

# To study the Knowledge regarding immunization schedule among parents and the source of information regarding vaccination

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## Abstract

**Background:** Immunization, the most cost-effective public health intervention, continues to be under-used. It is profoundly tragic that almost two million children still die each year from disease for which vaccines are available at low cost. The aim of study is to correlate parents knowledge practices and children immunization completeness. **Material & Methods:** A one year prospective cross-sectional study was carried out on children admitted in Pediatric ward of Kamla Nehru hospital, Gandhi Medical College, Bhopal. Total 240 cases as any of the six VPDS were studied according to a pre-designed proforma. Knowledge about vaccination, age, place and person were collected among parents and recorded along with the reason for non-vaccination. A comparison with trend five years back in the same hospital was done. **Result:** In present study the highest incidence was of TB 47.92% followed by tetanus, measles, diphtheria & neotetanus. Highest mortality is of tetanus neonatorum followed by tetanus, Diphtheria, Measles & tuberculosis in descending order, among 240 admitted patients. The incidence of VPDS was higher among unvaccinated child as compared to vaccinated child except tuberculosis where vaccination rate was higher (52.17%) and all VPDS were much common in illiterate fathers and mothers. **Conclusion:** There is a need to increase awareness and knowledge about the benefits and importance of vaccination, as well as the harmful consequences of non-complete immunization. A planned educational programme is needed; the educational level of the parents needs to be taken into consideration when the programme is planned, especially as regards those with a lower educational level.

**Keywords:** Immunization, VPDS, Knowledge

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## Introduction

The six vaccine preventable diseases kill, blind, cripple and cause mental damage to about ten million children worldwide each year, Immunization of children against serious communicable diseases is the most cost effective strategy to decrease overall morbidity and mortality among children [1]. In order to accomplish this strategy, high coverage of vaccination is essential to be maintained [2]. Immunization is one of the cost effective interventions to prevent a series of major illness. It prevents 2 million deaths per year worldwide and is widely considered to be "overwhelmingly good" by the scientific community. Vaccination coverage has now reached a plateau in many developing countries and even where good coverage has been achieved; reaching the children who were yet to be vaccinated has

proved difficult [3]. Factors such as knowledge, attitude and practices of parents contribute to success or failure of immunizations program. Information about knowledge, attitude and practices about immunization is lacking in developing countries [4].

VPDs contribute significantly to Under five mortality. In India Under five mortality is 68.8/ 1000 [5]. Routine immunization is one of the most cost effective public health interventions & was 1st introduced in India in 1978. Yet despite the concrete efforts of government & other health agencies, a large proportion of vulnerable infants & children in India remain unimmunized. India has the highest no. (approx. 10 million) of such children in the world [6]. National Family Health Survey (2005-2006) reports that only 43.5% of children in India received all of their primary vaccines by 12 months of

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age1. Main reasons identified for poor coverage includes inadequacy of community participation in Routine Immunization & IEC activities [7]. Therefore the study was carried out to assess the level of knowledge and attitude of mothers of Under Five children regarding VPDs & routine immunization & at the same time mothers can be motivated by updating their level of knowledge regarding the importance of immunization, as the mothers of Under Five children are very receptive to advice given by doctors & para-medical staff regarding the health of the child [7,8].

### Material and Methods

Total 240 cases as any of the six VPDS were studied according to a pre-designed proforma. Knowledge about vaccination, age, place and person was collected among parents and recorded along with the reason for non-vaccination. A comparison with trend five years back in the same hospital was done.

**Study design**– A prospective cohort observational study.

**Settings**- Kamla Nehru hospital, Gandhi Medical College, Bhopal, MP.

**Inclusion criteria**- Age less than 6 years, six vaccine preventable diseases – tuberculosis, diphtheria, pertusis,

tetanus, polio, measles admitted in pediatric ward were selected.

**Exclusion criteria**- Age more than 6years, outside admission, other vaccine preventable diseases.

**Technique**: The relevant information were collected from parents of the children by questionnaire method on a pre-designed proforma.

