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Assessment and Correlation of the Knowledge, Attitude and Practices in Vaccination of Children Based on Mothers Educational Status



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ABSTRACT

Background: Childhood immunization practically guarantees protection from several diseases. Since mothers are the significant health decision makers of their child, their knowledge, attitude and practice concerning immunization and their educational status in overall have a excessive impact in the immunization status of their children. **Objectives:** The objectives of this study were to assess and evaluate mothers knowledge, attitude and practice of immunization and to make a correlation between these factors and vaccination status of their child. This study also purposes to establish a relation between educational level of mothers and immunization status of their child. **Methods:** This is a Prospective, Cross sectional study performed among a total sample of 123 mothers were enrolled in the study and was conducted in the ESI hospital, Indiranagar, Bangalore for a period of 6 months. Mothers who approach the outpatient department of hospital to vaccinate their children were interviewed by a self-designed questionnaire for assessing Knowledge, Attitude and Practice (KAP) related to vaccination of their children. Each mother was assessed with their Knowledge, Attitude and Practice by giving specific scoring to selected questions in the questionnaire. **Results:** Even though maximum number of the mothers had satisfactory knowledge, attitude and practice, almost 3.45% children were recognized as un-immunized partially immunized. Educational status of mothers was recognized as an autonomous factor in the determination of their children's vaccination status. There is a serious need for expansion of the coverage of **UIP (Universal Immunization Programme)** vaccines and there is a immediate need to arrange for health education program sessions for all the parents concerning the importance of complete adherence of vaccination among children. Modern way of communication aids like TV, newspaper and other Medias can also be promoted for spreading educational messages regarding vaccination. **Conclusion:** Health professionals play a major role in making both Immunization responsiveness and administration in prescribed date to mothers making an allowance for mothers Good knowledge and good attitude, health education on immunization is emphasize to improve their practices.



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1. INTRODUCTION

Vaccination is the administration of a vaccine to boost the development of immune system for the protection from a disease. Vaccines are introduced into the body helps us to prevent infection or to control disease due to a particular pathogen - a disease causing organisms, such as a virus, bacteria or parasite. The vaccine imparts the body how to defend itself against the pathogen by creating an immune response^[1]. Vaccines comprise a microorganism in a weakened or killed state or proteins or toxins from the organism. By stimulating the body's adaptive immunity, vaccines help to prevent sickness from an infectious disease^[2].

It is undisputable that vaccines are essential part of health system, which has been showed on the basis of their success in controlling many diseases in several countries in the world. Defence or protection from infectious diseases is one of the utmost benefits that any country can offer to its population^[3]. Childhood immunization virtually guarantees protection from many major diseases. It avoids 2 million deaths per year worldwide and is widely considered seriously by the scientific community^[4]. Immunization of infants and young children contrary to serious infectious diseases is among the most successful and cost-effective interventions in preventative health care. The success of these programs depends on adequately high attention to maintain immunity^[5].

With the help of **India's Universal Immunisation Programme (U.I.P.)** which is launched by the Government of India in 1985, an abrupt change occurs in terms of quantities of vaccine used, the number of beneficiaries, the number of Immunization session organized, and the geographical spread and diversity of areas covered. With the UIP, significant achievements have been achieved in preventing and controlling seven vaccine-preventable diseases (VPDs) such as Diphtheria, Polio, Measles, Pertussis, Tetanus, Hepatitis B and Tuberculosis^[6]. Since mothers are the vital health decision makers of their children, their Knowledge, Attitude and Practices regarding immunization in general have a great influence on immunization status of their child^[7,8].

Numerous studies on immunization status of children conducted in several countries have revealed that growing of parents knowledge regarding vaccination improves immunization status and affects success of immunization programme. Education status and other socioeconomic position of parents have a great impact on their decision concerned for vaccination. Therefore, this study aims to assess parent's knowledge, attitude and practice

towards vaccination and to correlate these influences with vaccination status of their child in order to improve and increase vaccination coverage and completeness ^[9].

2. AIM AND OBJECTIVES

Aim: To assess the knowledge, attitude and practice concerning immunization of children based on mothers educational status.

Objectives: Knowledge, Attitude and Practice regarding vaccination of each mother was assessed by giving scores to their response to selected question and was compared with their education status and adherence of child to vaccination.

3. METHODOLOGY

Study Design: It is A Prospective, Observational and Cross Sectional study.

Study Period: The Present study was conducted for a period of Six months from October 2018 to March 2019.

Study site: The Present study was conducted in ESI hospital, Indiranagar, Bangalore.

