

Reason analysis of partially immunized & unimmunized children aged between 0-23 in urban area of Raipur district, Chhattisgarh, India

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Abstract-

Routine immunization is one of the most cost effective interventions to decrease morbidity and mortality among children. There are major immunization coverage variations among urban & rural areas, literacy & illiteracy & various socioeconomic factors. The main purpose of this study is to analyse the underlying reason behind partial or incomplete immunization of children aged 0-23 months in urban areas of Raipur district, Chhattisgarh. A population-based survey was conducted in the urban areas of 5 planning units of Raipur district from June 2016- March 2017 to assess immunization status of 300 randomly selected children. Children were assessed for immunization status through immunization card or interview of mothers or reliable source available on recall basis. Also session based audit done for randomly selected 6 ANM areas from each planning units.

Introduction:

WHO Expanded Program of Immunization (EPI) The program started globally in 1974 and was initiated in India in 1978, renamed as the Universal Immunization program (UIP) in 1985. UIP was launched to improve coverage of immunization in children and monitoring of immunization activity. As a population-based public health service, immunization is important in analysing the overall functioning of the public health care system. Child immunization coverage is a good indicator of the accessibility and utilization of health care services. More-over, differential achievements between states, rural / urban areas and socio-economic groups give important information about whether health sector policies have worked and where sustained efforts are still needed.

Chhattisgarh state in India is a success story where sustained efforts have led to improved immunization. Full immunization coverage (FIC) has improved from 56.9% in DLHS- II in 2002-04, to 74.9 % in the AHS 2012-13 (Fig 1.) Though the state has made considerable progress, the Southern & northern division of Chhattisgarh which is mainly tribal & LWE affected areas are having poor fully immunization coverage as compared to the state coverage. Also there is issue in the urban areas of big cities of Chhattisgarh like Raipur, Durg, Bilaspur, Korba, Koriya, Jagdalpur. So the Government of Chhattisgarh has started Mukhya Mantri Shahri Swasthya Karyakaram (MSSK) to cover the urban slum areas of Chhattisgarh for Routine Immunization services.

According to AHS 2012-13 factsheet, Raipur district is having fully immunized were 80.3%. Antigen-wise immunization coverage was highest for Bacillus Calmette-Guerin (BCG) (96.6%) and lowest for DPT (85.4%), which indicates high instances of drop-out. Minor AEFI after vaccination, lack of information about the scheduled date of immunization, lack of due list in immunization session leading to absence of social mobilization, frequent displacement of the family and lack of knowledge regarding the benefits of immunization are cited as the main factors behind coverage of immunization. The study will show the reason for partial or unimmunization so that district officials can revise their strategy for urban areas of Raipur district. District and sub-district officials should reduce instances of early and late dropouts and, in turn, improve complete immunization coverage. Community participation, inter-sectoral co-ordination and local decision making along with supportive supervision would be critical in addressing issues of drop-outs, supply logistics and community

This study was done to assess the factors influencing RI coverage & reason analysis of partial/incomplete immunization for vaccination and possible ways to improve immunization coverage at urban areas of Raipur District.

Objective of the study

1. To identify the leading cause of incomplete /partially immunization of the children in the urban areas of Raipur district.
2. Assessment of quality of immunization services provided at the session sites, through interview of ANMs over 4 indicators (1) Session happened (2) Due list availability at session site with ANMs (3) Vaccine availability at session site (4) Supervisor visit at the session site

