

# Awareness Level about Immunization Programme in Low Socio Economic Families at Rural Sectors of Purba and Paschim Medinipore Districts, West Bengal: A Cross Sectional Study

Madhumita Guria, Kausik Chatterjee<sup>1</sup>, Debidas Ghosh<sup>2</sup>

<sup>1</sup>Andrology, Endocrinology and Molecular Medicine Laboratory  
Department of Bio-Medical Laboratory Science and Management  
With

<sup>2</sup>Clinical Nutrition and Dietetics (UGC Innovative Programme Funded Department)  
Vidyasagar University, Medinipore-721 102, West Bengal, India

Professor & Head, Department of Bio-Medical Laboratory Science & Management, (UGC Innovative Programme Funded Department)  
In-Charge, Dept of Clinical Nutrition and Dietetics, (UGC Innovative Programme Funded Course)  
Vidyasagar University, Medinipore-721 102, West-Bengal, India

**Running Title:** Awareness about immunization: A cross sectional study

**Abstract:** To find out the awareness level of family members about routine immunization of under five children at rural sectors of Purba and Paschim Medinipore districts, West Bengal. Approach has also been taken to find out whether there is any variation in the coverage of vaccination between male and female children. In this cross sectional study, five hundred children were covered. Low economic homogeneous groups were randomly studied by pretested semi-open ended questionnaire method. Data about immunization coverage of 590 children were collected from the age group of 1+ to 5+ years. The final result was analyzed by Chi-square test and P-value was expressed through various bars, pie diagrams and tables. Out of 590 children male and female children were 355 (60%) and 235 (40%). Out of three hundred thirty five male children full, partially and non-immunized children were 200 (56%), 120 (34%) and 35 (10%). Out of two hundred thirty five female children full, partially and non-immunized children were 55(23%), 125 (53%) and 55 (24%). Mothers were found more aware in this concern than other family members. In remote areas, Anganwadi (AWW) or ASHA workers play important role about the dissemination of knowledge. Out of 590 children, ICDS supported children were 395 (67%) and non-supported were 195(33%). Percentage of full immunization was found low in SC, ST and OBC caste than general Caste. Similarly it was found more in service holder group than other occupational groups as well as in the small family in respect to big family size. Location of PHC has also an immense role for the completion of vaccination. Some factors i.e. the literacy level, knowledge level regarding immunization, site of vaccination, social and geographical barriers about vaccination, existence of ICDS center etc. has an important impact on the awareness level of vaccination. The trend of full vaccination in the said age group is more in male children than female children.

**Keywords:** Awareness level, Full immunization, Immunization, Low socio economic group, Partial immunization

## 1. Introduction

Immunization helps to trigger acquired immunity. The goal to immunize the children against chief diseases is to reduce child mortality and morbidity. However, it is not an easy task to achieve. Routine Immunization is one of the most cost effective public health benefit intervention programmes, which was launched at first in 1978 in our country. Though, infants are born with a natural or inborn immunity but it is temporary in nature. So, vaccination is needed in childhood. In a developing country like India, the sheer logistics of the numbers of the target population that stretches across geographically diverse region make universal immunization of children is a 'Herculean' task. In India there are some factors i.e. social, cultural and economical those inhibit the immunization programme. Under Universal Immunization Programme (UIP), there are six preventable diseases i.e. tuberculosis, diphtheria, pertussis, tetanus, polio myelites and measles. All are available in free of cost. In 1985, this UIP was launched and there is a target to attain immunization of all eligible children by 1990. In each year,

thousands, of children still die from vaccine preventable diseases (1). For the poor coverage in routine immunization, improper 'Information, Education and Communication' (IEC) activities are the important causes of inadequacy of community participation (2). In world, approximately 3 million children die in each year of vaccine preventable diseases (VPD), with a disproportionate number of these children residing in developing countries (3). Vaccination coverage in India is also far from complete despite the long standing commitment to universal coverage. Government of India (GOI) launched the expanded programme on immunization in 1978 to protect children against diphtheria, pertussis, tetanus and typhoid. Vaccination against polio through OPV was added to the programme in 1979-80 and BCG vaccination against tuberculosis was added in 1981-82. Vaccination against measles was included in 1985-86 UIP programme was integrated with the RCH programme in 1997. Although the PPI (public polio immunization) has been increased significantly but there were limited gains in complete coverage of polio vaccines (4). The importance of awareness about RI (Routine Immunization) as a factor for the success of UIP was focused by previous studies (5,6). In

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continuation to that this study was carried out to assess how much people cover the child immunization and what are the causes of partial immunization at same rural sectors of West Bengal which will help the concern authority to take necessary steps in this concern.