Sample size: The Out Patients who came for the hospital during the study period of six months for vaccination [N=123 Patients.]

Study Criteria:

Inclusion criteria

- The mothers and caretakers of children who are willing to participate in the study.

Exclusion criteria

- Mothers and care takers of children who are not willing to Participate in the study.

Source of Data:

All the mothers satisfying the inclusion criteria, all the required data was collected from mothers through personal interview by using a self-designed questionnaire.

Method of collection of data

All the patients satisfying the inclusion criteria were selected from outpatient department in ESI hospital, Indiranagar. After thoroughly explaining the study methodology to the subjects and included in the study. Informed Consent was taken from each patient, the necessary information was collected by interviewing parents or caretakers using the following annexures, Consent form, Data collection form, Questionnaire etc.,

Statistical tools: Prism Graphic Pad and Microsoft Excel were used to analyse the results.

4. RESULTS

A total of 123 mothers were enrolled in the study. Among children enrolled in study sample include 68 (55.28%) males and 55 (44.71%) females.

Table 1: Immunisation status among children

Immunisation Status	Male		Female	
	Number	Percentage%	Number	Percentage %
Immunised	57	83.82%	43	74.14%
Partially immunised	11	16.18%	10	17.24%
Non-Immunised	0	0%	2	3.45%
Grand total	68	100%	55	100%

A total of 94 (74.8%) children were identified with complete adherent with vaccination, whereas 51(75%) male and female 39 (70.9%) were completely adherent. Male children show slight increase in the complete immunisation while compared with girl children.(Table 1).

Table 2: Details of mother’s education

Mothers’ Education	Number	Percentage
Illiterate	4	3.25%
Literate (up to secondary education)	98	79.67%
Literate (diploma, graduate, post graduate)	19	15.45%
Did not divulge	2	1.62%

Out of 123 mothers interviewed, majority of the mothers had high school certificate 46(37.39%), followed by 25 (20.33%) with higher secondary school education, 24 (19.51%) with upper primary education, 4 (3.25%) Diploma and 3 (2.44%) with Lower primary education. There were only 8 (6.5%) and 7 (5.69%) mothers with Graduation and Post-Graduation, respectively. 2 (1.62%) mothers refused to divulge their education status, while, 4 (3.25%) mothers were illiterate (**Table 2**).

Table 3: Social characteristics of the study population

Characteristics		Number	Percentage (%)
Decision maker (in matters of immunization of children)	Father	19	15.48%
	Mother	89	72.35%
	Both	25	20.32%
Source of information for immunization programme.	Radio	12	9.75%
	Television	43	34.96%
	Health institution	68	55.28%
Socio-economic status of families	<5000 INR/month	31	25.2%
	5001-10,000	81	65.85%
	>10,000	11	8.9%

(Table 3) shows some of the social characteristics of mothers. Majority of the mothers(72.35%) themselves took decisions regarding immunization of the child. Health workers were the main source of information (55.28%).

Table 4: Basic knowledge of mothers concerning the use of vaccination

Answers	No. of respondents	Percentage
Used to prevent disease	87	70.73%
Used for treatment	23	18.69%
Don't know much about it	13	10.57%

Mothers were interviewed using a self-designed questionnaire about their knowledge, attitude and practices associated to vaccination of their children.

The first question was to assess mother's basic knowledge concerning the use of vaccination. Total 110 (89.43%) mothers said that they were conscious of the use of vaccination, in which majority of them (87, 70.73%) opted the correct answer that vaccination can prevent illness (Table 4).

Table 5: Knowledge of mothers about different types of vaccine

Type of Vaccine	No. of respondents	Percentage
BCG	58	47.15%
OPV	110	89.43%
MMR	47	38.21%
Pneumonia	1	00.8%
DPT	13	10.57%

Third question enquired mother's knowledge about different types of vaccination that their children should be vaccinated. Maximum mothers (110,89.43%) are aware of Oral Polio

Vaccine (OPV). Knowledge about BCG, MMR, Pneumonia, DPT are 58 (47.15%), 47(38.21%), (1,00.8%) and (13,10.57%) respectively (Table 5).

Table 6: Mothers opinion about the benefit of vaccination

Answers	No. of respondents	Percentage
Beneficial	91	73.98%
Not necessary	32	26.02%

Second question was asked about whether they feel vaccination is beneficial to their children. Among 123 mothers, majority 91 (73.98%) of mothers replied that they feel vaccination is beneficial to their children for the prevention from various diseases and for better health. Few mothers (32, 26.02%) said they don't feel vaccination is not much necessary (Table 6).

