

EVALUATION OF IMMUNIZATION COVERAGE AMONG CHILDREN BELOW 5 YEARS OF AGE IN A TRIBAL COMMUNITY IN GADCHIROLI DISTRICT, MAHARASHTRA, INDIA**Dr. Kunal Modak^{*1}, Dr. Shashikant Shambharkar², Dr. Ravindra Chaudhari³**¹District Malaria Officer, Gadchiroli, Maharashtra.²District Health Officer, Gadchiroli, Maharashtra.³Taluka Health Officer, Gadchiroli, Maharashtra.***Corresponding Author: Dr. Kunal Modak**

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ABSTRACT

Background: The major causes of under-5 mortality in India are vaccine-preventable diseases like Japanese Encephalitis, tetanus, TB, Poliomyelitis, Pertussis, Measles etc. India has the largest dropout rate for three doses of DPT vaccine, as per World Health Organization reports. **Objectives:** To assess the immunization coverage among children below 5 years of age in tribal area of Gadchiroli district, Maharashtra, India. **Materials and Methods:** A descriptive cross-sectional study has been conducted among 210 children below 5 years of age group from tribal areas under PHC Godalwahi of Dhanora block of Gadchiroli district, for a period of two months during September and October 2017. A pre-designed, pre-tested questionnaire has been used to collect required information with verification of immunization card and where the card is not available, by examination of scar mark or interviewing the respondent. The traditional EPI cluster survey chose a fixed sample of 30 children in 7 different areas. The collected data was entered in Microsoft Excel and analyzed using SPSS software for Windows version 20.0. Categorical data was presented as percentage (%). Chi-square test of significance was applied to test the association between various variables and status of immunization coverage. **Results:** Out of total 210 children below 5 years age group surveyed, 54.2% (114) were males and 45.8% (96) were females, and 188 (89.52%) were fully immunized, whereas 22 (10.48%) were partially immunized. **Conclusion:** Higher coverage of full immunization for individual vaccines in our survey indicates better access to immunization services by the selected tribal population of Gadchiroli.

KEYWORDS: Immunization coverage, Full immunization, Tribal, Gadchiroli.**INTRODUCTION**

A vaccine is an immunobiological substance designed to produce specific protection against a given disease. Immunization is a cost effective, safe and convenient process of preventing communicable diseases. It reduces the morbidity and mortality among infants and children below 5 years of age significantly that occurs due to communicable diseases. Prophylactic primary immunization given in the first year of life against the vaccine preventable diseases (VPD's) like Yellow fever, Haemophilus influenza type B, Hepatitis B, Rotavirus diarrhoea and Pneumonia is an effective primary mode of prevention.^[1]

In rural India, childhood immunization status remains low as majority of children do not receive all the recommended all vaccine doses before 1 year of age. Though at birth, children are protected against some diseases because of maternal antibodies, after birth, they need to receive additional antibodies for broad range

protection from various diseases through artificial immunization.^[2]

In tribal areas like Gadchiroli district, access to immunization remains a challenge. In recent years, Central government, State government and different NGOs have rolled out strategies to improve the accessibility problem. Despite their efforts mortality remain unacceptably high in some tribal regions.

World Health Organization (WHO) initiated the Expanded Programme on Immunization (EPI) to make vaccines available to all children worldwide to counter mortalities caused due to diseases like Yellow fever, Haemophilus influenza type B, Hepatitis B, Rotavirus diarrhoea and Pneumonia. Generally, improvements have been recorded in health, economics, social and political indicators in Gadchiroli District in recent years. However, childhood immunization coverage remains a

concern despite of initiatives by government and private sector players.^[3,4]

In order to achieve the Expanded Programme on Immunization target in this tribal area, quality, reliable and authentic data are useful.^[5] These data will help for design and implementation of interventions for the control and eradication of vaccine preventable diseases.^[6] The need for the precise and accurate data of immunization rates and the possible causes of the poor coverage in specific regions to enable well directed interventions will help reduce under-five mortality rates in this area. Thus, the objective of this study was to evaluate the immunization coverage among children aged below 5 years in Gadchiroli, Maharashtra.

MATERIALS AND METHODS

Study area: The study was conducted in tribal areas under PHC Godalwahi of Dhanora block of Gadchiroli district, for a period of two months during September and October 2017. The main occupation in these areas is agriculture. There are many fixed locations for routine immunization. Routine immunization services is held once a month in the Primary Health Care centres.

