Original Research Article

Birth weight and Immunization status of 0-6 year's age children attending Anganwadi centre in the urban area- A cross sectional study

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ABSTRACT

Background: Deaths among children of less than five years are preventable, mostly by vaccination. In India, the coverage still remains low, as 74.7% children between 12 to 23 months age are fully immunized in urban Telangana & 79.1% in India. This study was intended to assess the immunization status of the children between the age group of 12-60 months, and to know the birth weight.

Materials and Methods: This cross-sectional study was conducted in ICDS centers. 20 children were selected randomly as study subjects. These children were selected by lottery method. so that 480 children were covered from 24 ICDS centers of Deccan Medical College field practice area for a period of 1 year. Data was collected from the mothers of these children, using structured questionnaire.

Results: 52.5% ICDS children were born with normal birth weight. Immunization status among these children showed that 90.6% were received complete immunization, 7.7% were partially immunized, and 1.7% was not immunized.

Conclusions: Government facilities remain the main pillars of immunization. Coordination with Anganwadi centers is the key. Tracking of the child for subsequent doses of immunization remains a challenge.

1. Introduction

One of the most cost-effective and easy methods for the healthy well-being of a child is immunization. The goal of immunizing children against Tuberculosis, Polio, Diphtheria, Pertussis, Tetanus, Hepatitis B, and Measles, responsible for child mortality and morbidity, is indeed a noble one.[1]

India was one of the first countries to adopt the World Health Organization's Expanded Programme of Immunization (EPI). The program started globally in 1974 and was initiated in India in 1978. Since its inception, considerable progress has been made in terms of reduction in disease burden. Despite these achievements and tremendous advances in economic and technological spheres in recent years, the burden of vaccine-preventable diseases remains unacceptably high, in comparison to developed countries and also many developing countries.[2]

The most important indicators mentioned in the Millennium Development Goals (MDGs) for which India is a signatory, are the under-five mortality rate (U5MR) and Infant Mortality Rate (IMR). About one-quarter or 25% of the under-five mortality is due to vaccine-preventable diseases.[3]

Despite all the efforts put in by the governmental and non-governmental institutes for 100% immunization coverage, there are still pockets of low coverage areas. In India, immunization services are offered free in public health facilities, but despite rapid increases, the immunization rate remains low in some areas. According to the National Family Health survey (NFHS-4),[4] in India only 67.5% which was increased to 79.1%[5] in NFHS-5 survey, of the children of age one to two years have received the basic package. Data of NFHS-5 revealed that the percentage of

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children in Telangana state, with full immunization (BCG, measles, and three doses each of polio/DPT) was 74.7% and in the rural area of Telangana it was 81.5%.[5]

The present study was conducted to assess the immunization coverage in the urban area, Hyderabad district which is the field practice area of Deccan College of medical sciences.

2. Materials and Methods

Present study data was collected from the field practice area (Urban area) of Department of Community Medicine, Deccan College of medical sciences, Hyderabad. This is a cross-sectional study which was conducted from 1st September 2015 to 1st September 2016 [for a period of one year]. Institutional Ethical Committee approval was obtained prior to the initiation of the study. Permission from CDPO of ICDS was taken before starting the study. Anganwadi workers were informed about the visit one day before. The purpose of the study and procedure were explained to them. Children below 6 years of age, permanently residing in the urban field practice area of Department of Community Medicine, Deccan College of medical sciences, Hyderabad.

2.1. Inclusion criteria

All under 6 years children enrolled in ICDS centers.

2.2. Exclusion criteria

Children, those who are not present on the survey day & whose parents/guardians have not given consent.

2.3. Sample size

Sample size was calculated on basis of previous studies, where complete immunization was observed in 32.5%[6] children of ICDS centers. Calculated sample size was 410 at 97% of confidence interval but to cover 24 ICDS centers with equal number, 480 samples were taken.

2.4. Data collection

From each ICDS centre, 20 children were selected randomly as study subjects. These children were selected by lottery method. So that 480 children were covered from 24 ICDS centers of Deccan Medical College field practice area.

ICDS unit were visited on the dates given by CDPO.ICDS unit survey was done with all required instruments. Subjects were interviewed in the AWW and necessary procedures were followed to collect the data. Informed consent was obtained from the child's parents/guardians. Predesigned questionnaire was used to collect information from study population by personal face to face interview during the ICDS units visit. The questionnaire included socio-demographic variables of child & family (age, sex, education, occupation, type of family, family size and socioeconomic status). After examination treatment was given whenever required. Children requiring referral service were referred to nearest primary health center or medical college hospital for further management.

2.5. Immunization status

1. During ICDS visit immunization cards were verified and it was cross-checked with immunization records kept in the Anganwadi.
2. Checking for BCG mark, by asking various questionnaire to mothers are the other methods used to check immunization status.
3. The questionnaire contained information to be asked about demographic, immunization status and reasons reported by mother for not immunizing the child.
4. Fully immunized status means the children received all the doses of various vaccines till that age and partially immunized status means children not received all doses of various vaccines and not immunized are all refer those children who not received any vaccines as per UIP guidelines.

2.6. Data analysis

The data was compiled and analyzed using statistical package for social sciences software for appropriate statistical tests. (SPSS 23.0)

3. Results

The present study was conducted to know the immunization status in urban field practice area of Deccan College of medical sciences, Hyderabad. Maximum numbers of children were in the age group of 13 -24 months i.e155 (32.3%) and minimum numbers of children were observed in the age group of 61-72 months i.e. 12(2.5%). Out of 480 children, aged 0-6 years, 51.7% were males and 48.3% were female. Maximum number of children was found to be Hindus i.e. 265 (55.2%). Educational status of parents of study subjects reveals that about 31.7% fathers and 30.2% mothers were illiterate. It was observed that most of fathers i.e. 30.2% had completed high school, 15.6% of them were educated up to middle school level and only 1.3% was primary school. It was found that 28.1% of mothers were educated up to high school level, 20.0% had completed their middle school education and 0.4% was professionals. Majority of the children i.e. 412 (85.8%) belonged to the nuclear family. Majority of the study subjects i.e 256 (53.3%) belonged to upper- lower socio-economic status and only 7(1.45%) subjects belonged to upper socio-economicstatus. Majority i.e 79.0% of the subjects had family size of 3 – 5 members and about 16.3% of subjects had family size of 6 – 8.

