

## Parental Concerns and Attitudes towards Immunization

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**Abstract:** Parents knowledge, attitudes and socio demographic variables influence immunization seeking behaviour for their children. The Aim of this study is to evaluate the Parental concerns and attitudes towards immunization in relation to educational status, socio economic background and employment status. 125 Volunteering Parents and care giver respondents of children admitted in the Pediatric ward of Maharajah's Institute of Medical Sciences, Nellimarla were evaluated on a Checklist of 15 statements of attitude towards immunization. They were then analysed to assess the influence of education, employment, religion, sex, place of residence and socio economic status in shaping these attitudes. Analysis of the results showed that concerns and attitudes of the parents are significantly influenced by their level of education, occupation and socioeconomic status but not by religion, sex or place of residence. Parents believe immunization is safe, effective and are not overly concerned about side effects or pain or autism. However they feel the need for greater sharing of information from professionals. The study showed that parental attitudes to immunization are influenced by education, employment and socio economic status. Parents believe immunization is good, safe and effective for preventing diseases in childhood.

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### I. Introduction

Immunization which has greatly reduced the burden of infectious diseases prevents illness, disability and death from vaccine preventable diseases including Measles, Pertussis, Diphtheria, Polio, Rubella and Tetanus<sup>1</sup>. Immunizing a child significantly reduces costs of treating diseases, thus providing a healthy childhood and reducing poverty and suffering. Immunization prevents an estimated two to three million deaths each year from Diphtheria, Tetanus, Pertussis (Whooping Cough) and Measles according to UNICEF (2014)<sup>2</sup>.

Parents' knowledge about immunization and their attitudes towards them are likely to influence uptake. Previous studies revealed misconceptions on parents' knowledge and negative attitudes towards childhood immunization such as fear from vaccination was found to significantly affect the uptake of immunization for their children. Mothers' knowledge about vaccination was found to be quite low and their educational status was significantly associated with the child's coverage. Greater concerns about the safety of vaccines was expressed by older patients, residents of towns and highly educated individuals<sup>1</sup>.

It is important to understand the variables that influence parental decisions to vaccinate their children. Therefore, we conducted a study to determine the concerns and attitudes of parents towards immunization and the factors which greatly influence the decision making process of accepting immunization coverage, such as educational status, occupation, socioeconomic status, locality of residence, religion and sex of the child.

### II. Materials and Methods

This study was conducted between August and December 2017 among 125 parents of children aged 6 years or less admitted in paediatric inpatient ward of Maharajah's Institute of Medical Sciences, Nellimarla. In order to assess concerns and attitudes of parents towards immunization of their children, a Survey Questionnaire has been used which is adopted from the study done by Chow et. al.<sup>11</sup>. It consists of 15 questions assessing the concerns and attitudes of parents towards immunization of their children. Questions are scored as follows: 1 for answer in favour of question and 0 for answer against to the question. Details of the questionnaire is shown in table 1. Along with the survey questionnaire, a semi structured proforma to record the socio-demographic details of the parents which includes Name of the respondent, age, relationship to the child, education, occupation, religion and address and details of the child such as name, age, sex is also used which is shown in

the table 2. Data obtained is statistically analysed using SPSS to determine the significance of differences between the variables studied such as education, occupation, socioeconomic status, locality of residence, religion of the parents and sex of the child.

**TABLE 1 CHECK LIST OF PARENTAL CONCERNS & ATTITUDES TOWARDS IMMUNIZATION**

1. I vaccinate my child to protect him/her
2. I believe that vaccinations are safe for children in general
3. I am confident in information provided by healthcare professional
4. I am satisfied with amount of information provided by healthcare professional
5. I vaccinate my child to help protect the wider community
6. I am concerned about the distress to children of the injection itself
7. I am concerned about the increased number of vaccines recommended for children
8. I am concerned that vaccines are not tested enough for safety
9. I am concerned that children get too many vaccines during the first two years of life
10. I am concerned that child's immune system could be weakened by vaccinations
11. I am concerned that vaccines can cause autism in healthy children
12. I am concerned that vaccines are given to children to prevent diseases that they are not likely to get
13. I prefer children to get natural immunity from the diseases rather than immunity from vaccines
14. I am concerned that vaccines are given to children to prevent diseases that are not serious
15. Vaccinations are not needed because others have vaccinated their children and diseases have been controlled

**TABLE 2 SOCIO-DEMOGRAPHIC PROFILE**

S. N	Respondant Mother/Father/Other	Name	Age	Education	Occupation	Religion	Socio Economic Status	Address	Child's Name	Child Age	Child Sex

