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Assessment of caregiver's knowledge attitude and practice towards childhood immunization in Navi Mumbai.

[1]Dr. Rajesh Kumar Rai, HOD and Professor, Department of Pediatrics, Padmashree D Y Patil School of Medicine, Navi Mumbai, Maharashtra, India.

[2]Dr. Ipsita Vashishtha, Senior Resident, Department of Pediatrics, Padmashree D Y Patil School of Medicine, Navi Mumbai, Maharashtra, India.

[3]Dr. Neelu Elon, Assisstant Professor, Department of Pediatrics, Padmashree D Y Patil School of Medicine, Navi Mumbai, Maharashtra, India.

[4]Dr. Prithi Inamdar, Associate Professor, Department of Pediatrics, Padmashree D Y Patil School of Medicine, Navi Mumbai, Maharashtra, India.

[5]Dr. Vinaykumar P Hedaginal, Junior Resident, Department of Pediatrics, Padmashree D Y Patil School of Medicine, Navi Mumbai, Maharashtra, India.

Corresponding Author: Dr. Ipsita Vashishtha, Senior Resident, Department of Pediatrics, Padmashree D Y Patil School of Medicine, Navi Mumbai, Maharashtra, India.

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Abstract

Background: The aim of the study was to assess parent's knowledge, attitude and practice towards overall awareness regarding vaccines, the safety, side effects and barriers of vaccination.

Methods: it is a cross-sectional study among 300 caregivers attending the OPD of Dept. of Pediatrics in a tertiary care hospital. Pretested and standardized questionnaires were administered to caregivers in order to assess their knowledge, attitude and practices regarding Childhood immunization. Data were entered in excel and analysed using STATA Version 13.0. Descriptive analyses were done.

Results: The mean age of the participants 34.8 (6.6%) years. Majority (72.3%) were male. >90% of them had heard about vaccines, >2/3(68.4%) were not aware of the Universal Immunization Programme (UIP). 25.3% of them told that they trusted their family Physician/paediatrician for deciding to vaccinate their child. The main reported difficulties for getting a child vaccinated were scarcity of vaccines (17.0%) and resistance from the family members (13.0%).

Conclusion: A significant gap was noted between the knowledge and practice of immunization among caregivers of children. Efforts to educate and increase awareness regarding vaccination may increase uptake.

Keywords: childhood immunization, KAP, caregivers knowledge, India

Introduction

One of the important and strategically most effective strategies to prevent childhood illnesses and mortality is immunization.[1,2] As per the United Nations Children's Fund (UNICEF), nearly 2 million of the childhood deaths every year globally are due to vaccine preventable diseases and most of them (around 1.5 million deaths) occur among children below five years age.[3] Consequently, there is a lot of emphasis in scaling up the childhood immunization programs worldwide. Even with extensive resources being pooled in to achieve the aim of universal immunization, the current coverage is modest, at best. In India, according to National Family Health Survey-4 data, the proportion of children fully immunized at one year of age (defined as receiving BCG, Measles, and 3 doses each of oral polio and Diphtheria, Pertussis, Tetanus toxoid) stands at only 62%.[4]

Previous literature has suggested that parental knowledge and awareness plays an important role in availing the immunization services.[5,6] Studies have also shown that even parents who vaccinate their children can have doubts and fears about immunization.[7,8] Education status and other socioeconomic status of parents have a great impact on their decision regarding vaccination. According to a recently published study, lower maternal education and belonging to a family from lower wealth quintile had higher odds of delayed and incomplete vaccination.[9] There is paucity of studies from India on the overall parental knowledge, attitude and practices (KAP) regarding vaccination. The aim of the present study was to assess parent's knowledge, attitude and practice towards overall awareness regarding vaccines, the safety of vaccination, their fears on the side effects of vaccines and the barriers of vaccination.

Methods

The study was conducted with the intent to assess parent's knowledge, attitude and practice regarding vaccines, the safety of vaccination, and the barriers to get their children vaccinated. This cross-sectional study was conducted in Department of Pediatrics, Dr. D Y. Patil Medical College, Nerul, Navi Mumbai from November 2018 to November 2020.

Study subjects

The study population comprised of parents/caregivers of the children visiting Department of Pediatrics.

Inclusion criteria

- Parents visiting the Department of Pediatrics at Dr. D Y. Patil Medical College, Nerul, Navi Mumbai
- Those residing in Navi Mumbai
- Those consenting to participate in the study

Exclusion criteria

- Those not consenting to participate in the study
- Children with chronic illness

Study design

The participants were selected using a systematic random sampling where every second eligible caregiver attending the out-patient department (OPD) of Department of Pediatrics were screened for eligibility in the study. Once eligibility was confirmed and consent was obtained, the pretested questionnaire was administered. All the information collected was kept confidential.