## 2. Materials and Methods

It was a questionnaires method and for this study, samples were selected randomly from the concerned villages at remote areas of Purba and Paschim Medinipore districts (Block Rasulpur, Junput, Patashpur, Majna from Purba Mednipore and Garhbeta, Lalgarh, Ghatal, Sabang, Belda and Binpur blocks from Paschim Medinipore) which were undertaken in April 2009 to August 2011. Out of five hundred ninety children, one hundred forty families were engaged in cultivation, two hundred nineteen families were engaged in daily labour job, one hundred service holder's families and one thirty one families were holding other occupations. On the basis of caste variation, one hundred twenty six families were 'General Caste', one hundred forty five were 'Schedule Caste', two hundred fifteen families were 'Schedule Tribe' and eighty four families were 'Other Backward Classes (OBC)'. Their educational status was not homogenous. Two hundred forty six families having an educational level up to primary level, one hundred ten families with knowledge level of secondary education, higher secondary level of education was found in one hundred seventy five families but fifty nine families having educational level above higher secondary. The awareness level of father, mother, and other family members were assessed by questionnaire method. It was also assess about the sources of their knowledge regarding vaccination and the barriers of their discontinuing of routine immunization. The final result was analyzed by Chi-square test and P-value was expressed through various bars, pie diagrams and tables.

## 3. Results

Here the total children were 590 up to 5+ years. Out of 590 children male children were 355(60%) and female children were 235 (40%). Out of three hundred fifty five male children full, partially and non-immunized children were 200 (56%), 120 (34%) and 35 (10%). Out of two hundred thirty five female children full, partially and non-immunized children 55(23%), 125(53%) and 55(24%) (Table1). Knowledge level regarding immunization of family members focused that mothers have highest level of knowledge in this concern field in the said family but the knowledge level of immunization in grandfather and grandmother are comparatively less (Fig. 1). Regarding the role of different sources of knowledge in favour of immunization, it has been noted that at remote areas, anganwadi or AHSAs workers (AWW) plays an important role where other sources are Primary Health Centre (PHC), Mass Media and friend circle (Fig. 2). Geographical barriers for vaccination are other controlling factors against immunization. It has been noted that location of PHC has an immense role for the completion of vaccination, though within two kilometers deprivation was notice more than that of within five kilometers (Fig. 3). The trend of vaccination in male and female child in the age group from 1+ to 5+ is not unique. The trend is more in male children than female

(Table 2). Caste variation, occupational variation and family size also affected the immunization status. Percentages of full immunization were found low in SC, ST and OBC caste than general caste. Similarly same facts notice for farmer, labour and other groups than service holder group, and large family size (Table 3). Likewise educational level was also a controlling factor for immunization (Table 4). Out of 500 children 89% were been vaccinated from Govt. sector & 11% were taken from private sectors in ICDS supported zone where in contrast children were immunized by 10% from Govt. sector and 90% from private sectors in ICDS non-supported zone (Table 5). On the basis of role of ICDS center some families were found who did not guided by ICDS centers regularly. Out of 590 children, ICDS supported families were 395(67%) and ICDS non-supported families were 195 (33%). In ICDS supported zone, percentage of fully immunized families was 75% and percentage of partially as well as non-immunized families was 20% and 5% respectively. In ICDS non-supported zone fully immunized family was 30%, partly immunized family was 25% and non-immunized family was 45% (Fig. 4).

## 4. Discussion

Routine immunization is an important approach for reducing the rate of mortality and morbidity in community. For this purpose an attempt was taken to find out the coverage of full or partial immunization of the pre-school children along with the study of awareness level of their parents and family members. As awareness is known as social vaccination so, impact of awareness regarding vaccination is indisputable. The study indicated that awareness level of female family members about routine vaccination is more than male family members and this consistent with others (2, 7). Educational level of the family member is one of influencing in this concern as reported here and this is also supported by other (8). People of General caste are more aware about immunization of their offspring than the people of ST, SC and other backward castes because of their economical, social and educational advancement (9, 10). Type of occupation is another fundamental cause which made the farmer, daily labour and others persons reluctant about immunization process which has been supported here as well as by others (11). Regarding the impact of difference sources for awareness generation at rural sectors it has been founded that peripheral level of workers like AWW/ASHA workers play a crucial role in this concern followed by PHC and it is supported by other (12). The role of peripheral health workers in this concern have been reflected from the study of full immunization in ICDS supported zone which is significantly more than the ICDS non-supported zone. Regarding the trend of routine immunization on the basis of sex, it has been indicated that the percentage of full immunization in male children is more than female. Maximum number of drop out in series of vaccines is noted in female, which is consistent with other's observation (13, 14). Moreover, the full immunization is noted in low rate in big family size of the rural sector which is known as negligence effect as proposed by others (15).

