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Immunization Status of 1 to 5 Year Children of A Rural Population in Rajasthan, India.

KEYWORDS: immunization, vaccines, cluster sampling

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ABSTRACT *Immunization is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations. This study attempts to assess the immunization status of children residing in rural area of Rajasthan. A community based cross-sectional descriptive study was carried out to in field practice area of RHTC Naila, attached to SMS Medical College, Jaipur. Thirty cluster sampling technique was used to cover whole field practice area and total sample size taken was 330. Immunization status was recorded from the immunization card or 'Mamata card' of the child and if it was not found then history was taken about vaccination through the mother. Out of total 330 children, fully immunized were 248 (75.15%) who received one dose of BCG, one dose of Measles, 3 doses of OPV and 3 doses of DPT vaccines up to 1 year of age.*

Introduction: Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines stimulate the body's own immune system to protect the person against subsequent infection or disease.[1]Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year.[1] It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations. It has clearly defined target groups; it can be delivered effectively through outreach activities; and vaccination does not require any major lifestyle change. According to the National Family Health survey (NFHS-3) 2005-06 of India, Children who received BCG, measles, and three doses each of DPT and polio (excluding Polio 0) are considered to be fully immunized. Based on information obtained from a card or reported by the mother ('either source'), 44% of children of age 12-23 months were fully immunized and 5% have not received any immunization. Rest 51% children were partially immunized.[2] According to Annual Health Survey (2012-2013), 74.2% children in Rajasthan received full immunization against common childhood diseases: tuberculosis, polio, diphtheria, pertusis, tetanus and measles. In Rural population 72.6% children are fully immunized.[3] This study attempts to assess the immunization status of children residing in rural area of Rajasthan.

Methodology: A community based cross-sectional descriptive study was carried out to find out nutritional Status of children (1 to 5 year of age) residing in field practice area of RHTC Naila, attached to SMS Medical College, Jaipur. Thirty cluster sampling technique was use to cover whole field practice area. Data collection for this study was carried out from on 01.08.12 to 28.02.13.

Calculation of sample size: Sample size was calculated 328 subjects at allowable error of 20% at 95% confidence interval and design effect of two, assuming 38.38 % of children (1-5 years)2 having low weight for age.(i.e. **P=38.38%).**

Sample size4 = 4PQ/L2, hereQ = 100 - P = 61.6%,L =

Error (20% of P) = 7.6%

Therefore, 4*38.38*61.6/7.6*7.6 = 164 but Design effect4=

2 so SS= 164 * DE = 164*2 = 328

So for the study purpose, from each of 30 cluster 11 children of 1-5 years were identified for survey i.e. from 30 clusters total 330 of children 1-5 years ((child whose 1st birthday has gone and child whose 5th birthday is awaited) having normal term, normal delivery and normal birth weight and parents are willing to participate in the study were surveyed. Whole field practice area of RHTC was divided into 30 for equal representation of whole area. So from each of these 30 clusters, 11 children in the age group of 1-5 years were selected to have children ≥ sample size. These selected children along with their mothers were examined and mothers were interviewed as per a predesigned, pretested, semi-structured interview schedule. Data thus collected was entered into Microsoft excel 2010 worksheet in the form of master chart. Then data were classified and analysed as per the aims and objectives. Immunization status was recorded from the immunization card or 'Mamata card' of the child and if it was not found then history was taken about vaccination through the mother. Child was considered as 'Fully immunized' if he or she had taken 1 dose of BCG, 1 dose of Measles, 3 doses of Oral polio vaccine (OPV) and 3 doses of combined Diphtheria, Pertusis and Tetanus (DPT) vaccine up to one year of age. Child was considered as 'Partially immunized' if he or she missed one or more vaccine dose from the above mentioned vaccines and child was considered as 'Unimmunized' if he or she had not taken any vaccine.

Results: Out of total 330 children, fully immunized were 248 (75.15%) who received one dose of BCG, one dose of Measles, 3 doses of OPV and 3 doses of DPT vaccines up to 1 year of age. Any child who has missed any one of the doses was considered as partially immunized. Further it was observed that 22 (6.67%) were unimmunized children who have not received any type of vaccination.

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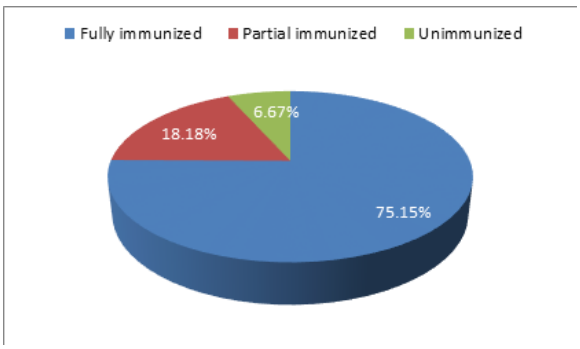
Table No.1 Distribution of Children according to immunization status

S. No.	Immunization status	No. of children	
		No.	%
1	Fully immunized	248	75.15
2	Partial immunized	60	18.18
3	Unimmunized	22	6.67
Total		330	100



Discussion: In this study it was revealed that fully immunized children were 75.15%, partially immunized were 18.18% and unimmunized were 6.67%. These findings are well comparable with the observations of other surveys like Annual Health Survey (2012-13), K Lalitha et al (2008), Vikas Bhatia et al (2004), Lilian Chepkemoi Maina et al (2013). According to Annual Health Survey (2012-2013), 74.2% children in Rajasthan received full immunization.[3] According to K Lalitha et al (2008) percentage of completely immunized, partially immunized and unimmunized children were 84.09%, 14.09% and 1.82%, respectively.[5] Vikas Bhatia et al (2004) recorded fully immunized children as 72.23%, partially immunized as 22.99% and unimmunized as 4.64%.[8] Lilian Chepkemoi Maina et al (2013) showed that complete immunization was seen in 76.6%.[10] These findings are different than the National Family Health survey (NFHS-3), Abhijit Vinayak Banerjee et at (2010), Sarah payne et al (2013), Singh PK (2013). According to the National Family Health survey (NFHS-3) 2005-06, 44% of children were fully immunized and 51% were partially immunized and 5% were immunization.[2] Abhijit Vinayak Banerjee et at (2010) found that the rates of full immunization was 39%.[4] Sarah Payne et al (2013) in their study observed52% full immunization. Singh PK (2013) study showed that full immunization coverage was 44%.[6]

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