

IMMUNIZATION STATUS OF CHILDREN 1-2 YEARS OF AGE AT A TERTIARY CARE HOSPITAL OF TANDO MUHAMMAD KHAN, SINDH PAKISTAN

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ABSTRACT

Objective: To assess the immunization status of children 1-2 years of age reporting at a tertiary care hospital in Pakistan.

Material & Methods: This observational study was conducted at an outpatient department of Indus Medical College and Hospital from September 2018 to February 2019. Immunization data of 800 children aged 1-2 years of age was obtained regarding nine EPI target diseases.

Results: Out of 800 children, 431 (53.9%) were immunized, 277 (34.6%) were partially immunized and 92 (11.5%) were not immunized.

Conclusion: The study statics conducted concludes that immunization indicators in Pakistan have not met the expected benchmarks and have poor up-to-date immunization coverage. Further studies at the gross level are needed to identify root causes to achieve set targets at the regional level.

Key Words: Immunization, Measles, Paediatrics, Polio, Vaccine.

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INTRODUCTION

Immunization can help in reducing untimely and unexpected illness and deaths, just like smallpox was eradicated previously. And now with all these policies being followed worldwide, just like in the case of smallpox, according to the World Health Organization, polio is close to eradication.¹⁻³

Immunization has greatly reduced morbidity, mortality, and disability. It is a vital contributor to the health of children.⁴ Despite the substantial efforts made by the Government of Pakistan and its collaborators, immunization goals are not achieved, Polio eradication and measles elimination for instance.⁵ An Expanded program on immunization (EPI) was started in 1978 with the initial aim to cover childhood tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis, and measles. Later on, several new vaccines were

introduced in 2002, 2009, 2012, and 2015 for Hepatitis B, Haemophilus Influenza type b (Hib), pneumococcal vaccine (PCV-10), and inactivated polio vaccine (IPV) respectively. Immunizing children with these vaccines may avert 17% of childhood mortality in Pakistan contributing to achieving the Sustainable Developmental Goal (SDG-3), i.e. reducing childhood mortality and morbidity.⁵⁻⁷

In Pakistan, 15% of deaths (94/1000 live births) under five years contribute to 50% of the overall mortality, as compared to 8-10% of those in the developed world.[3] Globally, around 27% of deaths of children under five years of age occur due to vaccine-preventable diseases, this can have an additional 1000 if immunization programs are discontinued.^{5,8}

Routine reporting estimates the coverage of fully immunized children for all nine vaccine-

preventable diseases as 80% with 53.8% overall coverage reported in Pakistan demographic and health survey 2012-13. Although there is a considerable variation (56%-88%) in the overall vaccine coverage, as well as that of different provinces i.e. 65% in Punjab, 29.1% in Sindh, 52.7% in KP, and 16.4% in Balochistan.^{8,9} EPI coverage also varies with antigens with the highest coverage for DPT (diphtheria, pertussis, and tetanus), Bacillus Calmette–Guérin (BCG), and Hepatitis B and the lowest for polio.^{5,10}

Current research study was to evaluate age-appropriate coverage of different EPI vaccines for children between 1-2 years of age. This effort will enable and provide data to healthcare providers to ensure and improve immunization coverage in the study-populated area. Furthermore, it will provide an opportunity to give missing doses to partially and unimmunized children.

MATERIAL AND METHODS

We conducted this six-month cross-sectional study at Indus Medical College, and hospital, Tando Muhammad Khan. All babies aged 1-2 years were included in the study. Mothers were interviewed for vaccine shots and (wherever possible) vaccination cards were checked for age-appropriate vaccine shots. Where vaccine cards were not available, detailed history was taken from the mother for immunization shots. All children were checked for BCG scars and absence, or presence was recorded. Vaccination data for all nine EPI target diseases was collected

on proforma. Cases were divided into three groups i.e., completely immunized, partially immunized, and unimmunized. At the end of the study, data were analyzed using SPSS-Version 23. Frequencies and percentages were calculated for immunization status. Children whose mothers were not sure of immunization were excluded from the study.

RESULTS

We enrolled 800 children for our study. Males were 465 (58%) and females were 335 (42%). There were 325 (40.62%) who had vaccination cards while 475 (59.37%) did not have vaccination cards available. In our study, 431 (53.9%) were completely immunized, 277 (34.6%) were partially immunized, and 92 (11.5%) children were not immunized. When analyzed separately for the individual vaccine, 711 (88.87%) children received oral polio vaccine (OPV) drops with different doses. (**Table 1**)

Out of 800 children, 631 (78.87%) received the BCG vaccine while BCG scar was seen in only 500 (62.5%) children and 169 (21.12%) children did not receive BCG at birth. Regarding the Pentavalent and pneumococcal vaccine, dose frequency varied. (**Table 2**)

The measles vaccine given was reported in 582 (72.75%) children out of 800 cases while 218 (27.25%) children did not receive even a single dose of the measles vaccine. Measles-I was reported in 582 (72.75%) cases while only 350 (43.75%) received the measles-II vaccine.

Table 1: Distribution of polio vaccine doses in study groups

Number of doses	n (%)
Three doses or more	518 (64.75%)
Two doses	71 (8.87%)
Single dose	122 (15.25%)
No dose	89 (11.18%)
Inactivated polio vaccine	544 (68%)

Table 2: Distribution of pentavalent and pneumococcal vaccine doses in study groups

Number of doses	n (%)
Three doses	544 (68%)
Two doses	44 (5.5%)
Single dose	88 (11%)
No dose	124 (15.5%)

DISCUSSION

An EPI was launched in Pakistan in 1976 and expanded throughout the country. Multiple studies have been conducted assessing immunization coverage at various ages throughout the globe, especially in Pakistan whose results are more or less comparable with this study.¹¹⁻¹⁶

Different surveys conducted during 1995-2007 reported immunization coverage ranging between 47-57% for fully immunized children. However, contradictory to these statistics, in Pakistan Social and Living Standards Measurement Survey which was conducted during 2004-2005, achievements in immunization coverage were higher. In this survey, children aged 1-2 years of age were assessed for immunization coverage and the results are comparable with ours. In their survey 57.1% of children were fully immunized, 33.6% were partially immunized, and 9.3% were unimmunized.^{17,18}

When compared to the study conducted by Usman et al. assessing reasons for incomplete immunization in children, our study results are disappointing. This study reported higher immunization coverage for fully immunized children (70.6%) as compared to our study (53.9%). 4.4% of children were partially immunized while in our study 34.6% were partially immunized. 20.7% of children were unimmunized while 11.5% of children in our study were not immunized.¹⁹ Another study conducted at a tertiary care hospital assessing immunization status showed that 57.1% were fully immunized, 33.6% were partially immunized and 9.3% were unimmunized.²⁰

A study conducted by Ikram et al. determined immunization coverage as per the EPI showing that 63% were fully immunized. In the same study, for individual vaccine coverage, BCG, three doses of OPV and Pentavalent, and two doses of measles coverage were 82.4%, 77.4, and 67.3% respectively while in our study we found, 78.87%, 63%, and 43.75% coverage for BCG, three doses of Pentavalent and two doses of measles coverage that were lower than the corresponding study.²¹

CONCLUSION

The study statistics conducted reveals that immunization indicators in Pakistan are not achieved and have poor up-to-date immunization coverage. Further studies at the gross level are needed to identify root causes to achieve set targets at the regional level.

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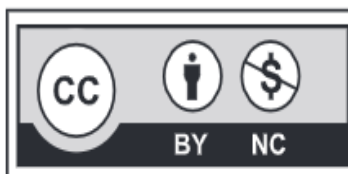
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