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KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARD CHILDHOOD IMMUNIZATION AMONG PARENTS DURING PANDEMIC

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Abstract

Background: A crucial component of preventative medicine is immunization. It has been shown that childhood vaccines diminish the prevalence of diseases that may be prevented by vaccination, reducing morbidity and mortality. Every year, infectious diseases take the lives of 5 million children and leave another 5 million permanently disabled. Immunization protects children against a variety of harmful illnesses. Immunization is the process through which a person receives a vaccination to help them acquire resistance to or immunity to an infectious illness. Immunization boosts the immune system's ability to defend against certain illnesses.

Objective: To ascertain parents' knowledge, attitudes, and practices around childhood vaccination.

Methodology: This research is an online-based prospective observational one with a sample size of 278 parents with children under the age of five. The chi-square test and descriptive analysis using SPSS 20 indicate that with a mean and standard deviation of 1.92 and 0.79, knowledge of educational background was significant at P = 0.056 and that of dwelling area was significant at P = 0.033. With a mean and standard deviation of 1.87 and 0.67, respectively, the attitude and practice findings for educational attainment and geographic region were not significant at P > 0.05.

Conclusion: The research found that the location of residence, educational level, fear of COVID-19, and lack of transportation during the pandemic among parents are all factors that have an impact on parents' knowledge, attitudes, and vaccination practices among parents of children under the age of five.

Keywords: Immunization, Parents, Children, Vaccination, Pandemic

INTRODUCTION:

A crucial component of preventative medicine is immunization. It has been shown that childhood immunization lowers the prevalence of diseases that may be prevented by vaccination [1]. As per the WHO (World Health Organization), the promotion of health is the responsibility of each individual. It is well known that infectious illnesses cause 5 million children to die and 5 million more to become disabled each year[2]. Around 80% of children in poor countries now have better BCG, DPT, polio, and measles coverage due to the expanded vaccination program that the WHO launched in 1974[3]. In 2019,

19.7 million children under 1 year old globally did not get the 3 doses of DTP that were recommended, while an estimated 13.5 million infants in the same age group who did not receive any vaccinations were zero-dose children[4]. The primary method of preventing infection is to reduce the number of infectious microorganisms in the blood, boost the host's immune system, and cure sick hosts[5]. There is a global call to achieve more than 90% coverage of all vaccines available through the national immunization programs of individual countries by 2020 [6]. The National Family Health Survey (NFHS) reveals an increase in immunization coverage over the last year in India[7].

Various factors of parenteral immunization knowledge and practices include the education of the parent, the age of the mother at the time of delivery, the number of preschool children, the mother's race, and the income of the family, which is also associated with childhood immunization compliance [8]. In 2018, 18 percent of newborns under 1 did not get the dosage of DTP that is required, and an estimated 13.5 million children in the same age range did not receive any vaccinations, according to UNICEF's report on immunization rates among children under 12 to 23 months. Only some of them—about one-fourth—did not receive the complete vaccine[9]. According to the study, vaccinations might save up to three million child deaths each year, yet there are still three million deaths from illnesses that can be prevented by immunization (VPDs)[11].
The advantages of immunization include preventing antibiotic resistance, ensuring safe travel, improving health quality, and extending life expectancy [12]. A major barrier for children includes a lack of knowledge about vaccination, poor awareness, misperceptions, and rumors about vaccine safety concerns on the internet and in the media [13].
There are various obstacles to vaccination, such as false information and misunderstandings about vaccines, adverse reactions and side effects, diseases that may be prevented by vaccines, the emergence of diseases after the administration of vaccines, etc [14]. Only a small number of geographic regions provide free vaccinations, mostly because the National Health Service has been decentralized since 2001 and the 20 regions are now responsible for providing public health and healthcare services. To increase the vaccination rate, parents' understanding of and compliance with vaccine requirements are crucial[15].

RESEARCH & METHODS

This online-based prospective observational research will examine parents' knowledge, attitudes, and practices about child vaccination over the course of six months. Raosoft (statistical software) suggested a minimum sample size of 278 based on the assumption that the margin of error would be 5% and the confidence interval would be 95%.

