



CHILDHOOD IMMUNIZATION COVERAGE AT A TERTIARY CARE HOSPITAL LEVEL IN DISTRICT LUCKNOW : A CROSS-SECTIONAL STUDY

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ABSTRACT

Introduction: Vaccination is proven to be one of the most cost-effective child survival interventions. This retrospective study was conducted to assess the extent of immunization coverage among children in a tertiary care hospital in District Lucknow.

Material and Methods: A cross-sectional retrospective study was conducted at Department of Pediatrics at Integral Institute of Medical Sciences & Hospital, Lucknow to assess the extent of immunization coverage of children aged 12-23 months registered between 1st Jan 2019-15th January 2020. The statistical analysis has been done using the Microsoft excel. Data were presented in number and percentages.

Results: Among the children registered, 1255 infants received BCG, 1077 infants received OPV 0 dose and 623 infants were administered Hepatitis B at birth. Overall 582 infants had received three doses of OPV and 600 infants were given two doses of IPV. A total of 964 infants were registered for having measles vaccination. The administration of DPT booster first and second dose was reported among 427 and 38 infants respectively. A total of 227 infants were given only one PCV dose while 192 infants had received three doses of PCV. Overall 514 infants were administered two doses of JE vaccine and 214 infants were administered all doses of rotavirus vaccine. Overall 582 infants were found to be fully immunized.

Conclusion: IEC is the key to ensure 100% vaccination coverage. Ignorance and false beliefs, such as rumours about adverse events or vaccines causing sterilization should be removed from the community by the community workers and health care providers.

KEYWORDS : Vaccines, Childhood, Coverage

Introduction

Vaccination is proven to be one of the most cost-effective child survival interventions.(1) All countries have an immunization programme to deliver selected vaccines to the targeted beneficiaries, specially focusing on pregnant women, infants and children, who are at a high risk of diseases preventable by vaccines. There are at least 27 causative agents against which vaccines are available and many more agents are targeted for development of vaccines.(1,2)

India's immunisation programme is the largest in the world, with annual cohorts of around 26.7 million infants and 30 million pregnant women.(3) Despite steady progress, routine childhood vaccination coverage has been slow to rise. An estimated 38% of children failed to receive all basic vaccines in the first year of life in 2016.(4-6) The factors limiting vaccination coverage include large mobile and isolated populations that are difficult to reach, and low demand from underinformed and misinformed populations who fear side effects and are influenced by anti-vaccination messages.(5-7) With this background a retrospective study was conducted at Department of Pediatrics, Integral Institute of Medical Sciences & Hospital, Lucknow to assess the extent of immunization coverage of children.

Material and Methods:

A cross-sectional retrospective study was conducted at Integral Institute of Medical Sciences & Hospital, Lucknow after taking permission from the institutional ethical committee to assess the extent of immunization coverage of children aged 12-23 months registered between 1st Jan 2019-15th January 2020. The relevant information was obtained from the immunization registers and was recorded for each child. All the registered children were further classified as fully and partially immunized. Any infant who had received BCG, three doses of DPT, three doses of OPV and Measles before one year of age was classified as "fully immunized" and any infant who had missed any dose of the above mentioned vaccines was classified as "partially immunized".

All the data obtained was compiled and tabulated. The statistical analysis has been done using the Microsoft excel. Data were presented

in number and percentages.

RESULTS:

Table 1: Gender wise distribution of registered infants as per Immunization status

Name of vaccine	Male	Female	Total
BCG	595	660	1255
OPV (doses)			
0	548	529	1077
1	321	244	565
2	265	226	491
3	313	269	582
Pentavalent			
1	304	250	554
2	293	234	527
3	317	464	781
Hepatitis B at Birth	313	310	623
IPV (doses)			
1	296	263	559
2	282	315	597
Measles (1 & 2)	547	417	964
DPT Booster 1st	229	198	427
OPV Booster	251	210	461
JE (1 & 2)	348	166	514
PCV (doses)			
1	129	98	227
2	146	121	267
3	93	99	192
Rotavirus vaccine (doses)			
1	107	88	195
2	80	74	154
3	119	95	214
DPT Booster (2nd)	21	17	38