### III. Results

This cross-sectional study was done between August and December 2017 which involved 125 respondents of whom majority (72%) of the respondents are fathers, while mothers are 22.4% and other caretakers are 5.6%. Majority of the respondents are living in rural areas (74.4%), while 13.6% are living in semi-urban areas and only 12% are living in urban areas. The level of education within the group varied as well. 41.6% of the respondents studied secondary school education or higher, while 58.4% studied lower than the secondary school education and illiterates. 35.2% of the respondents are employed while 64.8% are unemployed. Majority (96.4%) of the respondents belong to Hindu religion while only 3.2% are Christians. 54.4% of the respondents have a male child while 45.6% has a female child. 71.2% of the respondents belong to middle socioeconomic status, while 26.4% belong to low socioeconomic status and only 2.4% belong to high socioeconomic status.

Analysis of the results showed that concerns and attitudes of the parents are significantly influenced by their level of education, occupation and their socioeconomic status, while their locality of residence, religion and sex of their child has a minimal influence. Table 3 shows the response given by the parents or caregivers to the study questionnaire in the form of yes or no response. Table 4 shows that education has significant impact on the concerns and attitudes of the parents towards immunization, also influences decision making regarding immunization. Table 5 shows that there is a significant variation in the level of understanding and concern about the importance of immunization among employed parents and unemployed. Table 6 shows that socioeconomic status of the family play a significant role in the attitudes of parents towards immunization.

**Table 3. Response of the parents to the study questionnaire**

Variables	Yes (%)	No (%)
1. I vaccinate my child to protect him/her	114 (91.2%)	11 (8.8%)
2. I believe that vaccinations are safe for children in general	113 (90.4%)	12 (9.6%)
3. I am confident in information provided by healthcare professional	39 (31.2%)	86 (68.8%)
4. I am satisfied with amount of information provided by healthcare professional	43 (34.4%)	82 (65.6%)
5. I vaccinate my child to help protect the wider community	79 (63.2%)	46 (36.8%)
6. I am concerned about the distress to children of the injection itself	44 (35.2%)	81 (64.8%)
7. I am concerned about the increased number of vaccines recommended for children	35 (28%)	90 (72%)
8. I am concerned that vaccines are not tested enough for safety	35 (28%)	90 (72%)

9.I am concerned that children get too many vaccines during the first two years of life	49 (39.2%)	76 (60.8%)
10.I am concerned that child's immune system could be weakened by vaccinations	38 (30.4%)	87 (69.6%)
11.I am concerned that vaccines can cause autism in healthy children	16 (12.8%)	109 (87.2%)
12.I am concerned that vaccines are given to children to prevent diseases that they are not likely to get	51 (40.8%)	74 (59.2%)
13.I prefer children to get natural immunity from the diseases rather than immunity from vaccines	84 (67.2%)	41 (32.8%)
14.I am concerned that vaccines are given to children to prevent diseases that are not serious	62 (50%)	62 (50%)
15.Vaccinations are not needed because others have vaccinated their children and diseases have been controlled	53 (42.4%)	72 (57.6%)

High percentage YES response of items in the first 2 indicates that parents believe Vaccination is safe for the child, and it would protect them. However 3rd & 4th items have high NO's showing information sharing by professionals is inadequate. 5,6,7,8,9 indicate they are not too worried about pain of injection or more vaccines and their safety. Similarly 10 and 11 indicate immune system damage and autism fears are not prominent. However 12, 13, 14, 15 indicate that there are some who prefer natural immunity and have some doubts regarding vaccines.

To summarize, Table 3 shows that majority of the parents have positive attitude towards the immunization but they are not satisfied with the information they have about the immunization and majority are not confident of the information they have.

