

KNOWLEDGE AND PERCEPTION REGARDING CHILD IMMUNIZATION AMONG MOTHERS IN A RURAL COMMUNITY OF LAHORE

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ABSTRACT

This study aimed to assess the knowledge and perceptions of mothers regarding child immunization in a community to evaluate the awareness, understanding and perceptions of mothers about early vaccination and to recommend the measures to improve their awareness status about immunization. A simple descriptive survey was carried out for the purpose to assess the knowledge and perceptions of mothers regarding immunization. A sample of 80 mothers was taken in the study by non-probability convenience sampling method. Microsoft Excel Software and SPSS 22 was used for data entry and analysis. The findings of the study showed that majority of the mothers were fully or partially aware about the early immunization yet some of them were ignorant in this regard. More than (75%) of the mothers were in favour to be educated about the immunization and its importance in regard to prevent

early childhood diseases. They strongly suggested that awareness sessions should be conducted for mothers to comply with the early immunization. In conclusion, it is strongly suggested that education and immunization information must be instructed to the public by awareness sessions (teachings) as well as by the information given by vaccinators and Lady Health Workers. The education level of females should be improved and mothers' knowledge of immunization must be enhanced.

KEYWORDS: Knowledge, Immunization, Mothers, Perception, Child, Diseases Prevention

INTRODUCTION

Immunization is a persistent instrument for controlling and eradicating devastating infectious diseases and is estimated to avert between 2 to 3 million deaths each year. It is one of the most reasonable health investments, with verified tactics that make it available to even the most hard-to-reach and susceptible people (WHO, 2015). Immunization is the primary prevention and a very accessible and productive way to lessen the financial burden in poor countries. In developing countries, vaccination coverage has been improved to a better extent but still, the children in some of the regions are getting deprived of vaccines because of some reasons that need to be worked on. (EPI, 1998). Tuberculosis, diphtheria, pertussis, tetanus, hepatitis B, Hemophilus influenza type B, and measles are significant health concerns (Swarnkar et al., 2016). Building public and professional trust is essential for the success of immunization programs. Therefore, it is crucial to assess the knowledge and practices of health workers involved in vaccination efforts (Asim et al., 2012). The immunization status needs to be more focused for its better coverage. In the developing countries like Pakistan where still polio cases are reported, needs special attention to be worked on to improve the health status and indicators of the country (Loevisohn B, et al, 2006). One of the main reasons for having problem with coverage is inadequacy of the community involvement and education of the people in the immunization activities (Singh M C, 1994). Nurses must possess confidence, expertise, and current knowledge. A strong understanding and effective practice of immunization among healthcare professionals are vital for achieving and sustaining high vaccination rates. Nurses play a key role in advising on and promoting immunization, as well as administering vaccines as part of the childhood immunization initiative. All personnel engaged in vaccine delivery should be adequately trained and competent to perform their duties, ensuring they can provide accurate and current information

regarding diseases and vaccines to patients. This is essential for maintaining safe and effective practices and delivering a high standard of care (WHO, 2015).

In Pakistan literature reported few studies on this topic and these studies also identified that mother's knowledge and positive attitude towards immunization is required to achieve 90% immunization among one year old children (Mansuri AF, Baig LA, 2003). Mother's knowledge, attitude and practices play a major role in achieving complete immunization before first birthday of the child. The objective of expanded program of immunization is to achieve 90% routine immunization converge of all EPI antigens (Nighat Nisar et al.2010). Education is one of the compulsory tools to enhance the consciousness levels of the mothers towards immunization. Some of the literature showed that educational campaigns have a positive impact on the practices and awareness of the mothers regarding the schedule and plan of immunization of their children.(el-Shazly MK, 1991).

Vaccine hesitancy is characterized by a delay in the acceptance or outright refusal of vaccines, even when vaccination services are readily available (MacDonald, 2015). Since the beginning of the COVID-19 pandemic, misinformation about vaccines has proliferated, contributing to an increase in vaccine hesitancy within the general population (Engelbrecht et al., 2022). This growing hesitancy results in lower vaccination rates. Health professionals, particularly nurses, play a crucial role in educating and advocating for immunization, which is essential for enhancing vaccine uptake and mitigating hesitancy (Dror et al., 2020). However, research conducted in South Africa indicates that inadequate vaccine uptake is linked to insufficient health information provided by nurses to the public. Furthermore, nurses' understanding and attitudes towards vaccines, especially concerning their safety, significantly affect the acceptance of paternal vaccines and help alleviate public hesitancy (Hoque et al., 2014). In Qatar, identified knowledge gaps among primary care nurses included issues related to the safe handling and administration of vaccines, their effectiveness, and potential contraindications (Abdulla et al., 2020). The aim of the study was to assess the level of awareness and perception of nurses regarding child immunization.