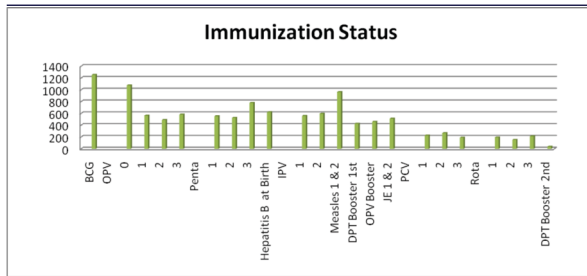


Figure 1: Graphical distribution of total infants as per Immunization status

Table 1 illustrates that the gender wise distribution of registered infants as per immunization status. Overall 1255 infants were administered BCG vaccination at birth, and approximately the ratio of male: female children receiving BCG vaccine was 1:1. A total of 1077 infants received OPV 0 dose at birth and 582 infants (313 males and 269 females) received complete three OPV doses. Hepatitis B at birth was administered to 623 infants i.e. 313 males and 310 females. Six hundred infants were administered two doses of IPV. Overall 964 infants were registered for having measles vaccination in which approximately ratio of male and female infants was 4:3. DPT first booster and second dose was administered to 427 infants and 38 infants respectively. A total of 227 infants received only one dose of PCV while 192 infants received complete three doses. Five hundred fourteen infants were registered for having both doses of JE vaccination in which approximately ratio of male and female infants was 2:1. All doses of rotavirus vaccine were administered to 214 infants (119 were males and 95 females). Overall 582 infants (46.3%) were found to be fully immunized.

Discussion:

In India, this Universal Immunization Program (UIP) is the largest in the world with annual cohorts of around 26.7 million infants and 30 million pregnant women.(8) The National Family Health Survey-4 (NFHS-4) 2015--2016 reports 62% of children aged 12--23 months were completely immunized in India (BCG, 3 doses of DPT, OPV, and one dose of measles each). (9) As per this national survey, 61.3% and 63.9% children of 12--23 months age have been fully immunized in rural areas and urban areas of India, respectively. Puducherry has the highest (91.3%) and Nagaland has the lowest (35.7%) percentage in terms of immunization coverage while immunization coverage for Uttar Pradesh, Bihar, and Jharkhand were 51.1%, 61.7%, and 61.9%, respectively which is higher to the finding (46.3%) in this study. This study revealed that coverage for BCG was approximately 100% among the registered infants followed by OPV and Measles. Similar findings were reported by Yadav S et al (2006)(10) in urban slums of Jamnagar city. They reported 94.7% coverage for BCG followed by OPV-3 (84.7%), DPT-3 (81.4%) and Measles (75.7%). Lal S et al (2001)(11) reported that coverage for BCG, DPT-3, OPV-3 and Measles was 99.6%, 97.8%, 97.8% and 97.2% respectively. Our findings are also in agreement with the observations made by Odusanya et al (2008)(12). As it is envisaged under National Population Policy, 2000 to achieve universal immunization of children against all vaccine preventable diseases, the overall coverage of most of vaccines was found impressive in the present study. However DPT second booster and PCV showed low coverage in this study. This can be attributed to the fact that in the field practice areas of this tertiary care institution a lot of emphasis is laid on effective implementation of the immunization programme by the health care workers. Further focus is required to ensure a better coverage of the second DPT Booster and PCV doses. Although appreciable coverage levels were observed for BCG, OPV (3 doses) and DPT (3 doses), the number of fully immunized infants was found to be low because of lower coverage levels for Measles vaccination. This could be explained by a gap of 6 months between DPT-3 and Measles, wherein parents of infants eligible for immunization lose contact with the health staff due to negligence on the part of parents. These findings stresses the need of regularity of outreach sessions and team work at all levels for continual sensitization of parents regarding importance of timely and complete vaccination of their children. Almost similar observations were reported by Yadav et al (10), Khokhar et al (13), Gupta et al (14) and Yadav et al (15). The process monitoring data of Intensified Mission Indradhanush showed that many eligible children on due lists were not brought to vaccination sessions and the key reasons for not attending were lack of awareness and concerns about the adverse effects of

vaccines. (16) WHO Immunization Agenda 2030 envisions a world where everyone, everywhere, at every age, fully benefits from vaccines to improve health and well-being. Immunization is playing a critical role in achieving the Sustainable Development Goal 3 (SDG 3) to ensure healthy lives and promote well-being for all at all ages. Ignorance and false beliefs, such as rumors about adverse events or vaccines causing sterilization should be removed from the community by health care providers. IEC activities should be strengthened to achieve WHO Immunization agenda 2030 and SDG 3.

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