

CHILDHOOD IMMUNIZATION AMONG INTERNALLY DISPLACED PERSONS (IDPS) OF UNDER FIVE-YEARS FROM NORTH WAZIRISTAN AGENCY, PAKISTAN: A CROSS SECTIONAL STUDY.

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Abstract

Background: Immunization is an important and cost effective public health tool for controlling Vaccine Preventable Diseases (VPDs) among children. Developing countries have low level of immunization coverages. This is further compromised during armed conflicts and disasters with displacement of vulnerable populations leading to VPDs outbreaks. Tribal areas of Pakistan have been subjected to armed conflict for a long time with massive population displacement.

Methods: We conducted a cross sectional survey to assess the vaccination status of child under five of the Internally Displaced Persons (IDPs) of North Waziristan Agency (NWA) of Pakistan. We used a structured questionnaire to collect information from the caregivers in the IDP camp of Bannu, Khyber Pakhtunkhwa.

Results: Overall immunization coverage was very low. Out of 480 children under 5 years, less than one-third (30.6%) were vaccinated against BCG, about a quarter (27.7%) had received the Pentavalent and measles vaccines. However, OPV coverage was excellent mostly amid to polio mass campaigns.

Conclusion: Routine immunization coverage among the IDPs of North Waziristan agency in Pakistan is extremely poor. There is a need to improve the coverage to optimum level to avert any potential VPD outbreaks.

Key words: Vaccination, fully immunized child, disasters, developing countries

Introduction

Childhood Immunization is a preventive health behavior that is directed toward the child by parent. Vaccination can provide reduction in human grief and increase in life expectancy. Immunization is the most effective health investment as it is considered as major backer in Public health world. Health Organization (WHO) defines Immunization as 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. This has further been explored, in the past, in understanding preventive measures against diseases through robust vaccination programs. Immunization describes the whole process of delivery of a vaccine and the immunity it generates in an individual and population. Immunization is an important and cost effective public health tool for disease control. It reduces both morbidity and mortality among children due to vaccine preventable diseases. Pakistan initiated its Expanding Programme on Immunization (EPI) during 1978 with support of World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). Since then, it is vaccinating children under 2 years of age against six and now nine EPI diseases. It also provides mass

campaigns against Polio, Measles and Tetanus (pregnant mothers) to cover the immunity gap left over by sub-optimally performing Routine Immunization (RI). The nine disease being catered for are: BCG, OPV, diphtheria, tetanus, pertussis, and measles, hepatitis B and Haemophilus influenza type b (Hib), and it plans to introduce some more new and underused vaccines in the RI.

A child requires at least nine months to receive immunizations for the six vaccine-preventable diseases (namely, tuberculosis, diphtheria, whooping cough, tetanus, polio, and measles). BCG (for tuberculosis) should be given at birth or at first clinical contact, DPT (for diphtheria, whooping cough and tetanus) and Polio require three dosages at approximately four, eight and twelve weeks of age, and measles should be given at or soon after reaching nine months of age.— The Demographic and Health Surveys (DHS) which are conducted in many countries collect information on the immunizations received by all the children (of the households covered in the surveys) born in the five years preceding the surveys. In the case where a child has received DPT3 and Measles 1 vaccine along with the OPV3, the child is considered to be a Fully Immunized Child (FIC) —. However, considering the presumption that immunization coverage could be very

low, we took under-five population for a better sampling frame.

Methodology

We conducted this cross sectional survey in the IDP camps of district Bannu Khyber Pakhtunkhwa, Pakistan. The Internal Review Board (IRB) of the Health Services Academy, Islamabad, granted ethical approval. Sample size was calculated based on the 54% immunization coverage of Pakistan at an absolute precision equal to 0.05 and an estimated population size of 50,000. We calculated a sample size of 436, which was increased by 10% to cover any refusals to bring it at 480. Thus, we identified 480 children under five years, and informed consent was obtained from their caregivers who responded to a structured questionnaire on immunization status. Mainly, the vaccination status was recorded for card retention and recall. BCG mark was also identified to document BCG vaccination at birth.