Rationale & Background-

- World Health Organization's Expanded Program of Immunization (EPI) The program started globally in 1974 and was initiated in India in 1978 renamed as the Universal Immunization program (UIP) in 1985.
- The Global Vaccine Action Plan (GVAP) is developed for preventing death by development and access to vaccines. It aims to achieve vaccination coverage of $\geq 90\%$ nationally and $\geq 80\%$ in every district by 2020.
- In India Immunization services are provided by Government by Central/state/district/block and village levels institutions as District Hospitals, CHC ,PHC ,HSC in all districts but in some districts it is low & in some districts it is high in coverage even after being in same state & almost same number of blocks.
- Still when seen data of AHS,DLHS & RSC for **Chhattisgarh** there is very slow progress towards achieving target of full immunization(**FI -67.2% as per Rapid Survey on Children 2013-14**)
- According to HMIS data, the full immunization coverage of Raipur district in 2015-16 was 97% but in quantitative terms the figure of the drop-outs are nearly 12771.
- The reason analysis for not vaccinating timely will enable us to identify the gaps in the program. If we are able to know the specific reason for incomplete immunized children, we can work in the specific direction to improve the immunization service to achieve $> 90\%$

Materials and Methods:

Study setting : A cross sectional descriptive study is planned & will collect the data from urban areas of 5 planning units of Raipur district (Abhanpur, Arang, Dharsiwa, Tilda & Raipur urban) from June 2016 to March 2017 using a close ended structured standard GoI immunization session monitoring format & House to house survey format questionnaire for assessing randomly selected 300 children (60 children from each planning units). We have done random selection of children in each lot/village/zones, 10 households with child age 0-23 months selected from each planning units using systematic random sampling procedure and from selected households all eligible mothers/care givers interviewed. Children categorized as per working definition's as follows

1. Completely immunized- who received BCG and 3 doses of DPT/PENTA/Hep-B, 1 dose of IPV (if eligible) & and 3 doses of OPV and 1 dose of Measles vaccine before 1 year & 1 booster dose of DPT & OPV along with 2nd dose of Measles.
2. Fully immunized - who received BCG and 3 doses of DPT/PENTA/Hep-B, 1 dose of IPV (if eligible) & and 3 doses of OPV and 1 dose of Measles vaccine
3. Partially immunized – who has missed any one or more but not all dosages of UIP,
4. Not immunized /un-immunized –who has not received any vaccines in UIP

Sample Size: 300 children aged between 0-23 months. 60 children from each planning units.

Sample selection: 6 lots, each having 10 children are selected through random selection of ANM areas. From the ANM areas, we got the list of children through their MCTS register. Again random sampling done to select 10 children from the ANM areas. Session based interview being done with 6 ANMs from each planning units about the four variable (1) Session held or not (2) Due list availability (3) All vaccine availability at session site (4) Supervisor visited at session sites

Data analysis: Collected data analyzed by using different statistical tools with confidence interval of 95%. We have used MS excel for analysis. Mean, Standard deviation (SD), p value and Z test and other statistical tools. Collected data are presented in the form of figures and tables.

Result-

Study findings revealed that out of 300 children aged between 0-23 months assessed, 66.66% of the children have received timely vaccination as per age, while 27.33% are incomplete or partial immunized (didn't get timely vaccination as per age) while 6 % completely unimmunized. The reasons for partial or incomplete immunizations are (1) Session not held 15% (2) Caregiver didn't know where to go for vaccination 14% (3) Unaware of missed doses 11% (4) Not aware of need of immunization 9% (5) No one contacted for immunization 9% (6) Experience minor illness, fever, pain , swelling 9% (7) Vaccine not available 8% (8) Sick child- Caregiver not opted for vaccination 6% (9) Child was away from home 4% (10) Family has no definite reason 3% (11) Session inconvenient for time/location/ long waiting time 2% (12) Unfriendly behaviour of vaccinator 2% (13) Sick child- vaccinator didn't opt for vaccination 2% (14) Caregiver didn't opt for multiple injections 2% (15) Fear of AEFI 2% (16) Resistant family 2%. It is also seen the the session site that 20% of the session were cancelled (Figure 4). ANM didn't have due list at 37.5% session site (Figure 5). 25% of session site were having any missing vaccine (Figure 6). Lastly 75% of the session site were not visited by any supervisor (Fig 7)