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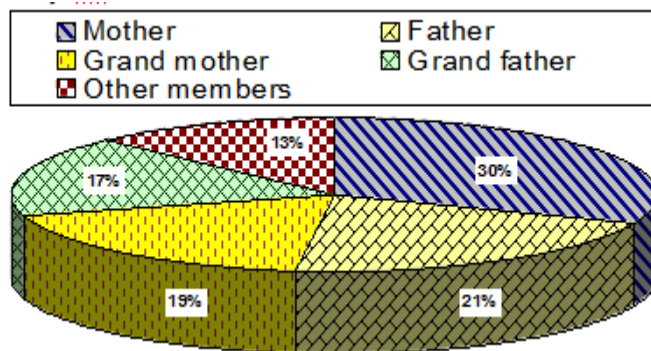


Figure 1: Percentage of father, mother, grandfather, grandmother and other family members regarding the knowledge of child and mother immunization

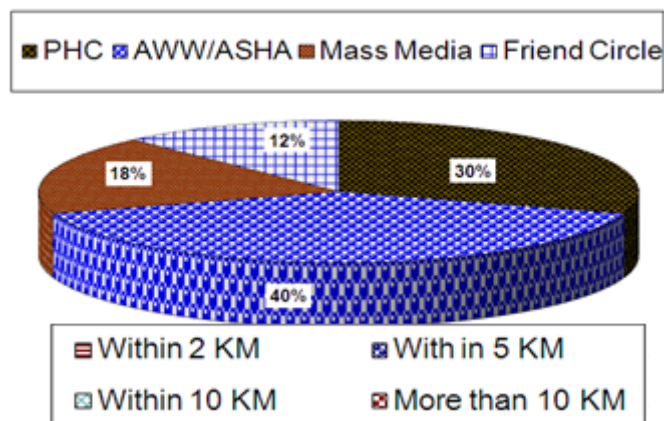


Figure 2: Sources of knowledge of family members regarding the knowledge of child and mother immunization

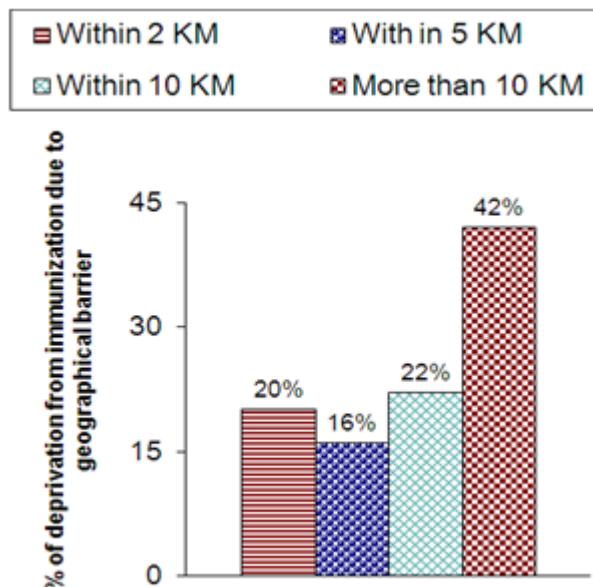


Figure 3: Role of the distance between PHC and residential area as interference for child and mother vaccination in study area

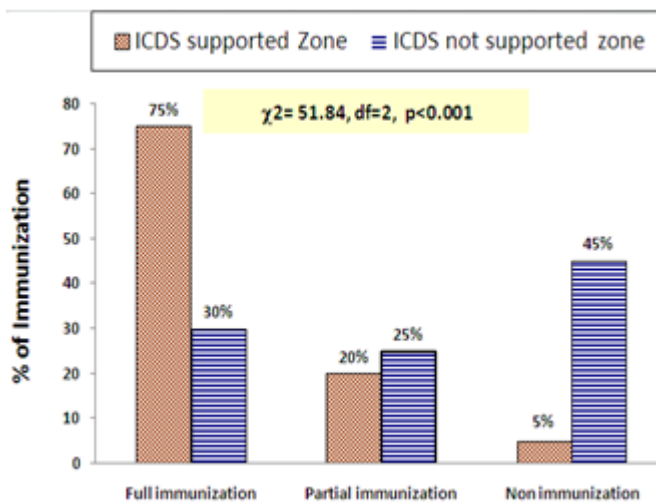


Figure 4: Comparative study of Immunization status (Full, Partial and Non-immunized) of children between ICDS supported and non-supported zones

Table 1: Comparative study about immunization status between male and female children of the study area (Data expressed in number and percentage in parentheses)

Sex \ Immunization Type	Fully immunized children Total No (%)	Partially immunized children Total No (%)	Non immunized children Total No (%)
Male (N=355)	200 (56)	120 (34)	35 (10)
Female (N=235)	55 (23)	125 (53)	55 (24)

Significant association between immunization (Full + partial) status with sex variation  $\chi^2 = 23.70, df=2, p<0.001$