Results

Socio demographic Characteristics:

Table 1 shows that most of the respondents were females, were housewives, being of mean age of 38 years and majority of them were illiterate.

Table 1. Socio demographic Characteristics of the Participants

Socio-demographic Characteristics of study respondents (n=480)		
Characteristics	Frequency	Percentage
Age		
0-5 years	406	84.6
Above 65 years	74	15.4
Sex		
Male	16	3.3
Female	464	96.7
Education		
Illiterate	444	92.5
Primary	32	6.7
Middle	4	0.8
Profession		
Housewives	469	97.7
Government	9	1.9
Private	2	0.4

The results shown below had source of data from card (2.4%) and rest by recall depicting very poor vaccination card retention. Table 2 details the percentage of children immunized against VPDs, which was quite low. Less than one third of the sampled children were found to be

vaccinated against BCG. Out of those vaccinated most could be identified from scar. Most of the children received OPV at the time of birth. As it is clear from the above table that only one-fourth of the under-five children (27.7%) were immunized against pentavalent and measles.

Table 2: Status of immunization under 5 years of age

Status of immunization of children under 5 years (n=480)		
Antigens	Frequency	Percentage
BCG	147	30.6
OPV at the time of birth	314	65.4
OPV 1	332	69.2
OPV 2	341	71.0
OPV 3	348	72.5
Pentavalent 1	133	27.7
Pentavalent 2	125	26.0
Pentavalent 3	125	26.0
Measles 1	133	27.7
Measles 2	126	26.3

Discussion

The country's overall coverage is less than 80%. The administrative coverage data from the NWA has been reported around 47% to 52%. Our study finds that the status of immunization in children under five years is very low in the NW agency (Table 2). These results are in compliment with a past local hospital based study. Other displaced populations from conflict zones suffer from the similar lower rates as compared to national figures.

Bacillus Calmette-Guérin (BCG) is given at birth. For the country, it remains around and well-above 80% regardless of failure to immunize against other VPDs. We found this around 31%, which is much lower than rest of the country. Immigrants and displaced populations in other countries suffered the similar lower levels of BCG vaccination status.

Pakistan is one of those last countries, which are struggling to get rid of polio. Regardless of the campaigns conducted by a separate polio eradication initiative, the routine coverage of polio at birth and subsequent booster administration remains below optimum. This is also evident from our study results. The polio vaccination coverage is severely compromised during conflicts and resulting mass displacements. Even the most robust systems of immunization do break down. The example of Syrian crisis is the one.

Vaccination coverage in Syria is estimated to have dropped from 91% in 2010 to as low as 45% in some regions by 2013, indicating rapid collapse of immunization systems in conditions of war. Out of the 1.8 million Syrian children born since the conflict, over 50% are unvaccinated. Consequently, 36 cases of poliomyelitis were officially reported after 15 years of polio eradication. Nonetheless, already struggling health systems suffer much more as we present in our study results .

The coverage against Pentavalent vaccine was also poor (26%). Other studies from African countries experiencing conflict has similar coverage results . Pentavalent covers against five VPDs i.e Diphtheria, Pertussis, Tetanus, Hep B and Hib. Pakistan has it in its EPI programme since 2008. There has never been enough coverage to cross overall 90% mark to achieve full immunization of pentavalent rendering children vulnerable to outbreaks of diphtheria or meningitis.

We found measles coverage very poor. Both the first and the second doses just covered around a quarter of the target population. Such conditions amid any outbreak of the disease when measles remain a highly contagious disease. These conditions usually worsen during complex humanitarian situations . In 2004, concurrent measles outbreaks occurred in four camps hosting 2767 Liberian refugees in Côte d'Ivoire. From 19 January to 23 February 2004 (weeks 8-13), measles IgM testing depicted 61.1% being positive. The highest incidence rate (18.5%) of measles was observed in children aged <9 months . Lower vaccination coverage among displaced populations increase the risk of measles outbreaks, and the mortality in such conditions is usually quite high .

Conclusion

Overall vaccination coverage among the Internally Displaced Persons (children under five) is very low. Risk of disease outbreak remains very high until mass vaccination is conducted among the IDPs' camps, and efforts are made to improve coverage in the conflict zones and host populations.

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