



IMMUNIZATION STATUS OF ONE TO SIX YEAR OLD CHILDREN COVERED UNDER INTEGRATED CHILD DEVELOPMENT SCHEME IN BERHAMPUR MUNICIPAL AREA, ODISHA

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ABSTRACT

Introduction: Immunization plays a key role in reducing the morbidity as well as mortality against the common preventable diseases of children. Even though the aim of the universal immunization programme is to provide 100 % coverage still there are many infants and children who are not protected against the killer diseases. As part of intersectoral co-ordination anganwadi centers under ICDS play an important role in immunization of children and pregnant women. The objective of the present study was to assess the immunization status of children 1-6years age group attending anganwadi centers (AWC).

Methodology: It was a field based cross-sectional study. Sample size was calculated to be 384 and multistage sampling method was used to select the study population.

Results: About 79% were from urban areas and 21% belonged to urban slums. Among them 52% were males. Vaccines coverage was highest for OPV zero dose i.e. 89% and 93% in ICDS project I and II respectively. The lowest coverage was found for Hepatitis B 3rd dose i.e. 63% as an average. Complete immunization of beneficiaries in areas where AWCs were functioning for more than 10years was about 73%.

Conclusion: Immunization coverage of children attending AWCs was not adequate and needs further evaluation.

Key words: Immunization, AWC, ICDS, 1-6yr children.

INTRODUCTION

In 1974, the World Health Organization (WHO) established the Expanded Program on Immunization to ensure that all children have access to routinely recommended vaccines.¹ Immunization prevents illness, disability and death from vaccine-preventable diseases including cervical cancer, diphtheria, hepatitis B, measles, mumps, pertussis (whooping cough), pneumonia, polio, rotavirus diarrhoea, rubella and tetanus. Global vaccination coverage estimated that 18.7 million infants are missing out on basic vaccines.² Assessing immunization status of children is a key measure of immunization system performance. It provide a coverage estimate for selected vaccines (for infants

and/or women) and also information regarding reasons for non immunization.³ Because of the national immunization programme even though the morbidity and mortality of children due to vaccine preventable diseases has gone down drastically, non-immunization, partial immunization, delay in initiation and completion of immunization of children are still quite common.

The Government of India is committed to child development as a policy priority and is expanding ICDS programme with the ultimate aim of reaching every child. The anganwadi centre (AWC) literally known as a courtyard play centre is a focal point for the delivery of services at community level to children below six years of age, pregnant

women, nursing mothers and adolescent girls under ICDS. ⁴Anganwadi worker (AWW) is the in charge of an AWC who is chosen from the community. The main services of ICDS are supplementary nutrition, immunization, health check up, referral service, growth monitoring and non formal education.⁵ The health system in rural areas uses the anganwadi centers to immunize children, pregnant women and to perform other primary health care activities. The anganwadi workers carry out the following immunization duties: - list the infants and pregnant women to be immunized; - motivate the family members to accept immunization; - assist the health teams to perform the immunizations; and - follow up and carry out first aid management of any minor side-effects resulting from the immunizations.⁶ According to NFHS 3, 81% children less than 6 years covered by AWCs, among them 20% received immunization. It is estimated that in India about 57% of children attending a health facility leave the clinic without receiving the required vaccine.⁷

With this background the present study was conducted with the objective of assessing the immunization status of children 1-6years age group attending AWCs.

MATERIAL AND METHODS

Study design & study setting

It was a field based cross-sectional study carried out in Berhampur municipal area including both urban and urban slums of Berhampur, Odisha from June 2012 to October 2012. The study population included all the children registered in AWC of 1-6 year age group.

Sample size and sampling technique

Berhampur town has 37 wards under 2 ICDS projects where 187 AWCs are functioning. The sample size calculated for this present study was population proportion with specified relative precision. For this purpose "Sample size Determination in health studies- a practical manual by WHO" was used. A rough estimate of anticipated population proportion (P) is usually sufficient to calculate the sample size. In any study if it is not possible to estimate P than it can be taken as 0.5 (i.e.50%) as the "safest" choice for the population proportion.⁸ Taking this as the prevalence with precision 10% at 95% CI the sample size was calculated to be 384. Assuming 5% non response rate calculated from a pilot study conducted taking 20 house hold under one AWC before the commencement of this study final sample size was found nearly to be 400. Multistage sampling method was used to select the study population. Each ICDS project had 18 wards.