Study population

This study is conducted among 210 children below 5 years of age group from tribal areas under PHC Godalwahi of Dhanora block of Gadchiroli district. In the case of a mother with more than one child within the age range, the younger child was recruited into the study as this gave a better reflection of the current practice of the mother.^[7]

Study design

A descriptive cross sectional survey of mothers of children below 5 years of age was conducted.^[7]

Sampling technique, Study instrument and Data management

A pre-designed, pre-tested questionnaire has been used to collect required information with verification of immunization card and where the card is not available, by examination of scar mark or interviewing the respondent. The questions were specific, as well as the required answers; hence there was very limited room for inter-observer errors. The traditional EPI cluster survey chose a fixed sample of 30 children in 7 different areas. The collected data was entered in Microsoft Excel and analyzed using SPSS software for Windows version 20.0. Categorical data was presented as percentage (%). Chi-square test of significance was applied to test the association between various variables and status of immunization coverage.

Ethical issues

Permission was obtained from the Primary Health Care coordinator (District Health Officer of Gadchiroli). Informed consent was obtained from mothers who participated in the study after a detailed explanation of the purpose of the study and the required assistance. Confidentiality was maintained during the course of the study by ensuring face to face interviews by each interviewer without a third party and information obtained during the study was kept confidential. All mothers with children who were not completely immunized were properly counselled and referred to the primary health care centre for immunization.

RESULTS

Out of total 210 children below 5 years age group surveyed, 54.2% (114) were males and 45.8% (96) were females, and 188 (89.52%) were fully immunized, whereas 22 (10.48%) were partially immunized.

According to survey, coverage for DPT and OPV is 97.3%, BCG vaccination coverage is 99.7%, Measles vaccination and HBV coverage 95.45% (Table 1)

Table 1: Individual vaccine coverage.

Name of the vaccine	Vaccine coverage number	Percentage covered
DPT and OPV	209	99.52
HBV	207	98.57
BCG	209	99.52
Measles	207	98.57

Table 2: Missed vaccines chart.

Variables	Male	Female	Total Percentage
No dose of Hepatitis B Vaccine	2	3	5(22.72)
Measles	5	7	12 (54.54)
No Final dose of DPT, OPV and HBV	3	2	5(22.72)
No vaccines given at all	0	0	00(00)

Table 2 reveals that out of 22 children below 5 years age group who were not fully immunized, 12 (54.54%) missed Measles vaccine doses, 5 (22.72%) 3rd dose of DPT, OPV and Hepatitis B vaccine, 5 (22.72%) missed dose of Hepatitis B Vaccine.

Table 3: Religion wise distribution of population in these areas.

Religion	Percentage
Hindu	81
Muslim	04
Christian	05
Buddhist	10

Table 3 indicates the distribution of survey population according to religion. It reveals 81% belong to Hindu, 4 % Muslim, 5% Christian and 10% Buddhist.

Table 4: Socioeconomic statuses of parents (Based on Modified Kuppasamy's scale (2007) $X^2 = 2.152$, $df = 2$, $p > 0.05$).

Socioeconomic Status	Total	Fully Immunized	%	Partially immunized	%
Upper	17	17	100	0	0
Upper Middle	20	18	90	02	10
Middle	43	42	97.67	01	2.33
Lower middle	56	50	89.28	06	10.72
Lower	74	61	82.43	13	17.57
Total	210	188	89.52	22	10.48

Table 4 illustrates about the socioeconomic conditions of parents and immunization percentages.

Table 5: Causes of Partial Immunization.

Reason	Number	Percentage
Fear of adverse effects	2	9
Cost	0	0
Negligence	8	36.36
Lack of faith	1	4.5
Not aware about immunization time/schedule	11	50

Table 5 reveals the most possible causes of partial immunization.

DISCUSSION

This study reveals that out of the total 210 children below 5 years age group, 54.2% (114) were males and 45.8% (96) were females. It has also been found that 188 (89.52%) were fully immunized, whereas 22 (10.48%) were partially immunized. According to survey, coverage for DPT and OPV is 97.3%, BCG vaccination coverage is 99.7%, Measles vaccination and HBV coverage 95.45%. From the present study it is clearly observed that there is higher coverage of BCG vaccine among children below 5 years of age in Gadchiroli area. It also revealed that socioeconomic conditions affect immunization of children. Upper class, upper-middle and middle class societies are concerned about vaccination programs where as lower class and middle-lower class somewhat lacking in this regard.^[8,9] The main reason behind partial immunization as per our study is lack of knowledge regarding schedule, negligence, fear of adverse effects.

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