Sample size

Assuming the 60% of the caregivers had adequate knowledge regarding immunization and considering absolute precision of 5%, and 80% power, a sample size of 300 was required.[10] We used the formula $4PQ/d^2$ where P = prevalence; Q=100-P; d= absolute precision.

Study tool

A questionnaire was designed to collect all necessary information related to the study. The questionnaire contained four broad sections. Part I was designed to gather information on socio-demographic characteristics; Part II dealt with the parents' knowledge about vaccines and the process of immunization; Part III of the questionnaire aimed to collect data on parental attitude about vaccination and Part IV with the actual practice of immunization. The questionnaire was pilot-tested and required changes were made to ensure that the questions were asked in an easily comprehensible way.

Ethical consideration

A prior permission from The Institutional Ethical committee was obtained. This study did not impose financial burden on study participants. A well-informed consent in writing was received from the study subjects before conducting the study. All participants were ensured confidentiality.

Statistical analysis

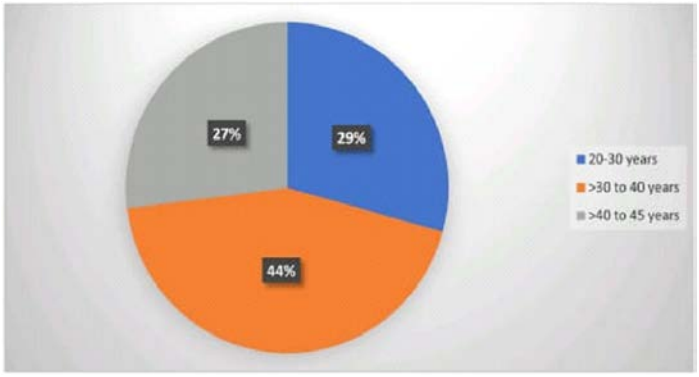
Data entry, data cleaning & data analyses were done by STATA version 14.0. Output indicators were analysed through the software and results were subsequently presented in form of tables & graphs. A descriptive analysis was performed. Mean (SD; standard deviation) or median (IQR; inter-quartile range) were calculated for continuous variables and proportions for categorical variables. A p-value of <0.05 was considered statistically significant.

Results

A total of 300 caregivers were interviewed. The mean (SD) age of the participants was 34.8 (6.6) years. Majority (43.7%) were in the age group of >30 to 40 years. Majority (72.3%) of the respondents were male. Most (35.0%) of the respondents had completed their secondary education and around 30% had a higher education (Table 1).

	Proportion; n (%)
20-30 years	88 (29.3)
>30 to 40 years	131 (43.7)
>40 to 45 years	81 (27.0)
Mean (SD) age in years	34.8 (6.6)

Age distribution of Participants



Knowledge about vaccines

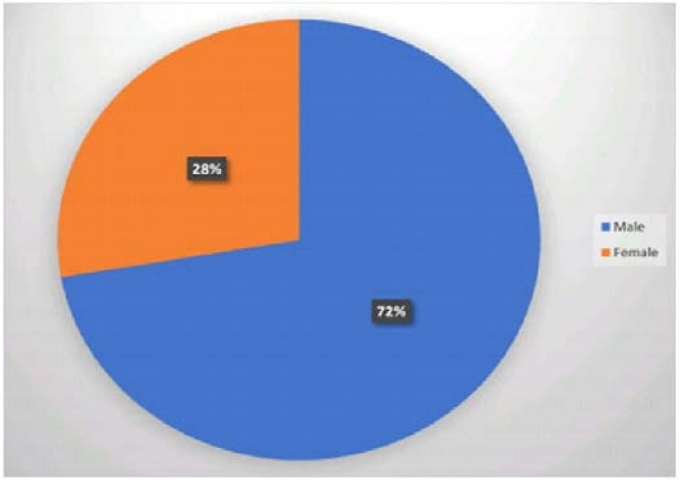
Majority (92.0%) of the study participants had heard about vaccines (Table 2). Among those who reported that they had heard about vaccines, around one fourth (23.5%) had heard through communication from health authority and 22.5% through doctor/paediatrician. Television was a source of information for 16.7% of the respondents whereas social media platform was a source of information for 20.6% of the respondents. When asked about the ways through which vaccines can help children, majority (58%) replied that vaccines provide protection from particular diseases (Table 2). Around one-fifth (18.3%) replied that vaccines improve the body strength to fight a disease. A total of 10% of the respondents stated that vaccines avoid complication of a disease.

