the interview was conducted in a non-confidential setting. Another limitation of this study could be a small localized population and hence the findings in this study cannot be generalized to the state or to India as a whole.

Conclusion

The present study findings suggest that women are aware of the available health services and have utilized them but their awareness on proper and timely vaccinations of children should be increased. Need for family planning should be instilled in them. Further, accessibility to health care equipped with modern maternity facilities will have a significant influence upon the health seeking behavior of the women. On the whole the study population is doing well when compared to the national indicators and this good work needs to be continued with focus on specific areas such as couple protection rate and child immunization. Hence there is a need for improving community awareness on maternal and child health and for motivating women to utilize MCH services.

Acknowledgments

The authors gratefully acknowledge all the cooperation extended by The Head of Department of Community Medicine, Kasturba Medical College, Manipal, medical social workers of the department and our colleagues.

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