

PRIMARY IMMUNIZATION STATUS IN RURAL BLOCK OF KANPUR DISTRICT

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ABSTRACT:

Research question: What is the status of primary immunization of children in the age group of 12-23 month

Objective: To assess the status of Primary immunization in age group of 12 to 23 month Children,

To compare the primary immunization in intensive and twilight villages,

To study the influence of social factors affecting immunization &

To find out reasons for immunization default

Study design: cross sectional study

Setting and participants: rural block of Kanpur District and mothers of children in age group of 12-23 months.

Study period: July to December 2005

Sample size: 280 mothers of study group children.

Study variable: Immunization status, social factors, vaccine, reasons for immunization default

Results: 32.85% of children were fully immunized. Highest (92.85%) covered antigen were found as OPV-1 and lowest (41.78%) covered antigen as DPT-3. Literacy and joint family had positive impact on immunization status. The main reasons were observed for immunization default as ignorance (about need/place/person/time) and distance factor.

Conclusion: Quantity wise coverage was quite satisfactory. High dropout rate due to ignorance and distance factors should be taken into

Introduction:

Vaccine preventable diseases are wide spread and are major causes of childhood morbidity, mortality and life long physical and mental disabilities. To combat these diseases, immunization, proper sanitation and provision of safe drinking water are the best option. Immunization is one of the cost affective weapons for disease prevention. Expanded programme on immunization (EPI) was launched in 1974 by WHO, against six, most common, preventable childhood diseases viz diphtheria, pertusis, tetanus, polio tuberculosis and measles. Government of India launched EPI in 1978. Universal Programme of Immunization (UIP) was started in 1985⁽¹⁾. UIP aims of completing the primary immunization (one dose each of BCG and measles, and three doses of DPT and OPV) for all children in the country by the time they become one year old⁽²⁾. Although an old and dedicated programme, immunization coverage achieved so far are not at all encouraging. The situation in Uttar Pradesh (UP) is particularly worse. According to district level household survey 2 (DLHS-2), the primary immunization coverage level of UP was as fully immunized 26.4%, non immunized 23.4% and the measles coverage rate 35.4% as compared to the value for India i.e. 46%, 20% and 56% respectively⁽³⁾. To view the current situation in rural area of Kanpur District in UP, this study was designed with following

objectives:-

- ❖ To assess the status of primary immunization in age group of 12 to 23 month children.
- ❖ To compare the primary immunization in intensive and twilight villages.
- ❖ To study the influence of social factors affecting immunization & to find out reasons for immunization default.

Materials and Methods:

A cross sectional study was done. Pre-designed and pre-tested semi structured schedules were used for obtaining information. First author himself filled the schedules. The mothers, who had live 12-23 month year old children, were considered as a respondent unit. Multistage random sampling technique was adopted to reach the respondent unit. Study was conducted in rural block of Kanpur district of Uttar Pradesh. In first stage one PHC (Primary Health Center) i.e. Bithoor PHC of Kalyanpur block was selected randomly. Selected PHC caters about 38,000 populations through five sub centers and the population was spread over 50 villages. All sub centre villages of Bithoor PHC were considered as intensive area villages and rest of the villages were considered as twilight area villages. In second stage, each intensive village was divided into four quadrants and for each of them

four twilight villages were randomly selected. Thus there were 5 intensive service area villages and 20 twilight area villages. Purposively, from each quadrant of intensive area village and from each selected twilight area village, seven respondent units were interviewed. Thus making sample size to a total of 280 of which 140 respondents were from intensive and 140 respondents were from twilight area villages. In third

stage one lane of the twilight village or quadrant of intensive village was selected randomly by using currency note last digit number. From selected lane house-to-house visit were done in each selected village or quadrant, till the required seven respondent units were interviewed.

Results :

Table 1
IMMUNIZATION STATUS OF CHILDREN (12 - 23 MONTH)

Status	Intensive		Twilight		Total	
	No.	%	No.	%	No.	%
Fully Immunized	52	37.7	40	28.5	92	32.85
Partially Immunized	84	60	91	55	175	62.5
Non Immunized	4	2.85	9	6.47	13	4.64
Total	140	100	140	100	280	100

$$\chi^2 = 3.18, df=2, p \leq .05$$

Out of total 280 children of age group 12-23 months, 32.85 % Children were fully immunized where as 62.50 % were partially immunized. Fully immunized children were more in intensive area villages (37.14%) while non-immunized children were more in twilight area villages (6.47%) and the difference was not statistically significant.

Table 2
ANTIGEN COVERAGE STATUS AMONG STUDY GROUP CHILDREN

Status	Intensive (140)		Twilight (140)		Total (280)	
	No.	%	No.	%	No.	%
BCG	124	88.50	109	77.85	233	83.21
OPV1	133	95.00	127	90.71	260	92.85
OPV2	127	90.71	114	81.42	241	86.07
OPV3	123	87.85	98	70.00	221	78.92
DPT1	133	95.00	99	70.71	232	82.85
DPT2	102	72.85	91	65.00	193	68.92
DPT3	70	50.00	47	33.57	117	41.78
Measles	84	60	67	47.85	151	53.92
Vit A first dose	39	27.85	10	7.14	49	17.50

Highest converge of vaccine was observed for OPV1 (92.85%) followed by OPV2 (86.07%), BCG (83.21%), DPT1 (82.85%). Poor coverage was observed for Vit-A first dose (17.50%), DPT3 (41.78%) and for measles (53.92%). The higher coverage was seen in intensive area in comparison to twilight area village.