A total of 18.7% reported that vaccines are important till 5 years of age while 22% stated 10 years as the response. Around a fifth (21.7%) of the respondents stated that vaccines are important throughout life. When enquired

about the knowledge on how long the immunity lasts after receiving a vaccine, most (35.3%) of the study participants responded as "whole life". Similar proportion of respondents replied as "few months" (29.3%) and "almost a year" (30.7%) (Table 2).

	Proportion; n (%)
Male	217 (72.3)
Female	83 (27.7)

Sex distribution of participants



Majority (68.4%) were not aware of vaccines offered under Universal Immunization Programme (UIP). Majority (25.3%) of the respondents replied that they trusted their family physician/paediatrician for deciding to vaccinate their child (Table 2). Peer advice (20.7%) and suggestions from the government facility (20.0%) also played an important role in the decision-making process. The decision makers in the family with regards to the vaccination of the child were either the father (32.3%) or the grandmother (33.0%). Mothers were the key decision makers in around one-fourth of the families (23.4%) (Table 2). Around one-third of the children were vaccinated at a government health facility (35.3%) and a similar proportion were vaccinated at a private clinic (35.7%). A slightly lesser proportion of children were vaccinated at private hospital (29.0%).

Perceptions and beliefs about vaccines

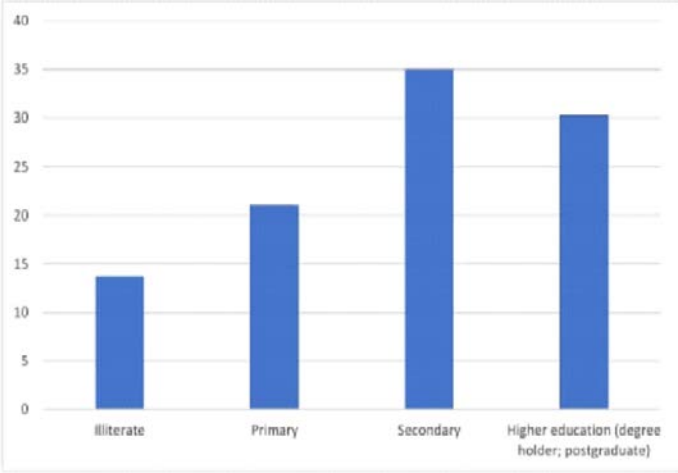
Around a third (31.7%) felt that vaccination increases the chances of allergies (Table 3). When asked whether additives used in the vaccines are dangerous for humans, majority (53.3%) stated that additives are not dangerous. A little less than one-fifth stated this to be incorrect (17.0%). When the study participants were asked whether vaccines are superfluous, as infectious diseases can be always is treated with antibiotics, majority (51.0%) responded as "Do not know". Around 31% responded as "False" and a little less than one-fifth (17.7%) responded as "True" (Table 3). When the study participants were asked whether they thought that the efficacy of vaccines has been extensively proven, majority (49.6%) responded as "Do not know". Around a third responded as "true" (32.7%) and a small proportion responded as "false" (17.7%) (Table 3).

Around 40% of the study subjects stated that they think that vaccines are very useful (Table 3). Another one-fourth (26.4%) considered vaccines to be somewhat important and good for health of their children. Another one-fifth (20.0%) did not find vaccines to be essential. In response to the question regarding whether the respondents felt that vaccines can cause harm to the child, around a third (31.3%) responded as "not at all". A similar proportion (30.4%) of respondents was "neutral" in their response. Around a fifth (21.0%) felt that vaccines could cause a moderate or great deal of harm. The main reported difficulties in vaccination of the child were reported to be scarcity of vaccines (17.0%), resistance from the family members (13.0%), vaccination being a time-consuming process (12.3%), lack of proper infrastructure and skilled personnel (12.3%), unawareness about the timing/schedule of different

vaccines (12.0%) and lack of adequate funds (12.0%) (Table 3).

	Proportion; n (%)
Illiterate	41 (13.7)
Primary	63 (21.0)
Secondary 105 (35.0)	105 (35.0)
Higher education (degree holder; Post Graduate)	91 (30.3)

Educational qualification of the participants.

