

A Study of Knowledge, Attitude and Practices on Immunization of Children in Urban Slums of Bijapur City, Karnataka, India

M.M. ANGADI¹, ARUN PULIKKOTTIL JOSE², REKHA UDGIRI³, K.A. MASALI⁴, VIJAYA SORGANVI⁵

ABSTRACT

Background: The immunization coverage is not uniform in India. In Karnataka, except for Uttar Kannada District (very high immunization coverage of 95%) and 14 districts that have shown a better immunization coverage (>85% coverage), the remaining 15 districts (including Bijapur District) have poor coverage. The United Nations Children's Fund (UNICEF) 2002 report on Bijapur district shows that only a little over one fourth of the children were fully immunized (25.8%). The state's fully vaccinated figure was more than two and a half times higher than that of the district. In this prevailing scenario, it becomes the need of the hour to find factors which influence routine immunization in Bijapur district, which will help the planners in implementing the immunization programme in a better way, to achieve >85% coverage.

Objectives: To determine the knowledge, attitude and practices of respondents among guardians of children aged 12-23 months with respect to immunization.

Material and Methods: A community based, cross-sectional study was conducted in the urban slums of Bijapur city, India. Out of the 20 enlisted slums, 7 slums were chosen by using convenience sampling. House to house survey was done. After obtaining oral consents, information regarding knowledge, attitude and practices was collected by using a semi-structured proforma.

Results: A total of 155 mothers/ responsible guardians of children in the age group of 12 to 23 months were included in the study. Children of 54 out of 155 respondents (34.84%) were fully immunized, 97 (62.58%) were partially immunized and 4 (2.58%) were unimmunized. The main reason for partial and non-immunization was found to be lack of information.

Conclusion: Immunization coverage in the urban slums of Bijapur is still way short of the 85% coverage mark. A lack of information and motivation among the parents is the main reason for this dismal scenario, that needs to be rectified at the earliest.

Keywords: Immunization, Attitude, Urban slums

INTRODUCTION

One of the most significant contributions of the medical fraternity to mankind is the advent of vaccines. They are the most powerful, safe and cost-effective measures for prevention/control of a number of diseases.

The historical success of eradicating the dreaded disease, Smallpox, prompted World Health Organization (WHO) to ask its member countries to launch immunization against six vaccine preventable diseases in its national immunization schedule. In May 1974, the WHO launched the Expanded Immunization Programme (EPI) globally, with focus on prevention of 6 vaccine-preventable diseases by the year 2000. In India, EPI was launched in 1978 and it was re-designated as the Universal Immunization Programme (UIP) in 1985, with a goal to cover at least 85% of infants [1].

The National Family Health Survey (NFHS) shows a marginal improvement in the vaccination coverage of India over the years. NFHS-1 conducted in 1992-93 reported a vaccination coverage of 35.4%, which rose to 42% in NFHS-2 conducted in 1998-99 [2,3]. The latest NFHS-3 conducted in 2005-06 reported a vaccination coverage of 43.5% [4]. The UNICEF coverage evaluation survey for the year 2009 showed that the immunization coverage had improved to 61% [5]. Nevertheless, these figures are way short of the target of 85% coverage.

A UNICEF Report on Bijapur District (2002) regarding immunization coverage among children aged 12-23 months stated that 18% had not received any vaccination at all, while only little over one-fourth had received complete immunization [6]. According to the District Level Health Survey (DLHS)-2(2002-04) held in Karnataka, Bijapur District with an immunization coverage of 49.2%, Bijapur

was one among the six districts in Karnataka that was found to have a coverage of less than 55%. This improved marginally to reach 50.5% full immunization coverage according to DLHS-3 (2007-08). Bijapur district also holds the infamous distinction of having the lowest measles and OPV-3 coverage in Karnataka [7].

In this prevailing scenario, it becomes the need of the hour to find factors which influence routine immunization, which will help the planners to implement the immunization programme in a better way, to achieve >85% coverage.

OBJECTIVES

To determine the knowledge, attitude and practices with respect to immunization among respondents (mothers/ responsible guardians) of children aged 12-23 months.

