



## A study to assess the perceived barriers of parents for non-compliance of immunization coverage among the birth to five-year children residing at Loni village

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### Abstract

Immunity is the capability of multicellular organisms to resist harmful microorganisms from entering it. Immunity involves both specific and nonspecific components. The nonspecific components act as barriers or eliminators of a wide range of pathogens irrespective of their antigenic makeup. Other components of the immune system adapt themselves to each new disease encountered and can generate pathogen-specific immunity [1]. Objective: -1) To assess the immunization status among under five children. 2) To find out the factors of noncompliance of immunization from birth to five-year children. Material and method: - The study was conducted on birth to five years children who are visiting Anganwadi at Loni. Descriptive study cross sectional design with survey approach. Was used in this study. Structured questionnaire was used to assess perceived factors for noncompliance of immunization and checklist to assess immunization status. Result: The immunization compliance of all the vaccines was above 90% according to the study results. The reason for incomplete childhood immunization were identified mainly associated with maternal knowledge on immunization which includes; lack of information about all vaccines, adverse events of vaccines, lack of knowledge on due vaccine, issues of child's safety, lack of knowledge on immunization day etc. The result also showed that, there is a need for enforcing maternal knowledge on immunization.

**Keywords:** Knowledge, immunization, birth, under five children

### Introduction

An immune system may contain innate and adaptive components. The innate system in mammals, for example, is composed of primitive bone marrow cells that are programmed to recognise foreign substances and to react. The adaptive system is composed of more advanced lymphatic cells that are programmed to recognise self-substances and not to react. The reaction to foreign substances is etymologically described as inflammation, meaning to set on fire. The non-reaction to self-substances is described as immunity, meaning to exempt or as immunotolerance. These two components of the immune system create a dynamic biological environment where "health" can be seen as a physical state where the self is immunologically spared, and what is foreign is inflammatorily and immunologically eliminated. So knowledge on immunization is tested in parents who cares for their child under five in Anganwadi, Loni.

### Problem statement

"A study to assess the perceived barriers of parents for non-compliance of immunization coverage among the birth to five-year children residing at Loni village"

### Objectives

1. To assess the immunization status among under five children
2. To find out the factors of noncompliance of immunization from birth to five-year children.

### Assumptions

1. Parents may have barriers for the immunization coverage of children.
2. The number of barriers may vary from person to person based on variety of factors.
3. Education, economic status, family size, gender of baby, locality may influence the compliance to immunization.

### Research methodology

**Research approach:** Survey Approach

**Research Design:** Descriptive Research with cross sectional design.

**Population:** Parents visiting Anganwadi Loni

**Sample:** Parents

**Sample Size:** 60 parents of birth to five years children

**Setting:** The study setting is Anganwadi, Loni.

**Sampling Technique:** Non-Probability Convenience Sampling

**Tool:** Structured questionnaire to assess perceived factors for noncompliance of immunization in parents was assessed involved in study.

**Sampling criteria**

**Inclusion criteria**

Parents of under-five children, who are,

1. Residing at Loni (BK) village
2. Available during data collection period
3. Have immunization card of under five-year children
4. Willing to provide written informed consent

**Findings**

**Section I: Description of Socio demographic profile of parents of under-five children**

- Percentage wise distribution of parents according to their Gender depicts that most (93%) was Mother and only 07% of them was Father. It interprets that most of the respondents under study was Mother.
- Percentage wise distribution of parents according to the Age of care giver/Parent depicts that (43%) of the parents was in the age group of 20-25 years and (28%) was in the age group of 26-30 years. It interprets that majority of the parents under study was in the young adult age.
- Percentage wise distribution of parents according to their educational qualification depicts that higher percent (37%) of them had higher secondary education followed by 25% had graduated. It shows that most of the parents under study was literate.
- Percentage wise distribution of parents according to their Occupation depicts that majority (87%) of them had Agriculture work and remaining 13% was wages. It envisages the occupational status of the Rural India.
- Percentage wise distribution of parents according to their Religion depicts that majority (68%) was Hindu followed by 19 % was Christian. It highlights the current religious status of India.
- Percentage wise distribution of parents according to the Type of family depicts that majority (65%) was belong to nuclear family followed by 28 % was from Joint family. It highlights the family status of India.
- Percentage wise distribution of parents according to their Source of Information on Immunization depicts

that majority (72%) of them had information from health professionals, and 13 % of them had knowledge through friends and relatives. It highlights that the health care professionals are the primary source of information on Immunization for parents.