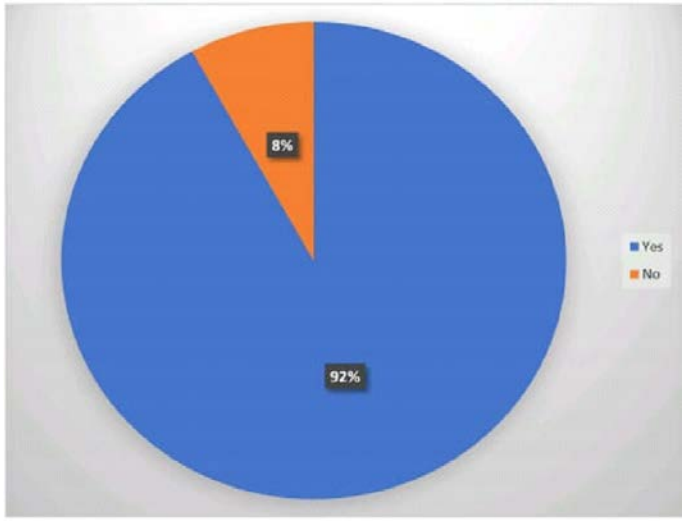


Attitude towards getting the child vaccinated

When asked regarding their attitude towards the importance of getting their child vaccinated, more than half (53.7%) responded as important or very important (Table 4). Another 35% did not feel that getting their kids vaccinated is important. When asked whether all vaccines offered to their child are important, majority (33.5%) mentioned that they think that only those vaccines that are offered through Government program are essential. Another one-third (32.6%) felt that all vaccines are important and 28.2% stated that only those vaccines that are offered by their paediatricians are needed (Table 4).

	Proportion; n (%)
Yes	276 (92.0)
No	24 (8.0)

Ever Heard about Vaccines



When asked if the respondent ever refused a vaccine to the child, majority replied “No” (72.0%) and the remaining replied affirmatively (28.0%), indicating that they had refused at least one vaccine to their child. Among those who had refused a vaccine for their child, the major reason for doing so was the “fear of shots” (27.4%) followed by the belief that protection attained through natural infection is more long-lasting and efficient (16.7%) (Table 4). Further, around 15% of the respondents did not have trust in vaccines and another 12% intended to avoid the side effects of vaccination. In a small proportion, vaccination was considered to be against their religious and ethical beliefs (10.7%).

Discussion

India has a Universal Immunization Programme (UIP) that offers vaccines for six vaccine-preventable diseases (tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis, and measles).[11] Despite the major efforts by the Government of India, there still exists resistance from the parents/caregivers with respect to the safety, efficiency

and the necessity of regular childhood vaccines. The current study was therefore conducted to examine parents' knowledge about immunization and their attitudes toward vaccination. Majority of the study participants had heard about vaccines and most of them through communication from health authority and through doctor/paediatrician. More than half replied that vaccines provide protection from particular diseases. Around one-fifth replied that vaccines improve the body strength to fight a disease. Majority (around two-thirds) were not aware about the vaccines offered through the Universal Immunization Programme (UIP). Around one-fourth of the respondents replied that they trusted their family physician/paediatrician for deciding to vaccinate their child. In majority of the families, the decision makers in the family with regards to the vaccination of the child were either the father or the grandmother. The main reported difficulties for getting a child vaccinated were scarcity of vaccines, resistance from the family members, vaccination being a time-consuming process, lack of proper infrastructure and skilled personnel, unawareness about the timing/schedule of different vaccines and lack of adequate funds. The findings of this study are similar to previous studies done across a wide geography.[12-15]

Implications of the findings in the ongoing COVID pandemic

Empirical data from a global standpoint suggests that COVID-19 pandemic has adversely affected the routine childhood immunization program and a decrease in the number of children completing three doses of the vaccine against diphtheria, tetanus and pertussis (DTP3) during the COVID pandemic. [16-18] This indicates that the routine childhood immunization program was adversely affected due to divergence of resources in containment of the pandemic. It is important to understand that this interruption of basic health-care delivery such as routine immunization services may lead to secondary health crises. Immunization delivery strategies may need to be adapted and should be conducted under safe conditions, without undue harm to health workers, caregivers and the community. Attempts to improve and restore immunization services are needed while still adhering to hygiene and physical distancing recommendations and providing protective equipment to health workers. Additionally, there is a need to expand routine services so that children residing in hard-to-reach communities are able to receive routine vaccination.

Strengths and limitations

The current study was done in a robust sample of 300 children using pretested questionnaire. The data collection was done by a trained person, thereby reducing the possibilities of errors during data collection. However, the study had certain limitations. First, the data collection was based on self-reporting from the study participants and therefore the possibility of “reporting bias” could not be ruled out. Further, the selection of participants was done from caregivers who attended the Pediatrics department of the hospital. Those that did not attend the hospital were therefore not eligible to be included and the study findings could not be applicable for them. This limits the external generalizability of the study.

Conclusion

Providing safe and effective vaccines will reduce the high burden of communicable diseases and would help to meet the health-related millennium development goals. This study documented a significant gap between the knowledge and practice of immunization among caregivers of children. The study found that access of

vaccines was one of the prime difficulties mentioned by the caregivers. Efforts to reduce cost and increase awareness of these vaccines particularly among low-income families may increase uptake.

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