ORIGINAL ARTICLE

Assessment of health status of neonate among Janani Suraksha Yojana beneficiaries

Saurabh Kashyap[1], Jamal Masood[2], Sheetal Verma[3]

[1]Assistant Professor, Dept of Community Medicine, Integral Institute of Medical Sciences and Research, Lucknow;
[2]Professor, Dept of Community medicine and public health, King George's Medical University, Lucknow;
[3]Assistant Professor, Dept of Microbiology, King George's Medical University, Lucknow

ABSTRACT:
Background and Objectives: Janani Suraksha Yojana (JSY), maternity benefits scheme launched by Government of India in April 2005 withthe objective is to assess the health status of neonate among Janani Suraksha Yojana beneficiaries. **Materials and Methods:** The present study was a cross sectional study conducted in Lucknow district amongst the women admitted in three blocks of rural area health centers. The blocks were selected by simple random sampling method. A total of 400 women who delivered in the labor wards of the health centers were interviewed and enrolled. Data entry and management were carried out using MS excel spread sheet. **Results:** Majority of the neonates received BCG vaccination (91.3%), OPV (92.5%) and Hepatitis. B (83.5%). Seventy one percent of the children weighed above 2.5kg. Birth weight was higher among the neonate of birth order 4 & above than 3 and 2. The length, head circumference and chest circumference was almost similar in all the birth order. Almost similar observation was found for birth interval. **Conclusion:** The Janani Suraksha Yojana scheme is showing to be effective in health status of neonate of the population but the targets are still lagging behind to fulfill the millennium development goals.
Key words: Janani Suraksha Yojana, Recently health status, neonate.

Corresponding author: Dr. Saurabh Kashyap, Assistant Professor, Dept of Community Medicine, Integral Institute of Medical Sciences and Research, Lucknow, U.P., India

INTRODUCTION

Antenatal, intrapartum and post-delivery cares are stages of health care services which provide opportunities to save the lives of neonates and prevent disease. Of 68 countries whose access to the fourth and fifth objectives of the millennium development was examined, 8.8% of new-borns die before the 5th day of birth and neonatal care coverage is inadequate for approximately 4% (1). Prenatal care and social support during pregnancy are associated with some positive outcomes such as fewer low birth weight and preterm births which lead to higher rates of mortality (2). With implementation of effective interventions for neonates and mothers, two thirds of mortalities are preventable."A strategy that promotes universal access to antenatal care, skilled birth attendance and early postnatal carewill contribute to sustained reduction in maternal and neonatal mortality."(3) Many community-based intervention packages have been implemented through government and non-government organizationsfor the purpose of advancing the health of newborns. The global burden of neonatal death is estimated to be 5.0 million of which 3.2 million deaths occur during the first week of life. Each year, 26 million infants born in India. Of these, nearly 1.2 million dies during the neonatal period, before completing four weeks of life,amounting to one quarter of all the neonatal deaths in the world .(4,5) India, thus contribute 30 percent of the 3.9 million neonatal deaths world wide.(6) Janani Suraksha Yojana (JSY) was launched in 2005 under National Rural Health Mission (NRHM), to reduce the Maternal Mortality Ratio (MMR). Accredited social health activist (ASHA), an essential part of JSY, forms an integral bridge between community and public health schemes. The aims of JSY were to promote institutional delivery by trained health professionals. Cash benefits were being given for antenatal care during pregnancy period, institutional care during delivery and even in post-partum period. With this background knowledge the focus of the study was to assess the health status of neonate among Janani Suraksha Yojana beneficiaries.

MATERIALS AND METHODS:

Study design:
Cross sectional study has been performed.

Inclusion criteria:
All pregnant mothers recently delivered at PHC/CHC under JSY, having one previous live birth.

Exclusion criteria:
a. Mothers who have not delivered at PHC/CHC under JSY.
b. Mothers with current neonate as their first delivery.
c. Uncooperative mothers.

Sampling technique and Sample size:
Out of nine blocks in Lucknow district, three Blocks were selected by simple random sampling method. One primary health center (PHC) and two community health centers (CHC), which conduct deliveries on routine basis. A sample size of 266 was estimated by taking the

165

prevalence of contraceptive method usage as 37%. The design effect of 1.5 was taken due to multistage sampling procedure. The starting point was chosen randomly. Thus a total of 400 women who delivered in the labor wards of the health centers were interviewed and enrolled.

Ethical issues:
Permission from ethical committee of the institute was taken, and all beneficiaries were explained about the purpose of study. Written informed consent was obtained from these women after explaining in detail about the study.

Anthropometric measurements:

Weight: Weight of the newborn was measured weighing machine/infant meter.