Discussion

For immunization coverage improvement, we must think retrospectively about the factors which contributing to partial or incomplete & unimmunized children. There are many factors, causing the unimmunization or incomplete/Partial immunization in any community leading to decrease in Fully Immunization coverage. As shown in result immunization session cancellation is the leading cause contributes to 15%. The district or block authorities must ensure about the no cancellation of immunization session in the community. 2nd cause is that care givers are not aware about the session sites place & timing of the sessions due to the complexity of urban areas contributes to 14%. All beneficiaries be recorded and proper follow-up done by the health worker about the timely vaccination. Due to the illiteracy & not giving the 4 key messages, care giver are not aware about any missing doses. 9% of care givers are not aware about any missing doses. Due to poor human resources in urban areas beneficiaries are not called to the session sites leading to 9% of unimmunized children. Minor illness leads to 9% of dropouts. Delivery of 4 key messages during the vaccination can minimize the fear of AEFI & minor illness as care givers will mentally prepared about these outcomes. Unavailability of vaccine at session sites leads to 8% contribution. District & block authorities must improve cold chain management system & avoid any stockouts. Also 2% contribution to each by Resistant family, Fear of AEFI, care giver not opted for multiple injection, unfriendly behavior of vaccinator. These can be managed by proper counselling to the care givers during and after the vaccination. Also during the session site monitoring it is found the 20% session were not happened or closed earlier then the recommended time. 37.5% ANMs didn't prepared due list which leads to the probability of mobilization of children to the session site. 25% of the sessions were having any of the vaccine not available leads to incomplete or partial immunization. Lack of supervision is also a leading cause of early closure or opening of session very late.

Recommendation:

1. Strong supportive supervision is must to ensure timely opening of session site /no cancellation of any immunization site.
2. Preparation & availability of due list with ANM as well as mobilizers to pre-inform the beneficiaries.
3. Availability of all vaccines/ logistics as per the due list requirement.
4. Provision of 4 key message to all care givers during vaccination to avoid any reluctance/ Fear of vaccine/ AEFI.

Conflict of interest – Not any

Source of Funding- Self

Ethical clearance – Taken written consent from the district authorities & verbal consent from the parents/caregivers.

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Evaluated Fully Immunized Coverage - Chhattisgarh