MATERIAL AND METHODS

A community based, cross-sectional study was conducted in the urban slums of Bijapur city, India. Out of the 20 slums enlisted according to the Bijapur Slum Board, 7 slums were chosen by convenience sampling and house to house survey was done. The study was carried out over a period of two months (October and November, 2011). All mothers/ responsible guardians of children aged 12-23 months were included in the study. After explaining the purpose of the study to the mothers/ responsible guardians, oral consents were taken. Mothers/responsible guardians who did not give consent were excluded from the study. Information regarding knowledge, attitude and practices was collected by using semi-structured proforma. Reasons for non-immunization as per the mothers' reports, were recorded.

The data on getting one dose each of BCG and measles; three doses of DPT/ OPV were collected. Hepatitis B vaccine history was excluded, as it was included in the national immunization schedule only in 2010-2011. Accuracy of immunization data was improved by checking the immunization cards, and when cards were unavailable, mothers' reports on children having been given/ not been given a vaccine was recorded. Since majority of the children did not have immunization cards, "Card or History" survey technique recommended by WHO for areas where immunization cards were not commonly available, was followed. Hence, the coverage evaluated through this study was the "crude" coverage for the given area [8]. Further, scar of BCG vaccine was checked in each child included in the study. The basic data on immunization (history regarding doses and reasons for failure of immunization) was collected as per WHO recommendations [9]. Data from the survey was statistically analyzed using Microsoft Excel and by applying Chi-Square test.

RESULTS

A total of 155 children in the age group of 12 to 23 months were included in the study. This sample included 78 boys and 77 girl children. A vast majority of the mothers were housewives (85.16%) and 50.32% were illiterate [Table/Fig-1].

The sources of information regarding immunization amongst majority of the respondents were family members and relatives (42.48%), followed by health workers such as auxiliary nurse midwives (ANMs) or Anganwadi workers (AWWs) (34.19%) and doctors (17.42%). Only 16.67% of the children whose sources of information were family members or relatives were completely immunized [Table/Fig-2].

While 69.03% of the respondents had immunization cards, the rest of them did not have the immunization cards with them at that time, with most of them citing misplacement and non-issuance as the reasons. A large proportion of the children (78.71%) had received their immunization from government establishments.

Fifty four out of 155 children in the study (34.84%) were fully immunized, 97 (62.58%) were partially immunized and 4 (2.58%) were unimmunized. The analysis of vaccine-specific data indicated a low level coverage for OPV3/ DPT3 and measles, as can be seen in [Table/Fig-3]. Among 139 children who received the first dose of DPT, only 64 got the third dose, with a dropout rate of 53.96% for DPT1/OPV1 to DPT3/ OPV3. An overall dropout rate of 57.05% was seen

Mothers' Perceptions and Knowledge: Majority of the respondents (65.16%) opined that diseases could be prevented by immunization, while only 11.61% could name two or more diseases that could be prevented by the immunization schedule. No respondent could name more than three of diseases and 61.16% could not even name one.

Forty six respondents (29.98%) were of the opinion that it was important to give all the doses in the immunization schedule, while only 18 (11.61%) knew when the doses had to be given.

Among the 101 respondents who said that diseases could be prevented by immunization only, 43 children were fully immunized. Even though 46 respondents opined that it was important to give all doses of the immunization schedule, only 26 children among these were fully immunized.

Reasons for Partial and Non-Immunization

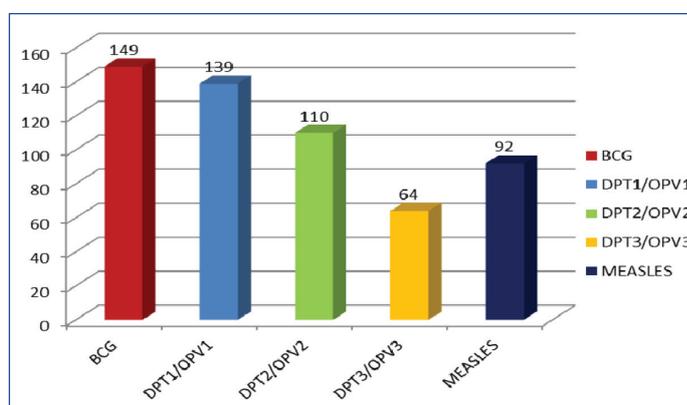
As has been shown in [Table/Fig-4], the main reason for partial and non-immunization was found to be lack of information, with many citing a combination of both, lack of information, along with lack of motivation. Ninety seven respondents blamed it on the lack of knowledge regarding the schedule, while 8 respondents said they did not know the place and /or time of immunization. Thirteen