Question K2 was to assess the knowledge of mothers regarding when the first vaccination should be administered. Among 122 (85.31%) mothers who all said that they were aware about vaccination schedule, most of them, 115 (94.22%) provided the correct answer that vaccination should be started from birth (Table 4). Next K3 question enquired if the mothers knew that their children should be vaccinated.

Mother's knowledge about different types of vaccination

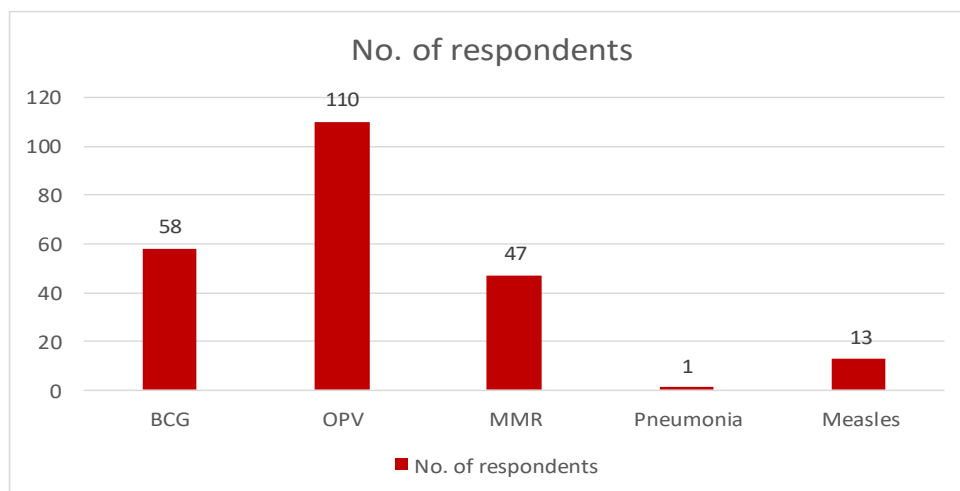


Figure 1: Awareness of mothers about different types of vaccine

Fourth question was asked did they believe vaccines can be harmful to children. Mothers are responded in No (95, 77.23%), Yes (17,13.82%) and in some cases(11,89.43%).

Table 7: knowledge of mothers regarding booster dose.

Response received	Number	Percentage (%)
Gives More Protection	58	89.23%
Given to Cover Up the Missed Vaccine.	7	10.78%

The last knowledge question analysed mothers’ knowledge regarding booster dose. Only 65 mothers (52.85%) were aware of booster dose. Out of 65 respondents, majority 58 (89.23%) said that booster dose gives more protection against diseases.

Table 8: Immunisation related attitude of mothers

Questions	Respondents Answers	Number	Percentage (%)
Are you in favour of vaccination?	Yes	119	96.75%
	No	4	3.25%
Is it important to follow vaccination schedule	Yes	119	96.75%
	No	4	3.25%
Why on schedule?	As advised by health instructors	123	100%
Where should children preferably receive vaccination?	Government health institution	123	100%
	Private health facility	-	-
Are side effects dangerous?	No	123	100%
	Yes	-	-

Most of the mothers considered that vaccination is important and should be completed as per schedule, as per the instructions of the health workers. All (100%) mothers believed that vaccination should be done in Govt. health facility. All the mothers responds that the side-effects not dangerous (**Table 8**).

Table 9: Questions related to Immunisation Practices of mothers.

Questions	Answers of respondents	Number	Percentage (%)
Immunisation status			
Completely immunized		100	81.13%
Partially immunized		21	17.07%
Unimmunised		2	1.6%
Was immunisation completed on schedule	Yes	119	96.75%
	No	4	3.25%
Did side effects appear?	Yes	83	67.48%
	No	40	32.52%
What side effects?	Fever	102	82.93%
	Swelling, pain, Redness	21	17.07%
Did you receive Tetanus Toxoid during pregnancy?	Yes	123	100%
	No	0	0%
Did you receive it as per schedule?	Yes 279	116	94.3%
	No	7	5.7%
Number of doses received	2	103	83.74%
	3	20	16.26%

Table 9 depicts the practices of mothers. Hundred children were completely immunized and 81.13% had been immunized on schedule. 17.07%, 1.6% children were partially immunizationised and non immunised respectively. Diverse reasons were given for not finishing the immunization on schedule including unawareness, baby was sick, uncooperative husband or busy in house-hold work. All the mothers had received T.T during pregnancy and 16.26% had received 3 doses.

5. DISCUSSION

In our study, 81.13% of children were fully immunized. Zelaya et al in his study has warned that a positive attitude is not a guarantee for full immunization^[10]. But in our study it was seen that not only mothers had positive attitude but their practices were also appreciating.