**Data collection**: Detailed information regarding age, sex, religion, locality, month of admission, immunization status of the patient, source of vaccination, history of contact with tuberculosis and measles, clinical presentation and knowledge and practices of parents regarding immunization were recorded. Finally, the result that whether the patient was relieved or absconded or left against medical advice (LAMA) or expired was recorded. Regarding Tetanus neonatorum, the information about the immunization of mother with two doses of tetanus toxoid, place of delivery, cord care practices, clinical presentations, etc. were recorded. These data were finally depicted in the tabular form observation section.

**Statistical Analysis**- odds ratio and log odd ratio with chisquare test of significance were used for statistical analysis of data. Statistical test of significance was defined as  $p < 0.05$ .

### Results

Total 240 cases as any of the six VPDS were studied according to a pre-designed proforma. Knowledge about vaccination, age, place and person were collected among parents and recorded along with the reason for non-vaccination. A comparison with trend five years back in the same hospital was done.

**Table-1: Total admission and deaths in VPD during study period.**

Disease	Total Admission		Total Deaths		% Mortality	
	Present	Previous	Present	Previous	Present	Previous
TB	115	153	5	15	4.3	9.8
Measles	29	55	2	06	6.9	10.9
Diphtheria	29	2	12	09	41.38	40.9
Tetanus	43	45	18	09	41.86	20
Neonatal tetanus	24	14	12	07	50	50
<b>Total</b>	<b>240</b>	<b>289</b>	<b>79</b>	<b>36</b>	<b>20.4</b>	<b>12.45</b>

Above table show that in present study the highest mortality is of tetanus neonatorum followed by tetanus, Diphtheria, Measles & tuberculosis in descending order and it also shows that in previous study the highest mortality are of Tetanus Neonatorum followed by Diphtheria, Tetanus, Measles and tuberculosis in descending order.

**Table-2: Incidence rate of VPDS during study period.**

Disease	Total cases		Incidence (%)	
	Present	Previous	Present	Previous
TB	115	153	47.92	52.90
Measles	29	55	12.08	19.00
Diphtheria	29	22	12.08	07.65
Tetanus	43	45	17.92	15.50
Neotetanus	24	14	10	4.84

Above table shows in present study that out of all VPDS highest incidence was of TB 47.92% followed by tetanus, measles, diphtheria & neotetanus. Total Admission VPDS = 240.

And In previous study, out of all VPDS highest incidence was of TB followed by Measles, tetanus, Diphtheria and Tetanus Neonatorum. Total Admission VPD = 289

**Table-3: Immunization status wise distribution of VPDS during study period.**

Disease	Total	Vaccinated	%	Unvaccinated	%
TB	115	60	52.17	55	47.83
Measles	28	2	6.9	27	93.1
Diphtheria	29	5	17.24	12	41.38
Tetanus	43	5	11.63	38	88.37

Above mentioned table shows that the incidence of VPDS was higher among unvaccinated child as compared to vaccinated child except tuberculosis where vaccination rate was higher (52.17%)

**Table-4: Distribution of cases in relation to maternal education.**

Disease	Illiterate	Primary	High school	College	Total
TB	94	19	2	0	115
Measles	24	5	0	0	29
Tetanus	38	5	0	0	43
Diphtheria	17	12	0	0	29

The above table shows that all VPDS were much more common in illiterate mothers.

**Table-5: Distribution of cases in relation to paternal education.**

Disease	Illiterate	Primary	High school	College	Total
TB	74	22	14	5	115
Measles	20	7	2	0	29
Tetanus	36	5	2	0	43
Diphtheria	17	10	5	0	29

The above table shows that all VPDS were much common in illiterate fathers.

**Table-6: Source of information regarding vaccination.**

Informer	Percentage
Health worker	88%
Self	22%
Medical practitioner	32%
Relatives	12%
Neighbours	28%
Media	26%

Above table shows that highest source of information regarding vaccination are health workers followed by medical practitioners, neighbours, media then self and relatives.