Each ward has 5 AWCs and 2-3 Subjects are selected from each AWC using simple random sampling method so as to include children of either sex where the demographic record of respective AWCs were taken as sampling frame. Children 1-6year age group who were present during time of visit were included in the study

METHODOLOGY

The district health administration, DSWO, all the ICDS functionaries were intimated about the purpose before the commencement of the study. The mother of study subjects and AWCs were explained about the details of the study and informed consents were taken after assuring about confidentiality and anonymity of the information obtained. The parents of selected subjects under the AWCs were interviewed by house to house visit to get relevant data. Data was collected by pre designed and pre tested questionnaire regarding demographic information of study subjects and status of immunization coverage of study subjects. Immunization coverage was assessed by mother and child protection card or by recall method where the card was not available. In this study a child was considered to be fully immunized if all primary immunization till measles 1st dose had been administered by completion of one year of age and completely immunized if all the doses of the vaccine till measles 2nd dose and DPT booster was taken.^{9,10} If none of these vaccines had been administered, then the child is termed as unimmunized (zero dose of OPV / Pulse polio immunization / optional vaccines are excluded for evaluating the immunization status). Non-completion of the scheduled doses made the child partially immunized. Both descriptive and inferential statistics were applied and final analysis was done by using SPSS version 20.0 and $p < 0.05$ taken as statistically significant. For categorical variable chi-square test was applied regarding any statistical association.

The study was approved by Institutional Ethics Committee of the M.K.C.G Medical College ensuring not to harm physically, psychologically, emotionally, maintaining privacy, self respect and confidentiality.

RESULTS

The data was collected from 405 beneficiaries during the study. Majority i.e.79% was residing in urban non slum areas and 21% belonged to urban slums.

Table-1: Immunization coverage among 1-6year age children

Vaccine	ICDS I	ICDS II
BCG	179(89%)	189(93%)
OPV0	179(89%)	189(93%)
OPV1	183(91%)	188(92%)
OPV2	177(88%)	184(91%)
OPV3	155(77%)	170(84%)
DPT1	169(84%)	176(87%)
DPT2	159(79%)	164(81%)
DPT3	155(77%)	162(80%)
HBV0	179(89%)	185(91%)
HBV1	139(69%)	158(78%)
HBV2	131(65%)	140(69%)
HBV3	123(61%)	130(64%)
Measles	149(74%)	166(82%)
OPV Booster	121(60%)	126(62%)
DPT Booster	95(47%)	93(46%)
Measles 2 nd	16(8%)	18(9%)

Table 2: immunization status non-slum AWCs vs slum AWCs

Immunization status	Non-slum	Slum	total
Complete immunized	256 (80)	46 (53)	302(74.5)
Partial immunized	64(20)	39 (47)	103(24.5)
Total	320	85	405

Figure in parenthesis indicate percentage. P value 0.05

Table 3: Immunization status verses years of AWCs establishment

Years AWCs establishment	>10yrs	5-10yrs	<5yrs
Complete immunized	217(53.5)	64 (16)	19 (4.6)
Partial immunized	54 (13.3)	29 (7)	22 (5.4)
Total (n=405)	271(67)	93(23)	41(10)

Figure in parenthesis indicate percentage. P value <0.05

Table 4: Immunization status and AWCs status

Grading AWCs	Complete immunized	Partial Immunized
Grade I	30(7%)	12(3%)
Grade II	66(16%)	17(4%)
Grade III	150(37%)	51(13%)
Grade IV	36(9%)	43(11%)

Figure in parenthesis indicate percentage. P value <0.05

Table -5: Immunization status and updated record of immunization

Immunization status	Record of immunization updated	Record of immunization not updated
Complete	257 (63.5)	42(10)
Partial	34(8.5)	72(18)
Total	291(72)	114(28)

Figure in parenthesis indicate percentage.