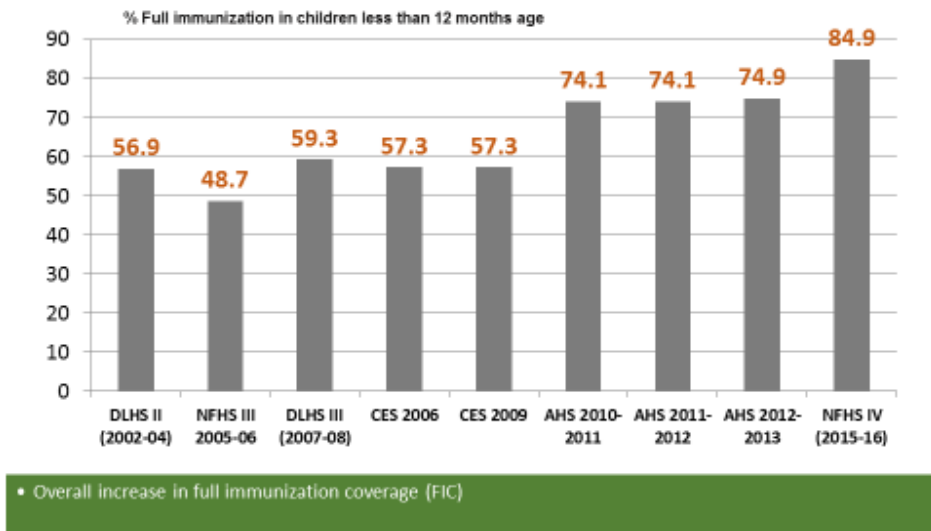


Figure 1. Evaluated Fully Immunization Coverage- Chhattisgarh

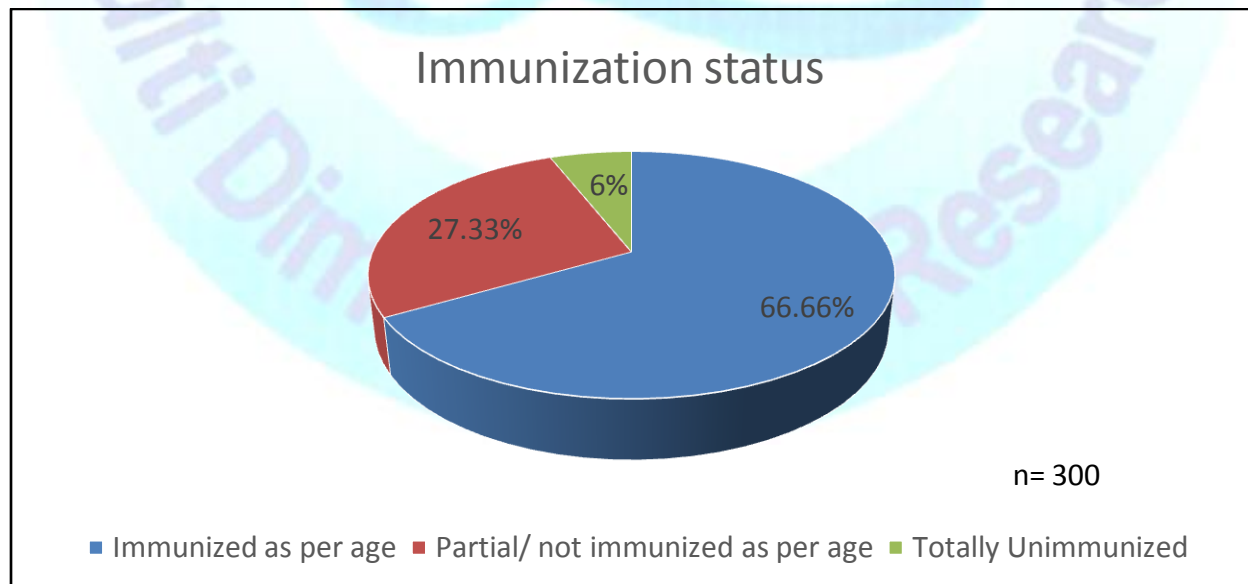


Figure 2. Observed Immunization Status as per the eligible age