Methodology

A quantitative cross-sectional descriptive study was carried out utilizing an online survey questionnaire. This quantitative methodology was chosen to reduce subjectivity and yield measurable results that could be analyzed statistically, represented graphically, and

interpreted effectively. Purposive sampling was employed to distribute the survey among mothers of children who received vaccinations between October and December 2022. Data collection was conducted by nurses who met specific inclusion criteria: they held either a Diploma or Bachelor's degree in Nursing, served as key personnel in well-baby clinics (WBC), communicable disease clinics (CDC), and travel clinics; worked as school, home healthcare, or health center nurses; possessed at least three years of experience within the Primary Healthcare Corporation (PHCC) as mandated by the workforce training department (WFTD); were licensed by the Pakistan Nursing and Midwifery Council (PN&MC); and demonstrated proficiency in English, as the educational materials were provided in that language. To achieve a confidence level of 95%, a confidence interval of 0.05, and an anticipated response rate of 85%, a sample size of 80 participants was deemed necessary. The study took place in a rural area near Bund Road, approximately 4 kilometers from Lahore city. The data collection instrument, written in English, gathered socio-demographic information and included a questionnaire designed to evaluate knowledge and perceptions regarding vaccines. Survey responses were collected electronically through Google Forms, then transferred to an Excel spreadsheet and imported into the Statistical Package for the Social Sciences (SPSS) version 28 (SPSS Inc., Chicago, Illinois, United States). The data were summarized and analyzed using descriptive statistics and frequency counts. Descriptive statistics were utilized to estimate the proportion of participants who answered the knowledge-based questions correctly, with calculations for mean, percentage, and frequency conducted accordingly.

This study protocol approval of the institutional review committee was obtained, the study's purpose was explained to the participants clearly before information collecting from them. Informed consent were taken from all survey respondents and it was assured that all data were kept private in accordance with ethical standards.

Results

To analyse the results of the current study, it was found that the minimum age of participants who participated in the study was 20 years and a maximum 48 years were observed in the data with mean of 23.25 ± 4.311 SD years. The majority of the participants belong to age group 20-30 years n-45, while the minimum number of respondents belong 50 and above n-10 (see table 1).

Table 1: Demographic data of the participants

	Frequency (n-80)	%
Age		
20-30	45	56.2%
30-40	11	13.7%
40-50	14	17.5%
50 and above	10	12.5%
Living in		
Village	50	62.5%
City	30	37.5%
Education		
Mothers Having no formal education	16	20%
Mothers with primary education	39	48.7%
Mothers with secondary education	25	31.2%

Knowledge of participants regarding vaccination

Majority of the participants n-75 know that vaccinations is the primary intervention against many infections, the higher number of respondent n-70 also mentioned the schedule of immunization among child s, while n-74 knows that vaccination does n,t physically harm child, and majority of the mothers were not agreed n-71 to vaccinate children's in severe allergic reactions. The n-69 number of participants mentioned that vaccination have side effects. While n-76 agreed that DPT, MMR and tuberculosis are prevented through vaccination and higher number of respondents n-72 answered that immunization developed the immunity of the child. (see table 2).

Table 2: Knowledge Based Questions on immunization

S.No	Statements	Responses
1	Is immunization the primary intervention to overcome many of the communicable infections?	Yes: 75 No: 05

2	Is It important to know the schedule of immunization?	Yes: 70
		No: 10
3	Can Immunization physically damage a child?	Yes: 06
		No: 74
4	Is it essential to immunize a child in severe allergic reactions	Yes: 09
		No: 71
5	Is immunization has side effects?	Yes: 69
		No: 11
6	Can the following diseases be prevented by immunization (Polio, Tetanus, Measles, T.B, Mumps, Hepatitis B, Hepatitis C, Rubella, Meningitis, Typhoid, Malaria, Influenza etc)	Yes: 76
		No: 04
7	Immunization is important to develop immunity of a child to fight against diseases	Yes: 72
		No: 08

Perception of mothers towards vaccination

The 4 items were regarding the perception of the participants regarding vaccination. The maximum number of mothers strongly agreed n-60 that mother education is important for child immunization, while majority of the mothers n-64 were also strongly agreed that awareness session should be given to mothers. The higher number of participants n-72 were also strongly agreed that every child should be immunize to protect from such infections, and n-62 higher number was also strongly agreed mentioned that Immunization is cost-effective and most successful intervention for public health (see table 3).