S No.	Socio-demographic indicators	Father (n= 154)*	Mother (n= 155)
1	Age < 20years 21 - 25years 26 - 30years 31 - 35years 36 - 40years > 40years	0 41 (26.62%) 66 (42.86%) 33 (21.43%) 10 (6.49%) 4 (2.30%)	32 (20.65%) 86 (55.48%) 27 (17.42%) 10 (6.45%) 0 0
2	Education Illiterate Primary school Secondary school Pre- college Graduate	60 (38.96%) 20 (12.99%) 64 (41.56%) 7 (4.55%) 3 (1.95%)	78 (50.32%) 11 (7.10%) 63 (40.65%) 2 (1.29%) 1 (0.65%)
3	Occupation Unemployed / housewife Daily wage Employed	10 (6.49%) 133 (86.36%) 11 (7.14%)	132 (85.16%) 22 (14.19%) 1 (0.65%)
4	Socio-economic Status B.G. Prasad modified for [10] 2011 1 2 3 4 5		0 17 (10.97%) 28 (18.06%) 86 (55.48%) 24 (15.48%)

[Table/Fig-1]: Distribution of Socio-demographic indicators of the respondents
Note: * One of the children had lost his/ her father, hence n= 154

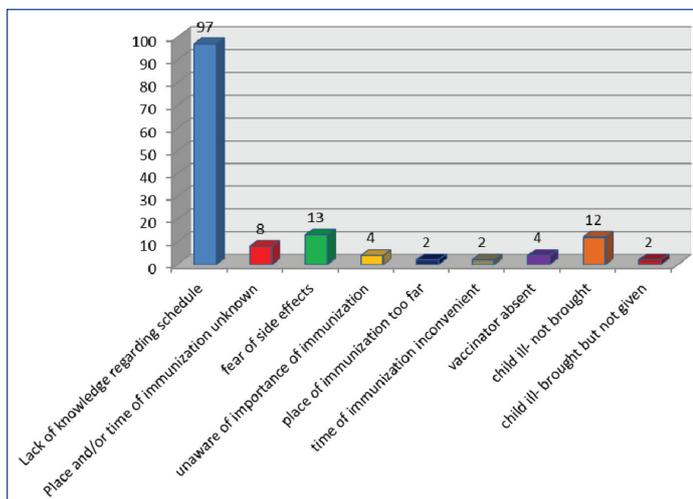
S No.	Immunization Details	No. of Children (n= 155)
1	Source of Information None Health Worker (ANM/AWW) Doctor Family / Relatives Neighbors	4 (2.58%) 53 (34.19%) 27 (17.42%) 66 (42.58%) 5 (3.23%)
2	Sex of child Male Female	78 (50.32%) 77 (49.68%)
3	Immunization card Has card Does not have card	107 (69.03%) 48 (30.97%)
4	Site of immunization Government Private Not given	122 (78.71%) 29 (18.71%) 4 (2.58%)
5	Immunization status Fully immunized Partially immunized Unimmunized	54 (34.84%) 97 (62.58%) 4 (2.58%)

[Table/Fig-2]: Immunization details of children aged 12 -23 months



[Table/Fig-3]: Vaccine doses administered

respondents declined from bringing their children for immunization for the fear of side effects and 4 respondents were unaware of the importance of immunization. Many respondents cited feasibility problems as the reason for partial or non-immunization. Two respondents complained that the immunization centre was too far, while two others said that the time of immunization was



[Table/Fig-4]: Reasons for failure of immunization among children aged 12-23 months

S. No.	Socio-demographic Indicator	Fully Immunized (n=54)	Partially Immunized and Unimmunized (n=101)
1	Mothers Education		
	Uneducated	23	55
	Primary school	5	6
	Secondary school and above	26	40
Degree of freedom = 2, Chi-Square = 2.133, p = 0.3442(NS)			
2	Socio-economic Status		
	2	5	12
	3	12	16
	4	30	56
	5	7	17
Degree of freedom = 3, Chi-Square = 1.354, p = 0.7164(NS)			
3	Sex of Child		
	Male	28	50
	Female	26	51
Degree of freedom=1, Chi-Square= 0.07753, p=0.7807(NS)			

[Table/Fig-5]: Comparison of immunization status with socio-demographic indicators

inconvenient. Four respondents claimed that the vaccinator was absent when they had visited the centre and 2 respondents said that their children were not given immunization as they had been brought ill. Twelve respondents did not take their children for the due dose as they were ill.

