Original Research Article

The coverage of measles vaccination among the children aged 12 – 23 months in the urban areas of Bellary

Ramesh K[1*], Gangadhar Goud[2]

[1]Associate Professor, [2]Professor and HOD, Department of Community Medicine, VIMS, Bellary, Karnataka, INDIA.
Email: ramspsm@gmail.com

Abstract

Background: Measles is highly infectious with an estimated secondary attack rate of 75-90% of susceptible household contacts. The basic reproductive rate (R0) is estimated to be between 12-18 compared to 4-7 for mumps, polio, and rubella. Transmission occurs by respiratory droplets or particle aerosols with infectivity greatest at 3 days before rash onset. It is most often contracted by an infected person coughing or sneezing or being in direct contact with virus infected nasal or throat secretions **Methodology:** This was a cross sectional study carried out for a period of three months among urban areas of Bellary. The study population consisted of children aged between 12 – 23 months in urban areas of Bellary. The required sample size was selected by using 30 cluster survey methods. **Results:** Among total 210 children, highest proportion of children were in the age group of 22 months (23.3%) followed by 19 months (21.9%), 20 months (20.9%), 21 months (11.9%), and 14 months (7.14%). Few children were in age groups of 13 and 15 months. **Conclusion:** Measles vaccination coverage was found to be 91.4% for Measles 1 and 76.6% for Measles.
Key Words: Measles, Vaccination, Urban area.

[*]**Address for Correspondence:**
Dr. Ramesh K, Associate Professor, Department of Community Medicine, VIMS, Bellary, Karnataka, INDIA.
Email: ramspsm@gmail.com
Received Date: 15/11/2017 Revised Date: 21/12/2017 Accepted Date: 06/01/2018
DOI: https://doi.org/10.26611/1011513

Access this article online

Quick Response Code:

Website: www.medpulse.in

Accessed Date: 09 January 2018

INTRODUCTION

Measles virus is a member of paramyxoviridae family; belonging to the genus Morbillivirus. There is only one known serotype of the virus, however, genetic variability is seen among wild-type viruses. At present, 23 genotypes have been identified, but the variation does not appear to have any biologic significance with regards to vaccine efficacy. The measles virus invades the respiratory epithelium of the nasopharynx and replicates for 2-3 days developing a primary viremia. Secondary viremia occurs 5-7 days later, lasting 4-7 days. At 11-14 days, viremia peaks, declining rapidly over a few days.[1,2] The incubation period is generally 8 to 12 days. The prodromephase of disease (2-4 days) begins with a stepwise increase in fever reaching 103F- 105F. The fever is followed by symptoms similar to other common respiratory infections, including a runny nose, coryza, cough, and conjunctivitis. A sore throat, headache, abdominal pain, and generalized mild lymphadenopathy may also occur. About 14 days after exposure, a maculopapular rash appears, beginning at the hairline, proceeding down to the face and neck. The rash persists for 3-7 days, appearing as discrete legions (sometimes becoming confluent on the upper body) and will gradually spread, covering the body, eventually reaching the hands and feet. Fine desquamation may occur on certain areas of the body, and the rash will fade in the order it appeared.[3,4] Measles is highly infectious with an estimated secondary attack rate of 75-90% of susceptible household contacts. The basic reproductive rate (R0) is estimated to be between 12-18 compared to 4-7 for mumps, polio, and rubella. Transmission occurs by respiratory droplets or particle aerosols with infectivity greatest at 3 days before rash onset. It is most often contracted by an infected person coughing or sneezing or being in direct contact with virus infected nasal or throat

How to cite this article: Ramesh K, Gangadhar Goud. The coverage of measles vaccination among the children aged 12 – 23 months in the urban areas of Bellary. *MedPulse International Journal of Community Medicine* January 2018; 5(1): 13-15. https://www.medpulse.in/

secretions. The pre-rash symptoms mirror those of other common respiratory infections. Thus infected individuals often unknowingly participate in social activities facilitating transmission.5 Those infected with the virus become infectious about four days prior to the onset of rash and will remain infectious for four days after the rash begins. While the non-specificity of measles symptoms make accurate diagnosis difficult, WHO has created a standard case definition. The clinical case definition is any person presenting with fever, maculopapular rash, and one of the following: cough, coryza, or conjunctivitis.6A laboratory confirmed case should meet the clinical case definition and is serologically positive for measles IgM. An epidemiological linked case is defined as having contact with a laboratory confirmed case and presenting with rash within the past 30 days.7 Suspected cases should be discarded if neither clinical nor laboratory definitions are met. In countries currently working toward measles mortality reduction and elimination goals, WHO recommends the use of IgMenzyme linkedimmuno-assay (ELISA) for confirmation of acute measles infection for specimens collected during the first 30 days after rash onset.8

METHODOLOGY:

This was a cross sectional study carried out for a period of three months among urban areas of Bellary. The study population consisted of children aged between 12 – 23 months in urban areas of Bellary. The required sample size was selected by using 30 cluster survey method

Inclusion Criteria

- All the children aged between 12 – 23 months
- Children should be resident of that area since birth

Exclusion criteria

- Migrant families
- Not willing to give consent for study

The data was entered in excel and analyzed using proportion, mean and standard deviation

RESULTS

Table 1: Distribution based on age

Age in months	Frequency	Percent
13	9	4.28
14	15	7.14
15	12	5.71
16	5	2.38
17	5	2.38
19	46	21.9
20	44	20.9
21	25	11.9
22	49	23.3
Total	**210**	**100.0**

Among total 210 children, highest proportion of children were in the age group of 22 months (23.3%) followed by 19 months (21.9%), 20 months (20.9%), 21 months (11.9%), and 14 months (7.14%). Few children were in age groups of 13 and 15 months.