Table 3
EDUCATION OF MOTHER AND IMMUNIZATION STATUS OF CHILDREN

Immunization status	Education of mother			
	Illiterate	Primary	Middle	Secondary & above
Fully-Immunized	29 (31.52)	28 (30.43)	25 (27.17)	10 (10.86)
Partially-Immunized	91 (52.00)	51 (29.14)	28 (16.00)	5 (2.85)
Non-Immunized	10 (76.92)	3 (23.07)	0 (0.0)	0 (0.0)

(Figures in parenthesis show the percentage) $\chi^2=27.36$, $df=6$, $p \leq .05$

Partial immunization (52.00%) and non-immunization (76.92%) was found to be more in children of illiterate mothers while fully immunized children were from the literate mother (68.48%). Thus the table depicts the influence relationship between education status of mother and immunization status of their children and the difference was found statistically significant.

Table 4
TYPE OF FAMILY AND IMMUNIZATION STATUS OF CHILDREN

Type of family	Status			Total
	Fully-Immunized	Partially-Immunized	Non-Immunized	
Nuclear	25 (21.01)	84 (70.58)	10 (8.40)	119 (100)
Joint	64 (43.24)	82 (55.40)	2 (1.35)	148 (100)
Extended	3 (23.07)	9 (69.23)	1 (7.69)	13 (100)

(Figures in parenthesis show the percentage)

Pattern of immunization among different types of families showed that complete immunization was achieved maximum (43.24%) in children belonging to joint families where as minimum (21.01%) in nuclear families. Maximum number of children, who were either partially immunized or non immunized, belonged to nuclear type of families.

Table 5
REASONS FOR IMMUNIZATION DEFAULT

Status	Intensive	Twilight	Total
Long distanc/too far	18 (20.45)	27 (27%)	45 (23.93)
Ignorance (about need/place/person/time)	59 (67.04)	66 (66%)	125 (66.48)
Fear of adverse effect	7 (7.95)	6 (6)	13 (6.91)
Child illness	4 (4.54)	1 (1)	5 (2.65)
Total	88 (100)	100 (100)	188 (100)

(Figures in parenthesis show the percentage)

The reasons for immunization default were grouped under four categories as long distance, ignorance, fear of adverse effects and child illness. Over all commonest reason cited for immunization default was ignorance (66.48%) followed by long distance (23.93%), fear of adverse effect (6.9%) and children with illness (2.65%). This trend of reasons was almost similar to both intensive and twilight area villages.

Discussion :

Study was conducted during the year -2005. Bithoor PHC situated just 1Km from the right bank of river Ganga. Most of the villages, catered by PHC, were lacking Basic

facilities, like electricity, public transport etc and are difficult to access. Majority of population belonged to Schedule Caste & Other Backward Caste category and labors or Agricultural by occupation. As the observation of study depicts that only

one-third-study group children had completed their primary immunization and rest of the children either partially immunized (62.5%) or had not received any vaccine (4.14%). DLHS-2⁽³⁾ data of Kanpur District revealed 44.2% as the full immunization coverage, slightly higher than our observation (32.85%), which could be due to rural-urban variation. Mathew et al⁽⁴⁾ (2001) in their study found that only 25 % of study group children had received complete primary immunization. Jain et al⁽⁵⁾ (2006) in Rajasthan had reported the almost similar pattern of immunization status to the present study. In our study the highest covered antigen was OPV1 (92.85%) and the lowest covered antigen were DPT3 (41.78%) and measles (53.92%). Manjunathan and Pareek⁽⁶⁾ (2003) also found high level of initial vaccination rates and low level of DPT3 (62.7%) and measles (51.8%). Bhatia et al⁽⁷⁾ (2004) observed that overall coverage of antigen was good as high as 93.09 % for BCG & OPV1/ DPT1 and as low as 76% for measles vaccination. So this tendency to incomplete immunization needs to be addressed. As various studies^(11,12,13) has been done and showed that the education has positive effect on utilization of health facilities. Our study highlighted the influence of maternal education on accepting the immunization services. Our study revealed that immunization status of children, which were fully immunized, belonged to educated mother and as the literacy level decreased, the number of children partly immunized or non-immunized also increased. Singh and Yadav⁽⁸⁾ (2001), Partha & Bhattacharya⁽⁹⁾ (2002) in their study also highlighted the influence of literacy on vaccine coverage level of child. They found that the coverage level was lower for children of illiterate mothers and in small, inaccessible villages. Socio-cultural factors also influenced the utilization of services. As In our study those children living in joint families showed better immunization coverage as compared to other types of families this was because of in rural area there are strong bondage among the family members. As in our study only 32.85% of children received full coverage of primary immunization rest were either not immunized or left incomplete. When the reasons for low coverage were interrogated, the main reasons were appeared to be ignorance about schedule of vaccine, necessity, place, person, and long distance to travel for vaccination, fear of adverse effect & child illness. Khar et al⁽¹⁰⁾ (2001), Mathew et al⁽⁴⁾ (2002), Manjunathan & Pareek⁽⁶⁾ (2003), Jain et al⁽⁵⁾ (2006) had also cited almost similar observations for immunization default.

Conclusions :

Quantity wise individual vaccination coverage was good but quality wise only 1/3rd immunized children received the full package. Joint families and higher level of education had

positive impact on acceptance of immunization. Identified reasons for immunization default was ignorance, distance factor and fear of adverse effect of vaccination. Health education & awareness increasing programme should be conceived and implemented to create demand for the services.

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