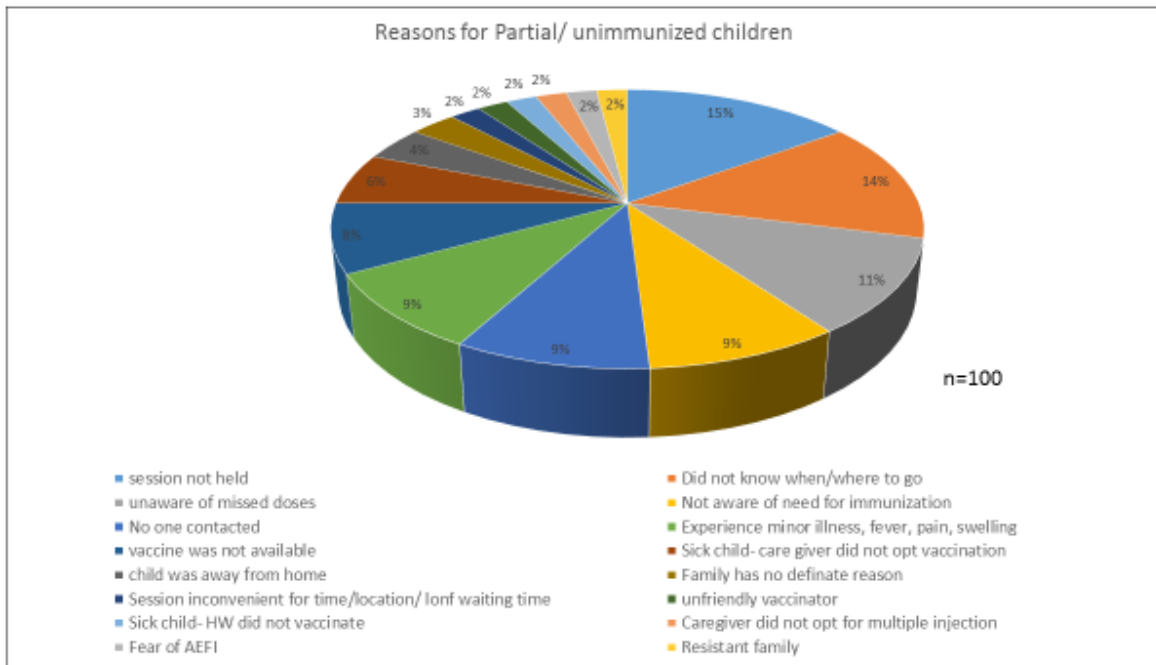


Figure 3. Reason for Partial/ unimmunization

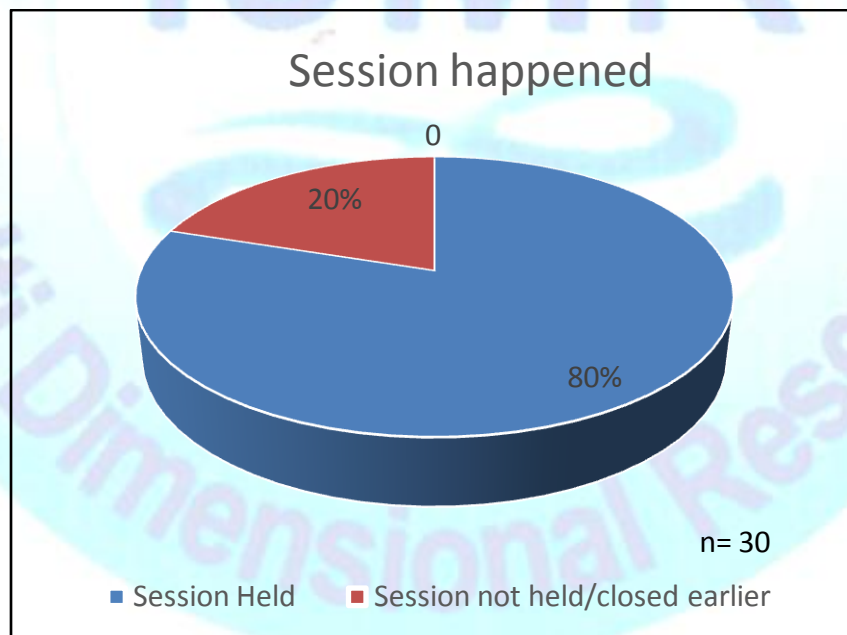


Figure 4. Session held

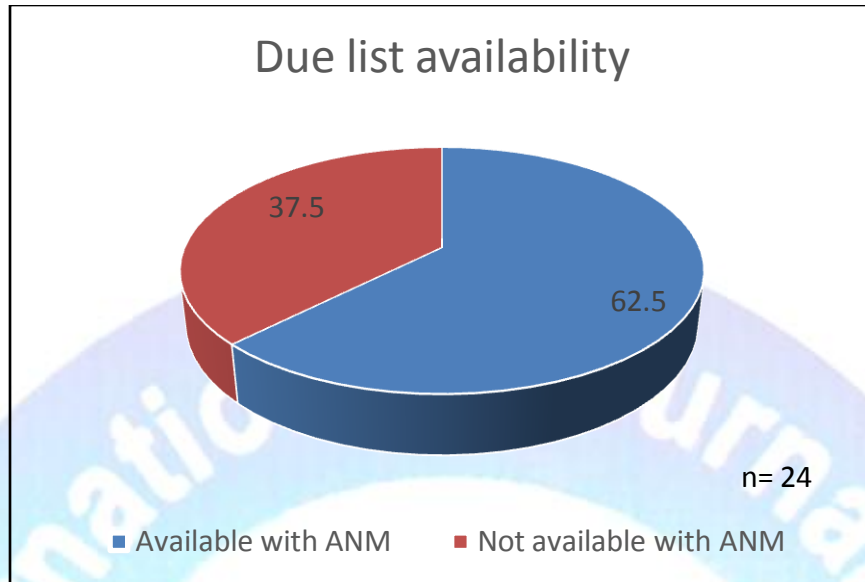


Figure 5. Due list availability