Table 2: Distribution based on place of delivery

Place of delivery	Frequency	Percent
Government	170	80.9
Private	40	19.1
Total	210	100.0

In this study, it was revealed that 80.9% of deliveries took place in government hospitals and 19.1% at Private hospital

Table 3: Distribution based on socio Economic Status

SES	Frequency	Percent
Upper	10	4.76
Upper middle	23	10.9
Lower middle	44	20.9
Upper lower	94	44.7
lower	39	18.5
Total	**210**	**100.0**

Highest proportion of children belongs to upper lower SES (44.7%) followed by lower middle SES (20.9%), lower SES (18.5%) and upper middle (10.9%)

Table 4: Distribution based on measles Vaccination coverage

Status	Measles 1	Measles 2
Yes	192 (91.4%)	161 (76.6%)
No	18 (8.6%)	49 (23.4%)
Total	210	210

In this study measles vaccination coverage was found to be 91.4% for Measles 1 and 76.6% for Measles 2

DISCUSSION

In the current study the measles vaccination coverage was 91.4%. This result was almost similar to the study conducted by a National Family Health Survey-3 (NFHS-3) in the year 2005-06 all over India by Ministry of Health and Family Welfare Govt. of India [10]. It showed that the total measles vaccination coverage all over Karnataka was 72%, for urban population 79.5% and for rural 67.5%. One dose of Vitamin A supplementation coverage was 22.8% for urban population 24.7% and for rural 21.7%. And also the total measles vaccination coverage all over India was 58.8%, for urban population 71.8% and for rural 54.2%. One dose of Vitamin A supplementation coverage was 24.9% for urban population 26.8% and for rural 24.2%. If we compared to our study the national coverage is less this could be explained by different geographical area and the time at which study was conducted. This could be because of different methodology adopted. Bhagyalakhmi A, Kedia G, Rawal VS studied 'Incidence of measles and

vaccination coverage in Ahmedabad urban slums' in Feb 2000. A total of 3073 children between 9 to 59 months were studied. In that Incidence rate of measles was 11.2% and vaccination coverage was only 59.88 % (1840). Among 1840 vaccinated children only 529 (28.75%) children received vitamin A along with measles vaccination[9]. Money M K Mohan P, studied 'measles immunization coverage in urban slums' it was a cross sectional community based study was conducted 32 slums of udaipur city. 265 children between 9 to 24 months were enlisted for the study. Using a practical cluster sampling method, Immunization status of the children and reason for non immunization were noted. Measles immunization coverage amongst the study population was 50.61%. Not offering measles immunization at curative visits (86.9%) was the major reason for missing opportunities[10]. Chaturvedi S, Agarwal OP studied 'measles immunization and disease; situation analysis in a settlement area of northern India'. The present study conducted in a resettlement area of east Delhi with a population of nearly one lakh to assess the extent of measles immunization and infection among children aged less than 3 years. All 21 blocks of the area were covered and 10% house holds were selected by system random sampling from each of the blocks to provide 944 house holds and 517 children less than 3 years. 281 children immunized giving 74.14% coverage[11]. Chaturvedi S, Agarwal OP studied 'measles immunization and disease: rapid epidemiological assessment in two trans-yamuna village of Delhi'. A total of 126 under 3 years' children from 360 house holds were investigated. Total children immunized against measles were 86(68.25%). Main reason for non immunization was parental apathy[12].

CONCLUSION

If we compared to our study the national coverage is less this could be explained by different geographical area and the time at which study was conducted. This could be because of different methodology adopted

REFERENCES

1. International Institute of Population Sciences (IIPS) and ORC Macro. National family Health Survey-I (NFHS-I), 1992-1993: India. Mumbai: IIPS.
2. International Institute of Population Sciences (IIPS) and ORC Macro. National family Health Survey-II (NFHS-2), 1998-1999: India. Mumbai: IIPS.
3. Kar, M., Reddiah, V.P., andShashi, Kant (2001).Primary immunization status of children in slum areas of south Delhi- The challenge of reaching the urban poor. Indian J Community Med, 26, 151-154.
4. Singh, P., and Yadav R.J. (2000).Immunization status of children of India. Indian Pedia, 37, 1194-1199.
5. Dasgupta, S. *et al* (2001).Declining trend in routine UIP coverage. Indian J Pub Health, 46, 20-23
6. Phukan, R.K., Barman, M.P., andMahanta, J. (2009). Factors associated with immunization coverage of children in Assam, India: Over the first year of life. Journal of Tropical Pediatrics, 55, 249-252.
7. Urban Health Resource Centre (2008). Child health scenario in the slums of Meerut, Uttar Pradesh: Implications for programmes and policy. www.uhrc.in.
8. AIDS– India CIEN PPI Programme Evaluation 1997-'98 Team (2000). Lessons learnt from Pulse Polio Immunization Programme. J Ind Med Assoc, 98, 18-21.
9. Bhagyalaxmi A[1], Kedia G, Rawal VS.Study of incidence of measles and vaccination coverage in Ahmedabad urban slums.Indian J Public Health. 2007 Jan-Mar;51(1):52-3
10. *Money MK, Mohan P. Measles immunisation coverage* in *urban slums.* Indian J Pediatr. 1999; 66(4):505-9. 6
11. Chaturvedi S, Aggarwal OP. Measles, immunisation and disease: situation analysis in a resettlement area of northern India.Asia Pac J Public Health. 1998; 10(1):29-32.
12. Chaturvedi S, Aggarwal OP. Measles, immunisation and disease: rapid epidemiological assessment in two trans-Yamuna villages of Delhi.J Indian Med Assoc. 2000 Jul; 98(7):381-3.

Source of Support: None Declared
Conflict of Interest: None Declared