Females were 48% and 52% were male children. Regarding age distribution 65% belonged to 1-3year age group and 35% were in 3-6year age group. It was seen that 67% AWCs had been established more than 10 years back followed by 23% which were 5-10 years old and 10% AWCs were less than 5 years old. Nearly equal proportion of children belonged to the both ICDS project.

Among individual vaccines, coverage was highest for OPV zero dose i.e. 89% and 93% in ICDS project I and II respectively. The lowest coverage was found for Hepatitis B 3rd dose i.e. 63% as an average. The coverage of DPT3 and OPV3 were nearly same. Vaccination status gradually decreased after first dose and reached to lowest level at 3rd dose. (Table 1) Majority 74.5% children were completely immunized and 24.5% were partially immunized. The proportion of complete immunized children in slum areas was very low i.e. 53% where as in non slum areas it was 80%. On comparison of immunization status with slum verses non-slum area, there was a statistical significant association present. (Table 2)

It was observed that booster immunization among study population of OPV, DPT and 2nd dose of measles was 60%, 47% and 8% respectively. Majority, i.e. 61% got immunized outside i.e. govt. hospital, private clinic and only 39% of total children got vaccinated in AWCs. The reasons for partial immunization were as follow; lack of information (47%), lack of motivation (17%), obstacles like far away session site and inconvenient timing (36%). Lack of information included the unawareness regarding need for immunization, need to return for 2nd and 3rd dose, place & time of immunization, fear about side reactions etc.

Complete immunization of beneficiaries in areas where AWCS were functioning for more than 10years was about 73% whereas in AWCs of 5-10 yrs and less than 5yrs of establishment it was 21% and 6% respectively. When immunization of children were compared with the years of functioning AWCs, there was a statistical significant association was found (Table 3). AWCs were graded according to 100 point grading system based upon physical set up, coverage area and activities; Grade-I above 80, Grade-II above 70 to 80, Grade-III above 60 to 70 and Grade-IV 60.¹⁶ It was found that grade III AWCs has maximum immunization coverage i.e. complete (37%) and partial (13%) and also there was a statistical significant association was found. (Table-4).Majority 72% children had updated immunization cards whether partial or complete. Similarly among 28% children, the immunization cards were not updated.

DISCUSSION

Majority study population belonged to urban non slum areas. In this study male children were more i.e.52%. In a study conducted by J.B. Surwade et al¹¹ on utilization of ICDS scheme in Latur district male children were more in urban area i.e.56%. In present study children in the group 1-3 year were more i.e. 65% but in a study conducted by S. Trivedi et al¹² on utilization of ICDS scheme in Indore 80% of children belonged to age group 2-6yrs. Immunization coverage was lesser in urban slum areas than non-slum areas indicating requirement of more health promotion and education by AWWs in slum area. In this study measles 1st dose coverage and DPT booster coverage was 74% and 47% whereas in a study conducted by S. Bhavsar et al¹³ on assessment of nutritional status and immunization coverage of anganwadi children in Rafiq nagar, Mumbai, the measles 1st dose coverage and DPT booster coverage was 52% and 35% respectively. Majority i.e 82% were complete immunized in Madhya Pradesh and 100% immunization was found in Haryana state ICDS report¹⁴. But in this study only 74.5% were found complete immunized and 24.5% were partially immunized. Reasons for not immunizing the children in Impact assessment of ICDS in Madhya Pradesh,¹⁵ majority had fear of side effect(53%) and 47% did not feel the need of immunization but in this study majority parents were not immunizing their children due to lack of information i.e. 47%.

CONCLUSION

Even though immunization is an important activity under ICDS, the coverage was not proper. Health information and education about the importance of complete immunization needs to be stressed upon both to the AWWs and the parents and motivation should also be considered seriously. Majority of the parents were unaware about an important programme like immunization; hence propaganda of these programme is necessary. Dissemination of information regarding the immunization schedule and other nutrition programme should be done by the Anganwadi worker. Periodic assessment of the functioning of the whole system and correction of specific areas of deficiencies are also major requirements.

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