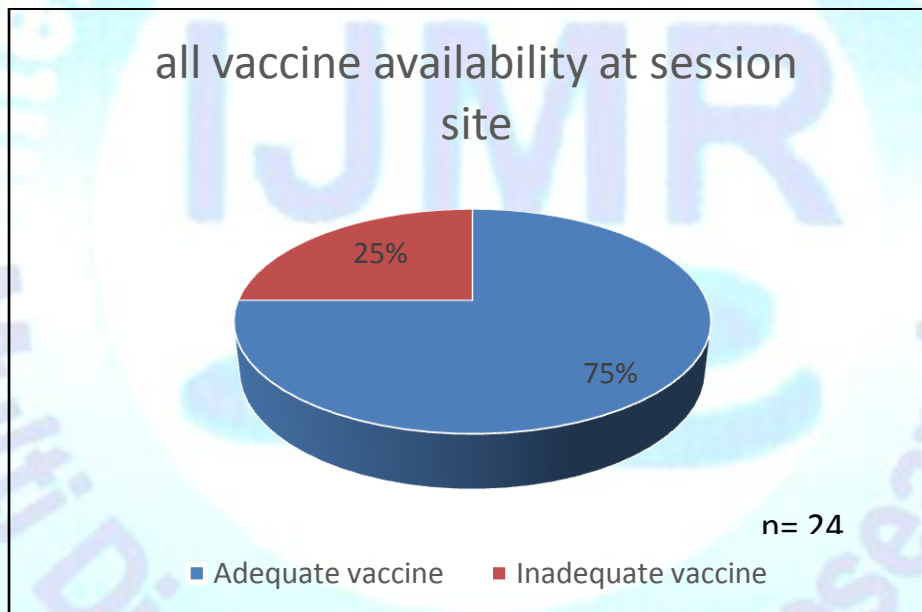


Figure 6. All vaccine availability at session site

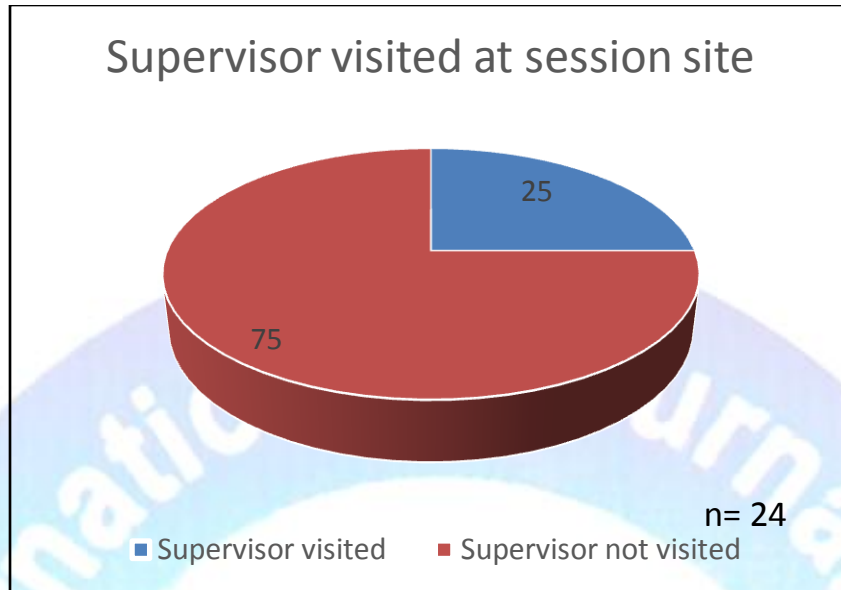


Figure 7. Any supervisor visited the session site on immunization day