**Section II: Description of Socio demographic profile of under-five children**

- Percentage wise distribution of under-five children according to their year of registration depicts that one third (35%) of them registered at Birth to 6 months followed by 28 % of them registered at 6 -12 months. Hence it shows that most of the samples under study was registered from Birth to 6 months.
- Percentage wise distribution of under-five children according to their Gender depicts that (55%) of them was female, and 45 % was Male. It interprets that more or less equal number of children under study was male and female gender respectively.
- Percentage wise distribution of under-five children according to their Birth order depicts that half (50%) of them had order of two followed by 40 % of them had order of one. It shows that the majority of the samples under had birth order one to two.
- Percentage wise distribution of under-five children according to their Immunization up to the age depicts that one third (32%) of them had immunization up to 16 months followed by 28 % had immunization up to 14 weeks. It highlights that most of the samples under study had immunization up to 14 weeks to 16 months respectively. Further it was observed that all (100%) of children under study had place of delivery i.e. hospital (institutional delivery).
- A percentage wise distribution of under-five children according to their type of Delivery depicts that equal percent (50%) of the under-five children had type of Delivery normal vaginal delivery and caesarean section respectively.

**Section-III**

**Table 1:** Assessment of the immunization status among the under five children

SN	Name of the vaccine	Age of the child	Immunized		Not Immunized	
			Frequency	%	Frequency	%
1	BCG	At Birth	60	100	-	-
2	6 weeks	Oral polio 1st dose	54	100	-	-
		DPT 1st dose	54	100	-	-
		Hepatitis-B-1st dose	51	94.44	03	5.56
		Pentavalent 1st dose	51	94.44	03	5.56
		Rotavirus 1 <sup>st</sup> dose	54	100	-	-
		Pneumococcal 1st dose	19	35.18	35	64.82
		IPV (inj. Polio) Vaccine	54	100	-	-
3	10 weeks	Oral polio 2nd dose	54	100	-	-
		DPT 2nd dose	54	100	-	-
		Hepatitis-B-2nd dose	54	100	-	-
		Pentavalent 2nd dose	54	100	-	-
		Rotavirus 2 <sup>nd</sup> dose	54	100	-	-
		Pneumococcal 2nd dose	19	35.18	35	64.82
		IPV (inj. Polio) Vaccine	54	100	-	-

**Table 2:** Assessment of the immunization status among the under five children

SN	Name of the vaccine	Age of the child	Immunized		Not Immunized	
			Frequency	%	Frequency	%
1	14 Weeks	Oral polio 3rd dose	54	100	-	-
		DPT 3rd dose	54	100	-	-
		Hepatitis-B 3rd dose	49	90.74	05	9.26
		IPV (inj. Polio) Vaccine 3rd dose	54	100	-	-
2	9 months	Measles Vaccines	37	100	-	-
		Vitamin-A (Oral) 1 lack units (1ml)	37	100	-	-
3	12 Months	Hepatitis ‘A’ 1st dose	37	100	-	-
4	15-18 months	MMR Measles, Mumps, Rubella)	22	100	-	-
		Varicella vaccine (Chicken pox)	22	100	-	-
		Pneumococcal booster dose	19	86.36	03	13.64
5	18 months	Hepatitis ‘A’ 2nd dose	22	100	-	-

**Table 3:** Assessment of the immunization status among the under five children

SN	Name of the vaccine	Age of the child	Immunized		Not Immunized	
			Frequency	%	Frequency	%
1	18-24 Months	DPT 1st booster dose.	22	100	-	-
		Oral polio vaccine-4th dose	22	100	-	-
		Vitamin – A (Oral) 2 lac. (2ml)	22	100	-	-
		Hepatitis-B booster dose	22	100	-	-
2	5 Years	DPT 2nd booster dose	03	100	-	-
		Oral polio vaccine 5th dose	03	100	-	-
		Vitamin-A (Oral) 2lac. (2ml)	03	100	-	-
		MMR 2nd dose	03	100	-	-

These tables I, II, III depicts that the under five children under study was immunized up to age as per IAP schedule.

It highlights the optimal immunization coverage of children in Rural India.

**Table 4:** Factors of noncompliance of immunization from birth to five-year children

SN	Barriers	Present		Absent	
		Frequency	%	Frequency	%
1	Immunization has side effects	45	75	15	25
2	Reaction to the child during the previous dose	39	65	21	35
3	Lack of knowledge about subsequent immunization	33	55	27	45
4	Lack of knowledge about immunization	15	25	45	75
5	Lack of faith in effectiveness of immunization	15	25	45	75
6	OPV is the only immunization	10	17	50	83
7	Being a female child no need for immunization	3	5	57	95
8	Religious and traditional beliefs is against the immunization	3	5	57	95

The table IV highlights that, the major barrier for immunization was Immunization has side effects (45%), followed by 39 % viewed that Reaction to the child during

the previous dose is the significant barrier, similarly one third (33%) expressed that Lack of knowledge about subsequent immunization is the barrier for immunization.

**Table 5:** To find out the factors of noncompliance of immunization from birth to five-year children

SN	Barriers	Present		Absent	
		Frequency	%	Frequency	%
1	Lack of health education	51	85	09	15
2	Being afraid and concern about safety about immunization	41	68.3	19	31.67
3	Many times, vaccines are out of stock	12	20	48	80
4	Lack of supplies of vaccination	10	16.7	50	83.33
5	Community ‘& social pressure against immunization	2	3.33	58	96.67
6	Migration from one place to another for work	2	3.33	58	96.67
7	Poor communication from health worker	3	5	57	95
8	Lack of home visit by health worker	3	5	57	95

The table V highlights that, the major barrier for immunization was Lack of health education (51%), followed by 41 % viewed that being afraid and concern

about safety about immunization is the significant barrier, similarly (12%) expressed that many times, vaccines are out of stock is the barrier for immunization.

