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Research Article

IMMUNIZATION STATUS OF TRIBAL PRESCHOOL CHILDREN IN KOZHIKODE, A DISTRICT IN NORTH KERALA

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A B S T R A C T

Background: One of the most cost-effective and easy methods for the healthy well-being of a child is immunization. Inspite increase in coverage, the immunization rate remains low in some areas

Objective: The objective of the study was to study the immunization status of the Pre School tribal children aged 3 to 6 yrs and to find out various factors associated with poor immunization.

Materials and Methodology: The present study was carried out in 10 panchayaths of Kozhikode district. In this descriptive cross sectional study tribal children in the age group of 3-6 years were assessed for their immunization status.

Results: The rate of full immunization was 178 (67.4%), 70 (26.5%) partial immunization and the unimmunized children were16 (6.1%). The most common reason for not immunizing the child was 'fear of side effects' 62.5% and for partially immunizing the child was 'visit to native place 34.3%. There was significant association between poor immunization status and poor socioeconomic status, home delivery, and not having immunization card. Conclusion: The overall coverage of immunization among the tribal area is good but still it has pockets of poor immunization.

INTRODUCTION

Infectious diseases are a major cause of morbidity and mortality in children. One of the most costeffective and easy methods for the healthy wellbeing of a child is immunization. National immunization program in India has a primary objective of reducing morbidity and mortality due to vaccine preventable diseases. 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 . According to the National Family Health survey (NFHS-4) in India only 62% of the children of age one to two years have received full immunization (BCG, measles, and 3 doses each of polio and DPT According to NFHS-4 (2015-2016) rural area of Kerala, 82% children were fully immunized, while the total rates in the state of Kerala were 82.1%.The present study was conducted to assess the immunization coverage, to find out the various reasons for partial or non-immunization of children in the tribal area, Kozhikode district .

Objective

1. To study the immunization status of tribal children aged under 3- 6 years
2. To study the associated factors related to un immunization

METHODOLOGY

A cross sectional descriptive study was conducted to find out the immunization status of pre- school tribal children in Kozhikode district from July 2011 to December 2011 over a period of 6 months . Cluster sampling method was done. Panchayats having tribal population (33panchayats) were taken as clusters. 10 clusters from 33 were selected by simple random technique. Sample size was calculated by the formula

$$n = 4 \times \frac{p\,q}{d^2} \times \text{design effect}$$

Prevalence (p) of malnutrition of tribal preschool children in Kerala was 44.4% in DLHS -2 (2002-2004)

$$= \frac{4 \times 44.4 \times 55.6}{7.1 \times 7.1} \times 1.24 \quad = \quad 241$$

The Tribal population in Kozhikode (2011) was 15228 (0.49% of total population). Out of total 272 eligible tribal children (total preschool children in 10 Panchayats) in the age group of 3 to 6years, 264 participated in the study. The response rate was 97.05%.

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Inclusion criteria: Children between 3-6 year, those residing at least for 6 month in study area and those children whose parents were willing for study.

Exclusion criteria: Children who are seriously ill, those children whose parents were not present during the visit and those children whose parents were not willing for study.

Data collection method

Consent was taken from parents or family head. Data was collected using preformed questionnaire, which includes general information, and socio-demographic factors. The age of child was confirmed either by parents or anganwadi worker. Children who received BCG, measles, and three doses each of DPT and polio (excluding polio 0) are considered to be fully vaccinated. All the vaccines must be administered by the time the child is one year of age. Information regarding birth date, vaccination card, dates of vaccines received, presence of BCG scar and reasons for incomplete or no vaccination was collected through pretested questionnaire schedule. Dates of vaccines received were verified from Anganwadi record in case vaccination card was not available. Response rate was 97.05. The total number of children examined was 264.Proof of immunization: The child was considered as immunized or not immunized based on information on the immunization card. For those without an immunization card, information from the mother or any other responsible and reliable person in the family stating that the child had been immunized was considered. If the mother could not remember anything about the vaccination or in presence of any other confounding factor, the child was considered as not immunized with the vaccine under consideration. The child was considered fully immunized if he/she had received one dose of BCG, three doses of DPT, three doses of OPV, and one dose of measles, and as unimmunized if he/she had received none of these vaccines, and partially immunized if the child get at least one dose of any vaccine, but immunization was not complete. The OPV given in PPI was not considered for classification. In case of a partially/non-immunized child the most important reasons for not immunizing were asked. The data was compiled and analyzed using statistical package for social sciences software for appropriate statistical tests.

Ethical clearance: The study was approved by ethical committee of Govt. Medical College Kozhikode.

RESULTS

The distribution of tribal preschool children among clusters: The distribution of tribal preschool children among the 10 clusters (table1) studied in Kozhikode district, Maximum children were in Kodenchery panchayath 62 (23.5%) and minimum number in Koorachundu panchayath 5(1.8%). Males constituted 134 (50.6%) and females were 130 (49.4%) of the study population. Among the 6 groups, Paniyars 122 (46.2%) constituted major group, followed by Karimpalan 70 (26.5%), Kurichiar 34 (12.8%), Muthan 30 (11.4%), Kadavar 6 (2.3%) and Kattunaikan 2 (0.8%).

Table 1 Preschool children/ tribal group

Category	n=(264)	%
Paniyar	122	46.2
Karimpalan	70	26.5
Kurichiar	34	12.8
Muthan	30	11.4
Kadavar	6	2.3
Kattunaikan	2	0.8

The age and sex distribution of the study population

Among the study group, 50.8% were males and 49.2% were females. 23(8.7%) mothers and 17(6.8%) fathers had no school education.

