

Immunization Perception and Awareness among Mothers Attending OPD of a Tertiary Care Hospital of Karachi, Pakistan

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ABSTRACT

Background: Immunization plays tremendous role in significant reduction of childhood morbidity and mortality. For this, the World Health Organization introduced EPI. Unfortunately, this goal is not achieved yet. This study was aimed to assess immunization perception and awareness among mothers attending OPD of a tertiary care hospital in Karachi.

Methods: This was a hospital-based cross-sectional study. We included 200 mothers <50 years of age, visiting Civil Hospital Karachi during December 2015–January 2016 using non-probability convenient sampling technique.

Results: Of these, 64 (32.0%) were 26–30 years old. Majority 119 (59.5%) had no formal education, but 187 (93.5%) had awareness about EPI. Among them, 179 (89.5%) considered EPI advantageous for health, 20 (10.0%) assumed neither advantageous nor harmful, 1 (0.5%) considered hazardous for health by assuming vaccines have a contraceptive effect, and they aggravate illness in a child). However, 176 mothers recently had kids <5 years old. Of these, 129 (64.5%) were fully vaccinated kids, 56 (28.0%) were partially vaccinated while 15 (7.5%) were non-vaccinated. Only 144 (72.0%) mothers were vaccinated against tetanus during pregnancy. Most common reason for vaccine refusal in non-vaccinated children was lack of awareness (47.8%). Awareness about EPI was statistically related ($P < 0.05$) with the immunization status of children and also with the age of the mother, socioeconomic status, and residence. Immunization of child and antenatal immunization of mother were also associated.

Conclusions: Vaccination coverage was suboptimal. Still, a few mothers had no awareness about EPI, and their kids were non-vaccinated while others remained partially vaccinated. Emphasizing to conduct awareness programs is the hour's need. Mother's should be counseled regarding timely vaccination, and their queries must be addressed. EPI should be offered at doorsteps as a solution for geographical hindrance.

Key words: Expanded program on immunization, immunization awareness, immunization perception of mothers, Tertiary care hospital of Karachi, Pakistan

INTRODUCTION

Immunization is among the safest and cost-effective public health intervention of this century. Immunization programs play a tremendous role in the significant reduction of childhood morbidity and mortality worldwide as far as vaccine-preventable diseases are concerned.^[1,2] Immunization can either be routine or supplemental. Routine immunization, for example, includes expanded program on immunization (EPI), while supplemental immunization refers to conducting mass immunization campaigns (for example, national immunization days for polio campaigns) to eradicate vaccine-preventable diseases.^[3,4] The World Health Organization (WHO) has introduced EPI, which was targeted at immunization of a child fully against vaccine-preventable diseases.

Unfortunately, this goal is not achieved yet by many developing countries across the globe.^[5] A study conducted in the West Region

of Cameroon showed that 85.9% of children were completely immunized according to parent's recall and vaccination card while 84.5% were fully vaccinated according to the vaccination card record.^[6] Whereas according to Malaysian study, 4.5% were partially immunized and 0.1% received no vaccine at all.^[7] However, in Afghanistan, only 51% of children were completely vaccinated,^[8] while in India, 53% were fully vaccinated.^[9]

Therefore, assessment of mother's knowledge, perception and practice of childhood immunization in Pakistan has become the hour's need. This study was aimed to assess immunization perception and awareness among mothers attending OPD of a tertiary care hospital in Karachi.

MATERIALS AND METHODS

This was a hospital-based cross-sectional study. Data were collected from mothers attending OPD of a tertiary care hospital,

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i.e., Civil Hospital Karachi. The study was conducted during December 2015–January 2016. The sample size was 200. Non-probability convenient sampling technique was used. We included those mothers who consented to participate, visiting OPD of a tertiary care hospital, i.e. Civil Hospital Karachi during December 2015–January 2016 and mothers <50 years of age. We excluded those mothers who did not consent despite adequate explanation, and mothers older than 50 years. Data collected from mothers included mother's age, mother's highest educational level, reason of non-immunization, socioeconomic status, religion, ethnicity, area of residence, total number of pregnancy and live birth, immunization status of mother during pregnancy against tetanus, number of children under 5 years of age, and immunization status of children. We used self-administered, closed-ended cross-sectional interviewer-administered the questionnaire in English and Urdu language after informed consent. We briefed the patients regarding the main objective of this study and assured them of their confidentiality and autonomy of the responses. Data entry and analysis were done using SPSS version 16.0. $P < 0.05$ was considered significantly positive. The authors declared that there were no conflicts of interest. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

RESULTS

A total of 200 mothers participated. As far as the age of mothers is concerned, 25 (12.5%) were <20 years of age, 58 (29.0%) mothers were 21–25 years, 64 (32.0%) mothers were 26–30 years old, and 32 (16.0%) were 31–35 years while 21 (10.5%) mothers were 36–40 years of age.

Among them, 119 (59.5%) had no formal education, 23 (11.5%) and 17 (8.5%) were educated till primary and secondary, respectively, 27 (13.5%) did matriculation, 12 (6.0%) did intermediate while 2 (1.0%) did graduation and above.