Table 3: Perception of Mothers Regarding Immunization

S.No	Statements	Responses
8	Mothers education is important for child immunization	S. Agree: 60
		Agree: 16
		Disagree: 04
		S.Disagree: 00
9	Awareness sessions should be given to the mothers regarding immunization	S. Agree: 64
		Agree: 16

		Disagree: Nil
		S.Disagree: Nil
10	Every child should be immunized with all the vaccines	S. Agree: 72 Agree: 08 Disagree: Nil S.Disagree: Nil
11	Immunization is the most successful and cost-effective public health intervention	S. Agree: 62 Agree: 10 Disagree: 04 S.Disagree: 04

Discussion:

The results of the study showed that majority of the mothers were adequately or somewhat conscious about the importance of early immunization yet some of them were ignorant in this regard. Knowledge based questions responses as mentioned in table 2 showed that majority of the mothers were having the awareness and knowledge regarding the immunity provided by immunization, diseases prevented by immunization, schedule of immunization, side effects and allergic reactions to immunizations. Although the mothers who were aware about the importance of immunization yet they showed their concern to be taught at the time of vaccination of their children. Some of the aspects of the given results regarding knowledge and awareness are supported by (D.Adeyinka et al 2009). The majority of mothers and caregivers participating in the study demonstrated a strong understanding of immunization, recognizing its importance and impact on their children's health. Additionally, a notable number of mothers exhibited moderate knowledge, while only a small fraction displayed poor understanding of immunization. This finding aligns with a indian study, which evaluated the knowledge and practices of mothers from both urban and rural settings regarding vaccination; it found that maximum number of mothers from rural areas possessed a solid understanding of immunization (singh et al., 1994). Furthermore, another study that compared vaccination rates between populations in developed and developing regions indicated that parents expressed concerns about vaccination, citing issues related to the quality and safety of

vaccines, a preference for natural immunity, and peer influence as factors contributing to their hesitance in vaccinating their children (Rehman et al., 2017).

As for as the perceptions are concerned, it was found that 75 % of the mothers were strongly agreed and 20% agreed and only 5% disagreed in favour to have literacy of women to immunize their children, in regard to prevent the early childhood diseases. 80 % of the mothers were strongly agreed and 20 % agreed that awareness session should be conducted for mothers to get compliance with the early immunization. Almost all the mothers agreed upon that every child should get immunized to be healthy of the diseases as 90 % of the mother strongly agreed and 10 % agreed. According to the responses analysis majority of the study participants perceived themselves to get awareness regarding early immunization as supported by the previous studies (Angelillo et al 1999). The results are also parallel to the Nepalese mothers where childhood immunization rates as high as 95% for tuberculosis (BCG), 80% for polio and diphtheria/pertussis/tetanus (DPT), and 69% for measles; it is obvious that Nepalese mothers have very impressive health behavior and perception with regard to childhood immunization (Donald Matsuda, 2002).

This study presents several limitations that must be taken into account when interpreting its findings. It was conducted in a specific geographical location, which may restrict the applicability of the results to other areas. The cross-sectional design of the study limits the ability to establish causal relationships between the variables and to observe changes in knowledge over time. Based on the findings of this research, several recommendations can be made to enhance mothers' understanding of child immunization. The Ministry of Health should work to strengthen and broaden its national immunization initiatives. Community-based programs should be created to raise awareness about immunization among primiparous mothers. Future research should investigate the influence of additional factors, such as income and paternal education. To improve the generalizability of the findings, it is advisable to conduct further longitudinal studies with a larger sample size drawn from various tertiary care hospitals. Additionally, increasing access to resources in rural areas, along with ongoing training for healthcare professionals, is crucial for enhancing immunization coverage. This strategy will help ensure that accurate information reaches underserved communities, thereby addressing the knowledge gap and boosting vaccination rates.

Conclusion

In conclusion, it is strapping recommended that health education and immunization information must be instructed to the parents and specifically the mothers by public awareness sessions (ongoing teaching sessions) as well as by the information's inducted by vaccinators and Lady Health Workers. The prime focus of all the societal mobilization movements should be the mothers. A particular endeavour to get better the attentiveness and teaching of the mothers should be planned at the basic levels. The education level in females must be improved at all cost. Mass media campaign is a better way to communicate the recent updates and frequent reorientation of the mothers regarding the immunization. Those areas should be the more targeted areas to empower in terms of education where the literacy level is low as they are at high risk for getting less compliance towards vaccination. In short it will not be out of place to say that imparting the education may better the coverage of immunization in the country

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