**Table 4. Impact of education on parental concerns and attitudes towards immunization**

	Less than 10 <sup>th</sup> std. (No/Yes)	More than 10 <sup>th</sup> std. (No/Yes)	p-value
C1	11 (15.1%) / 62 (84.9%)	0 (0%) / 52 (100%)	0.003
C2	12 (16.4%) / 61 (83.6%)	0 (0%) / 52 (100%)	0.001
C3	39 (53.4%) / 34 (46.6%)	0 (0%) / 52 (100%)	0.000
C4	40 (54.8%) / 33 (45.2%)	3 (5.8%) / 49 (94.2%)	0.000
C5	46 (63.0%) / 27 (37.0%)	0 (0%) / 52 (100%)	0.000
C6	29 (39.7%) / 44 (60.3%)	52 (100%) / 0 (0%)	0.000
C7	49 (67.1%) / 24 (32.9%)	41 (78.8%) / 11 (21.2%)	0.164
C8	50 (68.5%) / 23 (31.5%)	40 (76.9%) / 12 (23.1%)	0.321
C9	24 (32.9%) / 49 (67.1%)	52 (100%) / 0 (0%)	0.000
C10	59 (80.8%) / 14 (19.2%)	45 (86.5%) / 7 (13.5%)	0.39
C11	64 (87.7%) / 9 (12.3%)	45 (86.5%) / 7 (13.5%)	0.85
C12	30 (41.1%) / 43 (58.9%)	44 (84.6%) / 8 (15.4%)	0.000
C13	27 (37.0%) / 46 (63.0%)	14 (26.1%) / 38 (73.9%)	0.238
C14	19 (26.0%) / 54 (74.0%)	43 (82.7%) / 9 (17.3%)	0.000
C15	28 (38.4%) / 45 (61.6%)	44 (84.6%) / 8 (15.4%)	0.000

Items C1 to C6, C9, 12, 14 showed statistical significance across the two groups of below 10th and above 10th education in Table 4.

**Table 5. Impact of occupation on parental concerns and attitudes towards immunization**

	Unemployed (No/Yes)	Employed (No/Yes)	p-value
C1	11 (13.6%) / 70 (86.4%)	0 (0%) / 44 (100%)	0.01
C2	12 (14.8%) / 69 (85.2%)	0 (0%) / 44 (100%)	0.007
C3	33 (40.7%) / 48 (50.3%)	6 (13.6%) / 38 (86.4%)	0.002
C4	36 (44.4%) / 45 (55.6%)	7 (15.9%) / 37 (84.1%)	0.001
C5	39 (48.1%) / 42 (51.9%)	7 (15.9%) / 37 (84.1%)	0.001
C6	44 (54.3%) / 37 (45.7%)	37 (84.1%) / 7 (15.9%)	0.000
C7	55 (67.9%) / 26 (32.1%)	35 (79.5%) / 9 (20.5%)	0.16
C8	59 (72.8%) / 22 (27.2%)	31 (70.5%) / 13 (19.5%)	0.77
C9	39 (48.1%) / 42 (52.9%)	37 (84.1%) / 7 (15.9%)	0.000
C10	167 (82.7%) / 14 (17.3%)	37 (84.1%) / 7 (15.9%)	0.84
C11	72 (88.9%) / 9 (11.1%)	37 (84.1%) / 7 (15.9%)	0.443
C12	41 (50.6%) / 40 (49.4%)	33 (75%) / 11 (25%)	0.008
C13	29 (35.8%) / 52 (64.2%)	12 (27.3%) / 32 (72.7%)	0.332
C14	31 (38.3%) / 50 (62.7%)	31 (70.5%) / 13 (19.5%)	0.001
C15	37 (45.7%) / 44 (54.3%)	35 (79.5%) / 9 (20.5%)	0.000

**Table 6. impact of socioeconomic status on parental concerns and attitudes towards immunization**

	LOW (No/Yes)	MIDDLE (No/Yes)	HIGH (No/Yes)	P value
C1	11 (33.3%) / 22 (66.7%)	0 (0%) / 89 (100%)	0 (0%) / 3 (100%)	0.000
C2	10 (30.3%) / 23 (69.7%)	2 (2.2%) / 87 (97.8%)	0 (0%) / 3 (100%)	0.001
C3	10 (30.3%) / 23 (69.7%)	74 (83.1%) / 15 (16.9%)	2 (66.7%) / 1 (33.3%)	0.000

C4	16 (48.5%) / 17 (51.5%)	63 (70.2%) / 26 (29.8%)	3 (100%) / 0 (0%)	0.028
C5	26 (78.8%) / 7 (21.2%)	20 (22.5%) / 69 (77.5%)	0 (0%) / 3 (100%)	0.000
C6	7 (21.2%) / 26 (78.8%)	71 (79.8%) / 18 (20.2%)	3 (100%) / 0 (0%)	0.000
C7	22 (66.7%) / 11 (33.3%)	65 (73%) / 24 (27%)	3 (100%) / 0 (0%)	0.454
C8	23 (69.7%) / 10 (30.3%)	65 (73%) / 24 (27%)	2 (66.7%) / 1 (33.3%)	0.921
C9	7 (21.2%) / 26 (78.8%)	66 (74.2%) / 23 (25.8%)	3 (100%) / 0 (0%)	0.000
C10	29 (87.9%) / 4 (12.1%)	73 (82.0%) / 16 (18%)	2 (66.7%) / 1 (33.3%)	0.52
C11	29 (87.9%) / 4 (12.1%)	77 (86.5%) / 12 (13.5%)	3 (100%) / 0 (0%)	0.78
C12	15 (45.5%) / 18 (54.5%)	57 (64%) / 32 (36%)	2 (66.7%) / 1 (33.3%)	0.18
C13	6 (18.2%) / 27 (81.8%)	34 (38.2%) / 55 (61.8%)	1 (33.3%) / 2 (66.7%)	0.112
C14	6 (18.2%) / 27 (81.8%)	55 (61.8%) / 34 (38.2%)	1 (33.3%) / 2 (66.7%)	0.000
C15	8 (24.2%) / 25 (75.8%)	62 (69.7%) / 27 (30.3%)	2 (66.7%) / 1 (33.3%)	0.000