It was also seen that immunization statuses of the children were slightly associated with their genders. This was similar to the findings of the study done by AM Kadri et al.,^[11] who found that though the coverage of all vaccines was slightly higher in males than in females. In the present study, it was found that immunization status was significantly associated with other factors such as maternal education and socio-economic status. This was similar to the findings of study done by Bholanath et al.,^[12] that found that maternal education and socioeconomic status were significant independent predictors of immunization status. 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.

In our study, Educational level of mothers was identified as an dependent factor in the determination of child's vaccination status. Adherence towards vaccination of children were more sounded in those children whose mothers are lower primary and diploma educational status. Fewer adherences were identified with mothers who are less educated. This result is similar with study conducted by Abdulraheeman IA et al., to identify the reasons for incomplete vaccination and factors for missed opportunities among rural Nigerian children, which found that there is an association between mothers' education status and missed opportunities of vaccination^[11].

Our findings are consistent with the findings of study conducted by Nath B et al.,^[13] to determine the knowledge, attitude and practice about immunization among respondents of children aged 12-23 in Lucknow which found that health workers and the health personnel were the major sources (78%) of information regarding immunization. It is heartening to note that doctors are responsible for informing a majority of respondents about immunization but a need exists to work further in this area. In the current study, mass Medias were also seen as a contributing source of information (44,71%) regarding vaccination to the study population. This result shows resemblance to the study conducted by Al-Zahrani J et al.,^[14] to assess parental knowledge and attitude regarding vaccination and their effects on vaccination

practice, in which the media is noted to be a strong source (43.7%) for providing awareness among the respondents about immunization^[14]. Television and other Medias can be a good source to promote immunization and results of our study point out a need to further utilization of these sources.

Jose et al.,^[15] conducted a study on Consciousness on Immunization among Mothers of under five Children in designated hospital at Mangalore. Overall result had shown that 10.57% of mothers had poor knowledge, 18.69% of mothers had average knowledge, 23.4% of mothers had good knowledge and 70.73% mothers had excellent knowledge. In a study by Kapoor et al^[16] it was found that awareness and knowledge about VPDs increases with education status of mothers.

In this study, we surprisingly found that 16.26% of mothers had received 3 doses of T.T during pregnancy. This may be attributed to deprived memory of mothers or incorrect knowledge and practices of the prescribing doctors. There is a necessity to educate doctors in this area since they are found to be imperfect in knowledge about immunization. The percentages reported in this study were lower than that reported by M.C. Singh et al^[17] in Wardha where the corresponding percentages for DPT/OPV were 60% and 45% for measles.

Our findings are reliable with the findings of M.C. Singh et. Al^[17] who found that health workers and the health personnel were the main sources of information concerning immunization (55.28%) followed by and mass media like television (34.96%) and radio (9.75%). N.Gulati et al^[18] in their study in Delhi also found that the most significant source of information was the health staff.

6. CONCLUSION

Vaccination is the cost-effective precautionary intervention yet the benefits of immunization is not reaching to several children who are at the supreme risk of the diseases preventable by these vaccines. The mothers has outstanding knowledge on immunization of their children up to 1st booster. The reason for 100% immunization exposure up to 18 months is because of the motivational schemes. The knowledge on antenatal vaccination was reasonable but there is need to generate awareness to others regarding vaccines such as BCG, OPV, MMR. Approximately 80% of the mothers are aware of vaccination and the need for protection of the child whereas rest of mothers needs awareness. Overall 20% of mothers are not conscious that immunization can be done during minor ailments such as common cold, fever, mild

diarrhoea etc. and after slight adverse reactions such as fever, swelling, etc. Health professionals play a major role in making both Immunization responsiveness and administration in prescribed date to mothers. In spite of awareness through numerous sources, knowledge on special vaccination to mothers is not impressive. Initiative programme has to be reserved to overcome this.

SUMMARY AND RECOMMENDATIONS

- The inadequate knowledge of the people requires sincere efforts on the part of the health professionals and the policymakers to plan and implement the IEC (information, education & communication) initiatives.
- There should be also systematic CMEs for improving the knowledge of doctors and the paramedical staff.
- It is also recommended that health education campaigns should explicitly target mothers to achieve the targets of UIP.
- Moreover, the role of media in providing information needs to be improved. Summarising, the health personnel at the primary level, mass media and other means of IEC activities should be connected to the maximum extent so as to upsurge the knowledge and change the attitude regarding immunization among people especially mothers.

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Ethical approval: The study was approved by the Institutional Ethics Committee.

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