Socioeconomic status was assessed by using modified UdaiPareek's scale[57]. Majority 241(91.3%) belonged to lower socio economic class followed by middle class 23 (8.7%). Majority 187(70.8%) were born at hospital (govt), 66 (25%) were at home and the rest 11(4.2%) were at private hospitals. Mean number (SD) of siblings was **1.64(0.99). (**Median2, minimum 0 and maximum was 5) in the study group. Most of the children had 2(41.2%) or 1 (32.6%) siblings. 11.4% had no siblings.

Immunization status of the Tribal children

Table 2 Immunization status

Immunization status	Number	%
Fully immunized	178	67.4%
Partially immunized	70	26.5%
Unimmunized	16	6.1%

Partially vaccinated and fully immunized children categorized as immunized children 248(93.9%) 16 (6.1%) were un immunized

Table 3 Status of UIP vaccines in partially vaccinated children (N=70)

Vaccines	Received		Not received	
	Number	%	Number	%
BCG	68	97.1%	2	2.8%
DPT	67	95.7%	3	4.3%
OPV	67	95.7%	3	4.3%
MEASLES	48	68.5%	22	31.5%
Vit.A	249	94.3%	15	5.7%

Among the partially immunized children 97.1% children took BCG was the highest . 95.7% (67) children received DPT, Among this 54 (80.6%) took three doses, rest 11.9% (8) received twice and 7.4% (5)received it only once. The OPV drops were received by 95.7 % of children, 80.6% percent children received OPV drops 3 times. It was found that around 31.5% children had not received vaccination for measles. 249 children received at least one dose of Vitamin A, but out of six doses, the median dose of Vitamin A taken was only 2

Reasons for partial/ un immunization

Table 4 Reasons for un immunization (N=16)

Reasons	Number (N=16)	%
Due to fear of side effects/reaction	10	62.5%
Unable to attend the vaccination site	4	25%
Due to diseases	2	12.5%

Table 5 Reasons for partial immunization (N=70)

Reasons	Number (N=70)	%
Visit to native place	24	34.3%
Inconvenient time	20	28.5%
Due to child diseases	18	25.7%
Family problem including illness of mother	8	11.5%

Association of immunization coverage with socio-demographic factors

Table 6 Association of immunization coverage with socio-demographic factors The gender of the child does not show significantly affects the immunization status of the child.

There was significant association between immunization status and tribal category of the children, socio-economic status, those children born in hospital, order of birth, place of delivery and availability of vaccination card.

Table 6 Association of immunization coverage with sociodemographic factors

Sociodemographic factors		Un immunized N=16	Fully immunized N=248	P value
Gender	Male	6	130	0.184
	Female	10	118	
Category	Paniyar	14	108	0.001
	Others	2	140	
Socioeconomic status	Low	10	223	0.006
	High	6	25	
Place of delivery	Home	9	56	0.008
	Govt. hospital	7	175	
	Private hospital	0	17	
Birth order	First	6	168	0.016
	Second / >2	10	80	
Availability of immunization card	No	16	101	0.008
	Yes	0	248	

DISCUSSION

In the present study, the percentage of fully immunized children (67.4%). Khargekar *et al*., in their study in a tribal area of Thane district Maharashtra have observed that the proportion of fully, partially and non-immunized were 71.1%, 17.8% and 11.1%.[1] Kumar *et al*., in their study in slums of Mangaluru have observed that proportion of fully and partially immunized were 58.7% and 41.3% [2]**.** The possible reasons for the difference could be the differences in the sociocultural and demographic characteristics of the study subject.

There was significant association between tribal category and immunization status of the children. The children belonging to the Paniyar group have a lower coverage of vaccination as compared with the other groups including muthan, karimpalan, kurichiar and kattunaiakan.

As observed, gender of the child notnsignificantly affect the immunization status of the child. In another study at Delhi by Kar *et al*.[3] which reported that the sex of the child did not affect significantly the immunization of the child.

In the present study, immunization cards were available with 56.7% of the mothers' of children, 32.4% kept the immunization card at the Anganwadi. Coverage was better in case of children who had their immunization cards available. This shows that mothers probably were well motivated and have understood the importance of maintaining such records with them for follow-up. Similar results were shown in the studies conducted by Tapare *et al*.[4] and Kadri *et al* [5] , in which 81.25% and 88.4% of the mothers possessed the immunization card with them, respectively.

According to the respondents, the most common reasons for not immunizing the child was: fear of side effects(62.5%) unable to attend the vaccination site(25%). The common reasons for partially immunizing the child were due to visit to native place (34.3%) followed by time of immunization inconvenient (28.5%). A study conducted at Lucknow by Nath *et al*.[6] showed visit to the native place/village (14.7%), carelessness (11.7%), apprehensiveness due to sickness of the child or an elder sibling as a result of vaccination (11.7%), and lack of knowledge (10.4%). Kar *et al*. [3] also revealed that the major cause for incomplete immunization was postponement of vaccination due to illness of the child (30.8%), lack of knowledge of immunization schedule (23.1%), and migration to native village (23.1%).

It was found that those children born in hospital (75.3%)had a higher immunization coverage rates than those delivered at home. Similarly the study conducted at urban slums of Lucknow by Nath *et al* [6] found that children born at home were found to be less likely to receive any vaccination.

CONCLUSION

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

Recommendation

Regular health education sessions and motivation through an encouraging and persuasive interpersonal approach, regular reminders and removal of misconceptions prevailing among people and improving the quality of the services at the health facility will solve the problems of nonimmunization.

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