**Table-7: Reason for non- vaccination.**

Reason for non- vaccination	Percentage
Lack of knowledge about vaccination, time and place of vaccination	92%
Wrong idea when to vaccinate the child	36%
No faith in vaccination	21%
Time not available	18%
Place of vaccination	64%
Vaccinator not present	78%
Child illness	26%
No male member to take for vaccination	38%
Apathy	42%

Above table shows that highest reason for non vaccination is Lack of knowledge about vaccination, time and place of vaccination, followed by wrong idea, no faith in vaccination and availability of time.

## Discussion

It is widely accepted that childhood immunization programs have played a great part in the prevention of many diseases; hence, vaccination coverage is an indirect way to assess child health care from the point of view of public health [9]. Eighty percent of the parents were unaware that not all the vaccines are administered under the national program and there are few vaccines which are in the recommended immunization schedule and need to be taken in addition to the routine vaccines. Similar results were seen by Inamder et al in Madhya Pradesh and Angelillo et al in Italy [10,11].

Among those who have heard about the vaccine, more than half were not aware of the diseases against which the vaccine confers protection. These results are similar to the studies by Mony PK et al and Mapatano MA et al where awareness regarding vaccine availability was moderate, but the knowledge regarding dosage schedule and diseases prevented was low [12,13]. Though 40% parents have heard about cervical cancer vaccine, only 15% of them had knowledge regarding the vaccine and knew about the human papilloma virus. Similar results have been shown by Tang CW et al in Taiwan where only 13% had heard of the HPV vaccine [14].

There were many misconceptions regarding vaccine efficacy and duration of protection. Respondents were noted to be not well aware of the possible side effects of vaccines, with the exception of fever (46%), redness (22%) and pain (23%). Seizures though uncommon is an important side effect which only a meagre percent of the parents (1%) are aware of. Similar results were obtained by the EKOS research associates, Inamder et al and Tang CW et al [14,15].

92% of our patients have Lack of knowledge about vaccination, . In the study by EKOS research associates, most parents are confident in the safety of childhood vaccines, with 65% of parents rating them as highly safe, 30% rating them as moderately safe and very few saying that they are unsafe [16].

In the present study health workers are common source of information followed by medical practitioners, and neighbours. In contrast physicians are a main source of information regarding immunization accounting to 55%. Internet (14%), pamphlets at hospital (11%) and friends (13%) were the next main source of information in a study [15]. Ekos research associate showed that parents rely mostly on Internet (63%) and physicians (54%). Coniglio MA et al, Angelillo et al and Inamder et al also showed that most parents sought information about vaccines from the physicians [17].

Thirty six percent of the parents have wrong idea when to vaccinate the child. In a study conducted by Center for health services research and development, Armenia, most of the parents indicated that they trusted the vaccines provided at public facilities more than the vaccines in private facilities [18].

In our study all VPDS were much more common in illiterate mothers and fathers same as study done by Jamman et al [19] they were found that the knowledge score was lower in those women with a compromised educational standard. It is a truism that knowledge increases with education. It is however, questionable whether those more informed women actually received their information from health professionals [19].

In a study done by Jose et al [20] there was a significant association between knowledge and exposure to mass media in relation to immunization among mothers of under five children as the calculated value is more than the table value at 0.05 level of significance. A cross sectional study was conducted to assess the awareness

& knowledge of mothers of Under Five children regarding Immunization. The main sources of information on immunization was obtained from Anganwadi Worker (47%) & Television (35%) [20].

## Conclusion

The present study highlighted the knowledge of mothers on immunization. A better understanding of health issues associated with the immunization constituted a challenge for clinician and researchers. So there is a great lot scope for exploring this area. Research should be conducted to identify the attitude and practice of mothers on immunization. Low literacy level of mothers is a matter of worry. Some of them don't know about the diseases for which their child is being immunized, So there is a dire need to arrange for health education program sessions for mothers of Under five children with main emphasis on importance of vaccination & Vaccine Preventable Diseases (VPDs).

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