Length: At first the head of the neonate was positioned supine. The body and legs were kept straight. Then by inch tape the length of the neonate was measured in cms.

Head circumference: The measurement has been taken with a device that cannot be stretched, such as a flexible metal tape measure. The tape was wrapped snugly around the widest possible circumference from the most prominent part of the forehead (often 1-2 fingers above the eyebrow) to the widest part of the back of the head.

Chest circumference: Chest circumference was obtained by measuring around the infant's chest at the nipple line.

Data collection:
A pre tested semi-structured questionnaire was prepared to know the determinants of family planning practices. Pilot testing was done over 40 beneficiaries. Modified Udai Pareek scale was used to know socio economic status of the mothers.(7)

Statistical analysis
Data entry and management were carried out using MS excel spreadsheet and software. A result was analysed by calculating descriptive statistics proportion (%), mean and standard deviation.

RESULTS
Examination along with the anthropometric measurements of JSY beneficiaries' current neonate was done as per interview schedule.

Table 1: Distribution of neonates according to their birth weight

Birth weight	No. (n=400)	%
Low (<2500 grams)	116	29
Normal (>=2500 grams)	284	71

Table 1 illustrates that the distribution of neonates according to their birth weight. Birth weight were divided in two different categories, Low (<2500 grams) and Normal (>=2500 grams). Out of 400 neonate majority (71%) of the children weighed above 2.5kg and 29% of the neonates were having low birth weight (<2.5kg).

Table 2: Distribution of neonates according to their immunization status on first day of delivery.

Immunization Status	Given		Not given	
	No.	%	No.	%
BCG	365	91.3	35	8.8
OPV (zero dose)	370	92.5	30	7.5
Hepatitis .B (first dose)	334	83.5	66	16.5

Table 2 shows that the distribution of neonates according to their immunization status on first day of delivery. In which majority of the neonates received BCG vaccination (91.3%), OPV (92.5%) and Hepatitis. B (83.5%). Difference in the percentage of BCG, OPV (zero dose) and Hepatitis .B (first dose) were about 82.5%, 85.0% and 67% respectively.

Table 3: Measurements of Birth order of Recently Delivered child

Recently delivered child	No. N (400)	Mean weight	Mean length	Mean head circumference	Mean chest circumference
Birth order of current child					
2	180	2576.11±550.68	46.33±3.20	33.19±3.99	31.32±1.65
3	121	2621.49±541.02	46.10±2.67	32.85±1.55	31.45±2.49
4 and above	99	2846.46±331.14	47.21±2.60	32.94±1.48	32.31±2.21

The mean anthropometric measurements of current neonate are given in the table 3. The birth weight was higher among the neonate of birth order 4 & above i.e., (2846.46±331.14) than 3 (2621.49±541.02) and 2 (2576.11±550.68). The mean length, mean head circumference and mean chest circumference was almost similar in all the birth order. Mean length, mean head circumference and mean chest circumference of four and above birth order were predominance as compared to second and third birth order.

166

Table 4: Measurements of Birth interval (in yrs) of Recently Delivered child

Recently delivered child	No. N (400)	Mean weight	Mean length	Mean head circumference	Mean chest circumference
Birth interval (in yrs)					
‹1	39	2435.90±432.14	46.00±3.51	32.77±1.71	31.06±2.27
1-2	110	2467.91±498.67	46.48±2.89	33.14±4.93	31.30±1.82
2-3	77	2503.25±346.45	46.38±3.22	33.03±1.51	31.81±1.93
>3	174	2954.89±321.34	46.63±2.68	33.01±1.56	31.82±2.28

Table 4 depicts that the mmeasurements of birth interval (in years) of recently delivered child. In which we observed that the birth weight was higher among the neonate of birth interval (in years) 3 & above i.e., (2954.89±321.34) than 2-3 years (2503.25±346.45) , 1-2 years (2467.91±498.67) and less than 1 year (2435.90±432.14). The mean length, mean head circumference and mean chest circumference was almost similar in all the birth interval (in years). Mean length and mean chest circumference of of birth interval (in years) 3 & above were slightly higher as compared to other of birth intervals.