A systematic survey was administered to a limited group, and based on the responses, we have made some necessary changes. The questionnaires consist of four sections: socio-demographic, attitude, knowledge, and practice on vaccination. The questions were multiple-choice, and a scoring system was applied to evaluate the level of knowledge, attitude, and practice of participants as good 7, average 3-6, and poor 3. The ethical approval for this study was obtained from the Institutional Ethics Committee (*Ref: JKKNCP/ETHICS_PRACTICE/020PDS08*).
Both male and female participants over the age of 18 who filed a self-declaration form and had children under the age of five were included in the research; those who were not willing to take part were omitted.

Statistics

IBM SPSS version 20 software was used to analyze the data. The mean ± SD was calculated for the data comprising educational qualifications and knowledge scores on vaccination. The Chi-Square test was performed to compare the association between different levels of knowledge, attitude, and practice (good, average, and poor) and demographic data (education and area of living) among the study population.

RESULT AND DISCUSSION

1. Socio-demographic variables

There was no significant gender distribution among the 278 individuals in terms of vaccination status. This result distribution resembles that of the research by Angadi MM et al., which discovered no significant correlation between gender and vaccination status.

Table 1. Distribution of socio-demographic variables (n=278)

Socio-demographic variables		No. of participants (n=278)	Percentage (%)
Relationship	Father	104	37.4
	Mother	174	62.6
Age	18-20	21	7.6
	21-25	79	28.4
	26-30	71	25.5
	31-35	87	31.3
	36-40	13	4.7
	Above 40 years	7	2.5
Area of living	Rural	154	55.4
	Urban	124	44.6
Educational Qualification	Primary	17	6.1
	Secondary	33	11.9
	High school	47	16.9
	Graduates	147	52.9
	Postgraduates	34	12.2

The findings are similar to those of the research by Al-lela Omer "QB et al., which found that more than 82 percent of parents supported child immunization and that the majority of parents were aware that vaccines prevent diseases. More than 70 percent of respondents correctly responded in favor of immunization for children and believed that vaccination would avoid illness[17]. 77.3 percent of respondents who were asked about the timing of the first immunization said that it should begin at birth. More than 86 percent of respondents were considered to be acquainted with the delivery of the first vaccination, BCG, in the research by Paudyal S to determine mothers' knowledge of vaccination and to analyze the attitude and practice of Immunization in Jhapa District, Nepal[18].

More than half (73 percent) of immunization participants reported getting information from physicians and nurses, according to the data collected on them. Our findings are in line with those of research by Nath B et al., who sought to determine the knowledge, attitudes, and practices of respondents among children aged 12 to 23 in Lucknow regarding immunization. They found that those healthcare professionals and healthcare employees were respondents' top sources of information on immunization (78%) [19]. In the present research, the study population saw mass media (TV and newspapers) as a poor source of knowledge on vaccination (6.5%). The opposite finding was found in the research by Al-Zahrani J et al. that evaluated parental knowledge and attitude towards vaccination and their influence on immunization practice. In that survey, the media was noted as a key source (43.7%) for increasing respondents' knowledge about immunization. The findings of our research indicate a need to increasingly rely on television and other media as a vaccine promotional strategy [19].

When asked about OPV awareness, almost 74.5 percent said that the accurate response was that OPV prevents polio. It is comparable to the research Selvaraj K et al. did in Puducherry, which found that awareness of the polio vaccination was greater (94.4 percent)[20]. Of those who knew about the typhoid vaccine, 51.8% were unaware that it was available. This finding is comparable to one from research by Sharma R et al. in east Delhi, which evaluated respondents' awareness of regular vaccination among caregivers of young children and found that less than half of those surveyed were aware of

the availability of typhoid vaccine[21]. 60.8 percent of those surveyed had no knowledge about pentavalent vaccinations. In contrast, research by Selvaraj K et al. in Puducherry" that examined mothers' awareness of regular immunization with a particular emphasis on the pentavalent vaccine revealed that only 36.7% of 215 mothers knew about the pentavalent vaccine. The results of our research indicate that physicians and other healthcare professionals should remind women about the value of receiving a pentavalent vaccine and enhance their awareness of this topic[22].
According to the survey, the majority of them (78.1%) have no fear of vaccination, while the rest (21.9%) have stated their anxiety. This result is consistent with the findings of research done in Lucknow by Gupta P et al. [23] to evaluate specific variables relating to immunization coverage, which demonstrates that fear of vaccination accounts for 16% of non-adherence to vaccine recommendations.