**Table 6:** To find out the factors of noncompliance of immunization from birth to five-year children

SN	Barriers	Present		Absent	
		Frequency	%	Frequency	%
1	Child was sick during vaccination time	53	88.3	07	11.67
2	Rescheduling of vaccines	46	76.7	14	23.33
3	Cost of vaccination is too high or poverty	36	60	24	40
4	vaccination centre is far away from the house	13	21.7	47	78.33
5	Fear of loss of work due to vaccination	09	15	51	85
6	Poor service by health worker	9	15	51	85
7	Lack of facilities	8	13.3	52	86.67
8	Long waiting time for immunization	7	11.7	53	88.33

The table VI highlights that, the major barrier for immunization was Child was sick during vaccination time (53%), followed by 46 % viewed that Rescheduling of vaccines is the significant barrier, similarly one third (36%) expressed that cost of vaccination is too high or poverty is the barrier for immunization.

**Section III: Comparison of noncompliance of immunization of under five-year children with the sociodemographic variables of parents**

**Table 7:** Comparison of Mean, SD, mean % of noncompliance of immunization scores according to age

SN	Age	Noncompliance of immunization		
		Mean	SD	Mean %
1	20-25 years	9	0.45	38
2	26-30 years	11	0.48	46
3	31-35 years	8	1.17	33
4	36 and more	9.3	1.1	39
	Overall	9.8	2.61	41

Comparison of mean, SD, mean % of noncompliance of immunization scores of under five-year children with regards to age of the parents shows that 26-30 years parents had higher mean noncompliance of immunization (11 ± 0.48) which is 46%. It can be interpreted that 26-30-year parents had a major barrier for immunization.

**Table 8:** Comparison of Mean, SD, mean % of noncompliance of immunization scores according to Gender of parents

SN	Gender of parents	Noncompliance of immunization		
		Mean	SD	Mean %
1	Male	9.5	2.6	40
2	Female	13	1.3	54
	Overall	9.8	2.61	41

Comparison of mean, SD, mean % of noncompliance of immunization scores of under five-year children with regards to gender of parents shows that female had higher mean noncompliance of immunization (13 ± 1.3) which is 54%. It can be interpreted that female had a major barrier for immunization.

**Table 9:** Comparison of Mean, SD, mean % of noncompliance of immunization scores according to Education of parents

SN	Education of parents	Noncompliance of immunization		
		Mean	SD	Mean %
1	No formal education	10.2	1.18	43
2	Primary	9.5	0.48	39
3	Secondary	9.6	1	40
4	Higher Secondary	9.7	0.9	40
5	Graduation	10	1.3	42
	Overall	9.8	2.61	41

Comparison of mean, SD, mean % of noncompliance of immunization scores of under five-year children with regards to Education of parents shows that illiterate parents had higher mean noncompliance of immunization (10.2 ± 1.18) which is 43%. It can be interpreted that illiterate parents had a major barrier for immunization.

**Table 10:** Comparison of Mean, SD, mean % of noncompliance of immunization scores according to Source of Information on Immunization

SN	Source of Information on Immunization	Noncompliance of immunization		
		Mean	SD	Mean %
1	TV/Radio	8	1.2	33
2	News paper	12	1.1	50
3	Health professionals	9.5	0.48	40
4	Friends and relatives	10.3	0.9	43
	Overall	9.8	2.61	41

Comparison of mean, SD, mean % of noncompliance of immunization scores of under five-year children with regards to Source of Information on Immunization shows that information from Newspaper had higher mean noncompliance of immunization (12 ± 1.1) which is 50%. It can be interpreted that information from newspaper had a major barrier for immunization.

**Table 11:** Association between noncompliance of immunization of under five-year children with the sociodemographic variables of parents

SN	Variables	χ <sup>2</sup>	Level of significance
1	Age	4.37	Significant
2	Gender	2.47	Not significant
3	Education	4.14	Significant
4	Occupation	2.18	Not significant
5	Monthly income	1.55	Not significant
6	Family type	1.24	Not significant
7	Source of Information on Immunization	2.26	Not Significant

df = 1, table = 3.84, p ≥ 0.05, not significant

**Discussion**

The study results showed that, with regard to Gender depicts that most (93%) was Mother and only 07% of them was Father. It was supported by Kane M, Lasher, that among the samples of his study (80%) was Mother [4].

The study results showed that, with regard to Age of care giver/Parent depicts that (43%) of the parents was in the age group of 20-25 years and (28%) was in the age group of 26-30 years. It was consistent with the study conducted by Priyanka J. (2015) [5] who also observed that highest percentage of parents mean age was 20-25 years [5].

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