Factors Influencing the Immunization Status

On applying Chi-Square test, it was found that the effect of factors, such as mother's educational status, socio-economic status and sex of the child on the immunization status, was not statistically significant [Table/Fig-5].

DISCUSSION

The immunization coverage status of the seven slums combined was far lower than the target which had to be achieved (85% coverage) and the results of this study showed that there was very little improvement over the past few years. The immunization coverage found by this study (34.84%) was comparable to that in the UNICEF 2002 report of Bijapur district, that stated that only little over one-fourth (26%) children were fully vaccinated, 56% were partially vaccinated and the remaining 18% had not received any vaccination at all, [6]. The results were however, much lower as compared to the DLHS-3 reported vaccination coverage of 50.5% [7]. In a similar study conducted in slums of Surat in September, in 2000, out of the 294 children covered, who were between ages of 12-24 months, 25% were fully immunized, 51.7% were partially immunized and 23.1% were unimmunized [11].

The sources of information regarding immunization among completely immunized children were found to be mainly health personnel

and anganwadi workers. This was similar to the findings of a study conducted by Bhola Nath et al., who concluded that Auxiliary Nurse Midwives (ANMs), paramedical workers were found to be the major sources of information for the attendants of completely (52.0%) and partially immunized (48.5%) children [12]. Similar findings were seen in studies done by MC Singh et al., and N Gulati et al, who found that health workers and health personnel were the major sources of information regarding immunization [13,14]. Though family and relatives formed a major proportion of the sources of information among the respondents, the proportion of children that was completely immunized was just 16.67%.

High levels of dropout rates were another reason for concern. High levels of initial vaccination rates and low levels of OPV3/DPT3 and measles vaccines were also seen in a study done by Manjunath U et al., [15]. This is a clear indication that the programme needs to focus not only on initiating immunization, but that it should also concentrate on motivating mothers to complete the schedule.

Another finding in the study was the limited knowledge of the mothers regarding immunization. Though a vast majority of the respondents agreed on the fact that immunization was important to protect their children from diseases, most of them could not even name one disease that immunization provided protection against. This finding was supported by the fact that the main reason for failure of immunization according to the study was lack of knowledge on the immunization schedule. Similar findings were seen in the study conducted by Manjunath et al., who concluded that though many were aware of the importance of vaccination in general, specific information on importance of completing the schedule and knowledge on vaccine preventable diseases other than poliomyelitis were very limited [15].

It was also seen that immunization statuses of the children were not significantly associated with their genders. This was similar to the findings of the study done by AM Kadri et al., who found that though the coverage of all vaccines was slightly higher in males than in females, this difference was statistically insignificant [16]. In the present study, it was found that immunization status was not significantly associated with other factors such as maternal education and socio-economic status. This was in contrast to the findings of study done by Bholanath et al., that found that maternal education and socioeconomic status were significant independent predictors of immunization status [17]. This change has probably occurred due to the improved access to immunization and improved social mobilization of the health workers, that have helped us tackle previous barriers to immunization, such as illiteracy and low socio-economic status.

CONCLUSION

Despite efforts, the immunization programme has not only failed in achieving its target, but is lagging far behind the 85% coverage mark. An unfortunate fact was that though a vast majority of the population recognized the importance of immunization, a superficial knowledge of the schedule and failure of the authorities in inculcating enough motivation in the target population for completing the schedule, has led to a large proportion of the children being partially immunized. Sociologists, behavioural scientists and health personnel should develop a comprehensive strategy, to bring out effective changes in the attitudes and practices regarding immunization of children. This study goes out as a wakeup call for all policy makers and healthcare providers, in that, providing the resources for immunization alone is a job which is half done and that health education is also an essential component that can go a long way in improving the prevailing scenario of immunization in the country.

ACKNOWLEDGEMENT

Authors acknowledge the help received from scholars whose articles have been cited and included in references of this manuscript.