In present study prevalence of low-birth weight is more (52.5%) in study population. Majority i.e. 203 (42.3%) of the children were of birth order one, 185 (38.5%) were of birth order two and 62(12.9%) were of birth order three. Birth order-5 children were 7(1.5%).

In the present study, majority of 435 (90.6%) children had received complete immunization. 37(7.7%) partially vaccinated and 8(1.7%) children had not received any immunization.

Table 1: Distribution of study subjects according to socio-demographic profile (n=480)

Variables	Number	Percentage
Age Group (years)		
≤12	127	26.4
13 – 24	155	32.3
25 – 36	95	19.8
37 – 48	56	11.7
49 – 60	35	7.3
61– 72	12	2.5
Male	248	51.7
Female	232	48.3
Hindus	265	55.2
Muslims	188	39.2
Christians	27	5.6
Nuclear	412	85.8
Joint	68	14.2
Socio- economic class status (based on modified kuppuswamy classification)		
Lower	0	0
Upper lower	256	53.3
Lower middle	194	40.4
Upper middle	23	4.8
Upper	7	1.5
Family size		
3 -5	379	79.0
6 – 8	78	16.2
9 – 11	20	4.2
>12	3	0.6

Table 2: Distribution of study subjects according to birth factors (n=480)

Variables	Number	Percentage
Birth Weight		
<2.5	252	52.5
≥2.5	228	47.5
Birth order		
1	203	42.3
2	185	38.5
3	62	12.9
4	23	4.8
5	7	1.5

Table 3: Immunization status of study subjects (N=480)

Immunization status	Numbers	Percentage
Complete	435	90.6%
Partial	37	7.7%
Un-immunized	8	1.7%
Total	480	100

4. Discussion

The present study was carried out to find out the immunization status in the 480 children attending ICDS centre in the field practice area of tertiary care hospital. All the participants were between age group of 0 to 6 years with mean age 24.93± 16.33 years male was 51.7% and female was 48.3%. Age and sex are basic demographic characteristics which play an important role in the study of health. In this study 55.2% of the study participants are Hindus, 39.2% Muslims and 5.6% was Christians. Most of the parents were illiterate father (31.7%) mother (30.2%). It was observed that most of the fathers (30.2%) and mothers (28.1%) had completed high school. 85.8% of the study participants live in nuclear families while 14.2% live in joint families. Type of family is an important predictor for assessment of matters like nutritional status and health pattern of an individual.

In this study majority of the participants 53.3% belonged to upper lower class while40.4% belonged to lower class, 4.8% belonged to upper middle and 1.5% belonged to upper class. Socio-economic status influences not only an individual's nutrition and health status but also the environment in which one is brought up which again affects their psychological behavior and attitudes regarding perception of matters related to health.

In this study mean birth weight was 2.74±0.43 kgs. Minimum birth weight 1.2kg and maximum birth weight 4.0kgs. Most (52.5%) of the children were underweight. These findings were contrary to study findings done by Shreyaswi Satyanath M et al.[7] i.e. majority (81.95%) of children were born with normal birth weight. Rapid survey on children in 2013-14 by Ministry of Women and Child Development- Govt. of India, fact sheet reveals that 18.4% urban children were low birth weight.(out of those weighed)[8] Majority i.e. 203 (42.3%) of the children were of Birth order one, 185 (38.5%) were of Birth order two and 62(12.9%) were of birth order three. Birth order-5 children also seen in study population, i.e.1.5%.

In the present study majority (90.6%) of children were fully immunized. 7.7% children were partially immunized and 1.7% children were un-immunized. These study results were agreement with the study done by Mohd. Shanawaz and J. Syam Sundar[9] which results shows that 89.1% fully immunized, 10% partially immunized and 0.9% un-immunized children among study group.

NFHS-4, 2015-16[4] data shows only 67.8% of urban children (till 0-23 months) was fully immunized in Telangana.

Study by Kumari PS, Thomas V. A[10] - comparative study of health profile of children (0-6years) in ICDS vs. Non ICDS urban slums of Hyderabad noted that 59.19% fully immunized, 38.07% partial immunized, 2.7% not immunized, which are lower than the present study results. The study done by Damor Raman D et al.,[11] they found that Out of 450 children, 338 (75.11%) were fully immunized, 60 (13.33%) were partially immunized and 52 (11.56%) were not immunized at all.

Present study better immunization coverage might be due to study group belongs to ICDS centre and improved awareness in population regarding vaccination.

5. Limitations

The present study was conducted in specific urban area and sample was collected from ICDS canters, not from community or door to door. Hence results were showed more coverage compare to other studies.

6. Recommendations

People of urban areas need to be made aware of the immunization facilities. There is a need for establishment of more ICDS centers in urban areas & also public private partnership to encourage better immunization status of the children at private facilities especially in urban areas.

7. Conclusion

In this study we found that the overall coverage of immunization among the urban area is good but still it has pockets of poor immunization. Immunization is often cited as being one of the most cost-effective public health interventions. Hence, more vigilant surveys should be conducted so that these pockets are identified properly and proper actions can be taken.

8. Source of Funding

None.

9. Conflict of Interest

None.

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