Table 2: Comparative study on age wise (1+ to 5+ years age group) immunization status of male & female children

Sex	Total Male Children (N=355)					Total Female Children (N=235)				
	1 + Yr (N=21)	2 + Yrs (N=61)	3 + Yrs (N=103)	4 + Yrs (N=73)	5 + Yrs (N=97)	1 + Yr (N=37)	2 + Yrs (N=14)	3 + Yrs (N=82)	4 + Yrs (N=63)	5 + Yrs (N=39)
Full immunization	16 (76)	40 (66)	60 (58)	36 (49)	48 (49)	10 (27)	2 (14)	20 (24)	15 (24)	8 (21)
Partial immunization	3 (14)	15 (25)	35 (34)	27 (37)	40 (41)	15 (41)	3 (21)	40 (49)	40 (63)	27 (69)
Non immunization	2 (10)	6 (9)	8 (8)	10 (14)	9 (10)	12 (32)	9 (65)	22 (27)	8 (13)	4 (10)

Significant association between full, partial and non-immunization with age wise sex variation

- For 1+ Yr. = 48.09,2,<0.001 ( $\chi^2$ -test, df, p-value; Male Vs Female)
- For 2+ Yrs.=76.53,2,<0.001 ( $\chi^2$ -test, df, p-value; Male Vs Female)
- For 3+ Yrs.= 27.12,2,<0.001 ( $\chi^2$ -test, df, p-value; Male Vs Female)
- For 4+ Yrs.= 15.36,2,<0.001 ( $\chi^2$ -test, df, p-value; Male Vs Female)
- For 5+ Yrs.= 18.33,2,<0.001 ( $\chi^2$ -test, df, p-value; Male Vs Female)

Table 3: Comparative study about immunization status between male and female children of the study area (Data expressed in number and percentage in parentheses)

<b>A</b>	<i>Caste (N=590)</i>		<i>General (N=126)</i>	<i>Schedule Caste (N=145)</i>	<i>Schedule Tribe (N=215)</i>	<i>Other Backward Class(N=84)</i>
	<i>Immunization Status</i>					
	Fully immunized (N=255)		110 (87)	50 (34)	60 (28)	35 (42)
	Partially immunized (N=245)		10(8)	65(45)	130(60)	40(48)
Non immunized (N=90)		6(5)	30(21)	25(12)	9(10)	
Significant association between immunization with caste variation $\chi^2 = 93.84, df=6, p<0.001$						
<b>B</b>	<i>Occupational Status (N=590)</i>		<i>Service (N=100)</i>	<i>Farmer (N=140)</i>	<i>Labour (N=219)</i>	<i>Others (N=131)</i>
	<i>Immunization Status</i>					
	Fully immunized (N=255)		90 (90)	60 (43)	80 (37)	25 (19)
	Partially immunized (N=245)		10 (10)	60(43)	110(50)	65(50)
Non immunized (N=90)		Nil	20(14)	29(13)	41(31)	
Significant association between immunization with occupation variation $\chi^2 = 120.30, df =6, p<0.001$						
<b>C</b>	<i>Family Size (N=590)</i>		<i>Small Family (N=210)</i>		<i>Big Family (N=380)</i>	

<i>Immunization Status</i>		
Fully immunized (N=255)	150(71)	105(28)
Partially immunized (N=245)	50(24)	195(51)
Non immunized (N=90)	10(5)	80(21)
Significant association between immunization with family size $\chi^2 = 38.24$ , df =2, p <0.001		

**Table 4:** Level of child vaccination in relation to family literacy (Data expressed in number and percentage in parentheses)

<i>Educational level</i> (N=590)	<i>Up to primary</i> (N=246)	<i>Above primary to Secondary</i> (N=110)	<i>Above Secondary to Higher Secondary</i> (N=175)	<i>Above Higher Secondary</i> (N=59)	Significant association between immunization coverage with family literacy $\chi^2 = 146.17$ , df =6, p <0.001
<i>Immunization Status</i>					
Fully immunized (N=255)	20 (8)	63 (57)	122 (70)	50(84)	
Partially immunized (N=245)	157(64)	29(26)	50(29)	9(16)	
Non immunized (N=90)	69(28)	18(17)	3(1)	Nil	

**Table 5:** Level of child vaccination covered in Govt. or private health institutes in ICDS covered and non-covered zones at rural belt of Purba and Paschim Medinipore districts of West Bengal (Data expressed in number and percentage in parentheses).

Sector	ICDS Coverage Type	ICDS Supported Zone (N=350)		ICDS Non Supported Zone (N=150)	
		Total No.	%	Total No.	%
	Govt. Sector	312	89	15	10
	Private Sector	38	11	135	90
Significant association between ICDS supported and non supported zone with site of vaccination i.e. Govt. sector and Private sector $\chi^2 = 124.83$ , df=1, p<0.001					