Items C1 to C6 C9, 14, 15 showed statistical significance.

#### IV. Discussion

The results of the present study reveal that attitude of parents towards immunization is significantly dependant on the level of education of the parents, their occupation and socio-economic status of the family. While, religion, locality of residence and sex of the child were not found to be significantly influencing parent’s concern towards immunization.

Kabir Bello &Abarshi Dauda Daniel conducted a study and found that the level of mothers education relates to their knowledge and tend to encourage childhood immunization. It was concluded that knowledge about immunization is wide spread among mothers both educated and non-educated ones, even though some educated ones may have more knowledge<sup>3</sup>.

Ramadan H A et al.,<sup>2</sup> conducted a cross-sectional survey and found that there was a positive statistically significant correlation between knowledge and practice of the mothers studied.

In a study conducted by Trojanowska A et al., it was found that parents were generally poorly informed about immunization of infants and knowledge about vaccinations may influence parents future decisions to protect their children against numerous infectious diseases<sup>4</sup>.

Chris-Otuber, G.O et al., conducted a study and found that the education of the mother, marital status, religion, geopolitical zone and her and/or the father of the child been immunized as children significantly influenced their knowledge and concluded that proper health education and health promotion interventions be taken as measures to improve knowledge, attitude and practice of mothers towards immunization as a disease prevention tool<sup>5</sup>.

Mahalingam S et al., conducted a study and found that there was a statistically significant difference between urban and rural mothers towards vaccination and even in urban areas there was significant variation in knowledge, attitude and practice of mothers towards childhood vaccination<sup>6</sup>.

In a study done by Yousif MA et al.,<sup>1</sup> it was found that gender, residence and educational level were found to be significantly associated with both parents knowledge and attitudes towards immunization.

Bernsen R M et al., did a study and found that three factors significantly related to the positive attitude towards immunization were knowledge, education and nationality and associated factors include education, receipt of information on immunization from healthcare professionals and again nationality<sup>7</sup>.

In a study done by O.Awodele et. al., it was found that there were significant relationships between age of respondents, ethnicity, level of education, occupation and attitude to immunization. However, there was no significant relationship between religion and attitude to immunization<sup>8</sup>.

Nighat Nisar et al., conducted a study in 2010 and concluded that knowledge of mothers about vaccination was found to be inadequate with strong positive attitude towards vaccination<sup>9</sup>.

Angelillo I.F et al., conducted a study and found that 57.8% of the mothers involved in the study were aware about all four mandatory vaccinations for infants (poliomyelitis, tetanus, diphtheria, hepatitis B) and this knowledge was significantly greater among mothers with a higher education level and among those who were older at the time of the child’s birth<sup>10</sup>.

The socio demographic factors apparently have a huge influence on the parents, in this study it was found that there was a significant variation observed between those who have studied a minimum of secondary school education and those were studied less. Similar was the finding between employed and unemployed, between parents of low, middle and high socioeconomic status.

Our study has some limitations. First, this study was conducted on a smaller sample size and thus it cannot be generalized to entire population, larger sample would yield better results. Second, this study is cross-sectional. Therefore it was not possible to determine the causal relationship between the socio-demographic variables and parent’s decision making. Third, Socio-economic status of the respondents was based on the subjective reports given by them. Therefore, it may not be reliable.

## V. Conclusion

Based on the findings of the present study, it could be concluded that parental concerns and attitude towards immunization is greatly influenced by their educational status, occupation and socio economic status, which was evident from statistically significant positive correlation between the mentioned variables and parental concerns and attitudes whereas religion, locality of residence and sex of the child does not influence the parental attitudes towards immunization significantly. Majority of the parents have positive attitudes towards immunization but express the need for more information from authentic sources.

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