DISCUSSION

According to the UNICEF, UNPD, UNSD, World Bank and DHS (2006- 2010 Report) infants with low birth-weight was 28%. Similar finding shown in present study that, out of total 400 neonates weighed, 29% were less than 2500grams and the remaining 71% were above 2500 grams. In addition, mean birth weights were 2976 ± 476 grams.(8,9) Prenatal care and social support during pregnancy are associated with some positive outcomes such as fewer low birth weight and preterm births which lead to higher rates of mortality.(2) With implementation of effective interventions for neonates and mothers, two thirds of mortalities are preventable."A strategy that promotes universal access to antenatal care, skilled birth attendance and early postnatal care will contribute to sustained reduction in maternal and neonatal mortality."(3) In the present study it was found that majority of the beneficiaries were aware regarding the gap in the birth interval. Samuel Yohannes et al.,(10) found that the birth interval showed significant variation by contraceptive use, residence, wealth index, breast-feeding and occupation of husbands. Maternal age, maternal education, and breast-feeding were determinants of birth interval.(11) In those countries in which the relationship was significant, the reduction in stunting associated with a previous birth interval ≥36 months ranged from ∼10% to 50%.(12) A meta-analysis on child nutrition indicates that a longer birth interval is associated with a lower risk of malnutrition.(13) In present study, birth weight was higher among the neonate of birth order fourth & above as compared to third and second. Twenty eight percent of higher-class women had a 5th child compared to 2% among low status groups. The proportion having a 2nd birth was higher among lower status groups.(14) In the present study majority of the neonates received BCG vaccination (91.3%), OPV (92.5%) and Hepatitis B (83.5%). According to NFHS-2, 20.2% and NFHS-3, 23.0% children (12-23 months) were fully immunized. The children vaccinated against BCG only 56.5% (NFHS-2) and 61% (NFHS-3). Full immunization coverage increased to 30 percent in 2007-08 in the corresponding group of children (DLHS-3) Population Council 2010.(15) Present study shown that home-care strategies, including an integrated package of preventive and curative newborn care, were effective in health status of neonate.

CONCLUSION

In this small-scale study, it was evident that JSY was positively associated with health status of neonate and immunization coverage in Lucknow district. The Janani Suraksha Yojana scheme is showing to be effective in health status of neonate of the population but the targets are still lagging behind to fulfill the millennium development goals.

REFERENCE

1. Bhutta ZA, Chopra M, Axelson H, Berman P, Boerma T, Bryce J, et al.Countdown to 2015 decade report (2000-10): taking stock of maternal, newborn, and child survival. Lancet 2010;375:2032-44.
2. Marmot M, Friel S, Bell R, Houweling TA, Taylor S. Closing the gap in a generation: health equity through action on the social determinants of health. Lancet 2008;372:1661-9.
3. Home Visits for the Newborn Child: A Strategy to Improve Survival. Geneva: World Health Organization, 2009.
4. The World Health Report 1998. Life in the 21st century A vision for all. https://www.who.int/ whr/1998/ en/whr98_en.pdf (last accessed at june 2012)
5. Sample Registration System (SRS) Bulletins, 2000. http://censusindia.gov.in/ vital_statistics/SRS_ Bulletins/ SRS_Bulletins_links/SRS_Bulletin_Vol_36_Issue_2.pdf (last accessed at june 2012)
6. Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? Lancet2003; 361:2226-34
7. Arora, V. K. (2003). Udai Pareek. Journal of Health Management, 5(1), 151–153.
8. Zelalem M, Mohammed N, Incidence and correlates of low birth weight at a referral hospital in Northwest Ethiopia, Pan Afr Med J, 2012;12(4): 111-18
9. Assefa N, Berhane Y, Worku A. Wealth status, mid upper arm circumference (MUAC) and antenatal care (ANC) are determinants for low birth weight in Kersa, Ethiopia. Plos One, 2012; 7(6): 425-29

10. Samuel Yohannes, Mekitie Wondafrash, Mulumebet Abera, Eshetu Girma, Duration and determinants of birth interval among women of child bearing nage in Southern Ethiopia BMC Pregnancy and Childbirth May 2011; 11(38):12-17.
11. Rasheed P, Al-Dabal BK. Birth interval: perceptions and practices among urban-based Saudi Arabian women. East Mediterr Health J. 2007 Jul-Aug;13(4):881- 92.
12. Bairagi R, 2001, Effect of Sex Preference on Contraceptive Use, Abortion and Fertility in Matlab, Bangladesh, Int Fam Plan Pers, 27(3): 137-143.
13. Dwivedi SN, Sundaram KR 2000. Epidemiological Models and Related Simulation Results for Understanding of Contraceptive Adoption in India. Int J Epid, 29: 300-307.
14. Singh KK, Suchindran CM Singh V, Ramakumar R. et. Al., Analysis of birth intervals in India's Uttar Pradesh and Kerala States, J Biosoc Sci. 1993 Apr; 25(2): 143-53.
15. Population Council; 2010, Increasing complete immunization in Uttar Pradesh, Implications for behavior change communication, Policy Brief No.8.New-Delhi, Population Council.