The majority of those surveyed in this research said that they vaccinate their children because the government offers vaccinations (50 percent). Our study's findings are in contrast to those of a study performed by Nath B. et al. to assess respondents' knowledge, attitudes, and practices regarding immunization among children aged 12 to 23 in Lucknow. That study's findings revealed that a higher percentage of those who utilized government as well as outreach facilities remained partially immunized as compared to those who utilized private facilities[24]. Our study's conclusion, therefore, emphasizes the need for the government to implement systematic mechanisms to track children's immunization status and remind caregivers who rely on government institutions to deliver vaccinations to the children about the upcoming schedule. Here, parents were encouraged to immunize their children through weak sources like commercials.

The majority of them (69.4%) said that no one recommended that the vaccine is not good for a child's health, and (57.6%) said that they would contact their doctor and (18.3%) nurses when they needed information about missed vaccinations. The outcome reveals that 67.3 percent of participants responded that fever medication is required. The research by Sankar BK et al., to assess and correlate the knowledge, attitude, and practices of vaccination among mothers with educational status in a teaching hospital in South India came to a similar conclusion[25]. Based on vaccination during the pandemic situation, (67.3%) said that vaccination was necessary, but (55.8%) they did not vaccinate their child during the pandemic situation. Out of 278 participants, 163 (58.6%) respondents said that they had a fear of COVID-19, while 103 (37%) said lack of transportation due to the pandemic was the reason for not vaccinating their children.

2. Evaluation of knowledge with educational qualification and area of living

Table 2: Evaluation of association of different levels of knowledge with educational qualification and Area of living

Parameter	**Different levels of the knowledge domain**		
Educational Qualification	**Good**	**Average**	**Poor**
Primary	1 (0.36%)	4 (1.44%)	13 (4.67%)
Secondary	3 (1.07%)	10 (3.59%)	19 (6.83%)
High School	5 (1.79%)	21 (7.56%)	22 (7.91%)
Graduate	76 (27.33%)	51 (18.34%)	19 (6.83%)
Postgraduate	17 (6.11%)	14 (5.03%)	3 (1.07%)
Area of living	**Good**	**Average**	**Poor**
Urban	56 (20.14%)	34 (12.23%)	34 (12.23%)
Rural	47 (16.91%)	67 (24.10%)	40 (14.39%)

Both the area of residence and the knowledge of educational background were significant at $p \leq 0.05$, with a mean and standard deviation of 1.92 and 0.79, respectively.

3. Evaluation of attitude and practice with qualification and area of living

Table 3: Evaluation of association of different levels of Attitude and Practice with educational Qualification and Area of living

Parameter	**Different levels of Attitude and practice domain**		
Educational Qualification	**Good**	**Average**	**Poor**
Primary	1 (0.36%)	12 (4.32%)	4 (1.43%)
Secondary	5 (1.79%)	14 (5.03%)	13 (4.68%)
High School	9 (3.24%)	25 (8.99%)	14 (5.03%)
Graduate	55 (19.78%)	81 (29.13%)	11 (3.95%)
Postgraduate	12 (4.31%)	18 (6.47%)	4 (1.43%)
Area of living	**Good**	**Average**	**Poor**
Urban	41 (14.75%)	62 (22.30%)	21 (7.55%)
Rural	44 (15.83%)	84 (30.22%)	26 (9.35%)

With a mean and standard deviation of 1.87 and 0.67, respectively, the attitude and practice outcomes of educational attainment and geographic location were not significant at the $p \leq 0.05$ level. The study shows that socio-demographic variables are associated with the level of knowledge, attitude, and practice among parents toward vaccination.

CONCLUSION

According to where they live and their degree of education, parents of children under the age of 5 have different levels of knowledge, attitudes, and vaccination practices. The study also highlighted the information gained by the parents on vaccination through health care providers like doctors and nurses. The results showed that parents' fears of vaccination are exacerbated by their lack of access to transportation during the pandemic and their fear of COVID-19. If healthcare professionals could educate parents and the community about the truth and myths about vaccination, our society's knowledge, attitude, and vaccination practices would improve. This study concluded that the level of knowledge about vaccination is significantly high. This highlights the significance of parental vaccination knowledge, attitudes, and practices in raising the level of immunization in our culture. Early teaching about vaccination in every area helps parents improve their practice of vaccination for their children, eradicate the disease caused by the future generation, and make a healthy society.

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CONFLICT OF INTEREST

There are no conflicting interests to disclose.

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