REFERENCES

- [1] Park K. Park's textbook of Preventive and Social Medicine, *Banarsidas Bhanot Publishers*. 22nd Edition, 2009; 114.
- [2] International Institute for Population Sciences (IIPS), 1995. National Family Health Survey. (MCH and Family Planning), India 1992-93, Bombay: IIPS.
- [3] International Institute for Population Sciences (IIPS) and ORC Macro. 2000. National Family Health Survey. (NFHS- 2), 1998- 99: India, Mumbai : IIPS.
- [4] International Institute for Population Sciences (IIPS) and Macro International. 2007. National Family Health Survey. (NFHS-3), 2005-06: India: Volume I. Mumbai: IIPS.
- [5] United Nations Children's Fund. *Coverage Evaluation Survey Report*. 2009- National Fact sheet.
- [6] Population Research Center, JSS Institute of Economic Research, Dharwad, Bijapur District, Karnataka. Multiple indicator survey. 2002. January 2003, PRC Report No.121,p.5-6.
- [7] International Institute of Population sciences and Ministry of Health and Family welfare, District Level Household and Facility Survey. 2007-08.
- [8] World Health Organization. Training for mid-level managers (MLM). Module 7: *The EPI coverage survey*. Available from: <http://www.who.int/vaccines-documents/>
- [9] World Health Organization. Immunization coverage cluster survey: Reference manual. Available from: <http://www.who.int/vaccines-documents/>.
- [10] Bhalwar R. Text Book of Public Health and Community Medicine. Department of Community Medicine, Armed Forces Medical College, Pune. 1st Edition, 2009; 613.
- [11] Sharma R, Desai VK, Kavishvar A. Assessment of Immunization Status in the Slums of Surat by 15 Clusters Multi Indicators Cluster Survey Technique. *Indian Journal of Community Medicine*. April 2009, 34(2): 152-55.
- [12] Nath B, Singh JV, Awasthi S, Bhushan V, Kumar V, Singh SK. KAP Study on Immunization of Children in a City of North India – A 30 Cluster Survey. *Online J Health Allied Scs*. 2008; 7(1):2.
- [13] Singh MC, Badole CM, Singh MP. Immunization coverage and the knowledge and practice of mothers regarding immunization in rural area. *Indian Journal of Public Health*. 1994;38(3):103-07.
- [14] Gulati N, Sahgal K, Gogia V, Jain BK. Factors influencing immunization status of urban and rural children in Delhi. *Indian Journal of Community Medicine*. 1990; 15(4):180-84.
- [15] Manjunath U, Pareek RP. Maternal knowledge and perceptions about the routine immunization programme – A study in a semi-urban area in Rajasthan. *Indian J Med Sci*. 2003; 57:158-63.
- [16] Kadri AM, Singh A, Jain S, Mahajan RG, Trivedi A. Study on immunization coverage in urban slums of Ahmedabad city. *Health and Population: Perspective and issues*. 2010; 33 (1): 50-54.
- [17] Nath B, Singh JV, Awasthi S, Bhushan V, Kumar V, Singh SK. A study on determinants of immunization coverage among 12-23 months old children in urban slums of Lucknow District, India.

PARTICULARS OF CONTRIBUTORS:

1. Professor and HOD, Department of Community Medicine, BLDEU's Shri B M Patil Medical College, Bijapur, Karnataka, India.
2. PG student, Department of Community Medicine, BLDEU's Shri B M Patil Medical College, Bijapur, Karnataka, India.
3. Professor, Department of Community Medicine, BLDEU's Shri B M Patil Medical College, Bijapur, Karnataka, India.
4. Professor, Department of Community Medicine, BLDEU's Shri B M Patil Medical College, Bijapur, Karnataka, India.
5. Lecturer, Department of Community Medicine, BLDEU's Shri B M Patil Medical College, Bijapur, Karnataka, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. M. M. Angadi,
 Professor and HOD, Department of Community Medicine, BLDEU's Shri B M Patil Medical College,
 Bijapur, Karnataka- 586103, India.
 E-mail: angadi_bldea@yahoo.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Jun 02, 2013**
 Date of Peer Review: **Aug 09, 2013**
 Date of Acceptance: **Sep 12, 2013**
 Date of Publishing: **Dec 15, 2013**