Regarding monthly income, 18 (9.0%) were unemployed earning member in the family, 56 (28%) mothers received <Rs.10,000/- 101 (50.5%) mothers received Rs.11,000–20,000/month, 10 (5.0%) and 11 (5.5%) earned Rs.21,000–30,000/-, and more than Rs.30,000/-. However, 4 (2.0%) of them were not willing to tell us the exact amount.

In terms of religion, 196 (98.0%) were Muslims, 3 (1.5%) were Hindus, while, 1 (0.5%) of them was Christian.

As far as ethnicity is concerned, 60 (30.0%) of them were Pathans. Whereas, 28 (14.0%), 10 (5.0%), 36 (18.0%), and 23 (11.5%) were Punjabi, Hazaray walay/Saraiki, Baloch, and Mahajir, respectively, while 34 (17.0%) and 7 (3.5%) mothers were Sindhi, Maheshwari/Marvari and Memon, respectively.

However, 180 (90.0%) were living in urban areas, while, 20 (10.0%) belonged to rural areas.

Of these, 187 (93.5%) had awareness about EPI, 179 (89.5%) considered them advantageous for health, while, 20 (10.0%) assumed they were neither advantageous nor harmful. However, 1 (0.5%) considered it hazardous for health. Those who considered EPI hazardous for health or neither advantageous nor harmful,

overall, expressed their opinion about EPI as 5 (2.5%) considered these vaccines to have contraceptive effect, 2 (1.0%) thought they aggravate illness in a child, hence child should not be immunized, whereas 193 (96.5%) considered them necessary for health.

A total of 177 (88.5%) kids were vaccinated. Among these, 10 (5.0%) were vaccinated at birth only, 66 (33.0%) were vaccinated until 9 months, 68 (34.0%) until 15 months, 9 (4.5%) until 2 years, whereas, and 24 (12.0%) until 5 years.

Total number of pregnancy and live births, total number of immunized kids, mother's immunization against tetanus during pregnancy, number of tetanus doses during pregnancy, and total number of kids under 5 years of age were also asked [Table 1].

Recently, 176 mothers have kids of <5 years of age at home. As far as immunization status of these kids <5 years of age was concerned, 129 (64.5%) were fully vaccinated, and 56 (28.0%) were partially vaccinated while 15 (7.5%) received no vaccine at all.

However, only 144 (72.0%) mothers were vaccinated against tetanus during pregnancy [Table 1].

Around 23 (11.5%) kids were non-vaccinated. Most common reason for non-immunization among these 23 kids was lack of awareness (47.8%) as told by the 11 mothers [Figure 1].

Highest proportion of mothers (192 = 96.0%) agreed that EPI promotes healthy growth of a child. Whereas, 139/200 (69.5%) favored that EPI should be offered at doorsteps. However,

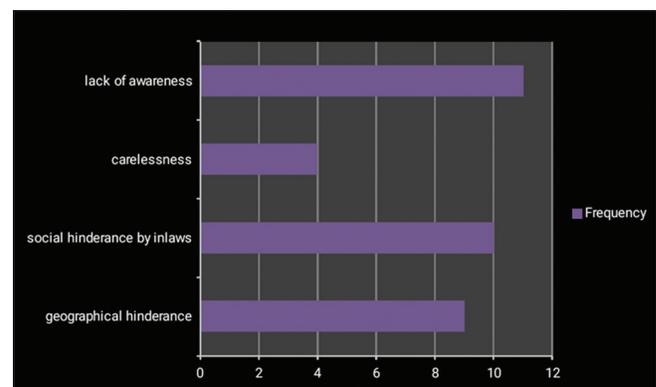


Figure 1: Reason of non-immunization

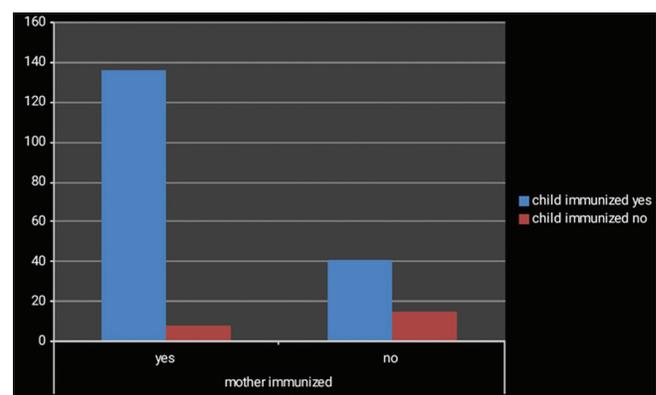


Figure 2: Immunization status of mother and their children

Table 1: Immunization status of children and their mothers

Variables	Frequency (%)
Total number of pregnancy	
<5	159 (79.5)
6–10	40 (20.0)
>11	1 (0.5)
Total number of live births	
<5 children	175 (87.5)
6–10 children	24 (12.0)
>11 children	1 (0.5)
Total number of immunized kids	
None of them	17 (8.5)
1 child	70 (35.0)
2 children	62 (31.0)
3 children	30 (15.0)
4 children	11 (5.5)
5 children	6 (3.0)
6 children	3 (1.5)
7 children	1 (0.5)
Mother's immunization against tetanus during pregnancy	
Vaccinated	144 (72.0)
Non-vaccinated	56 (28.0)
Number of tetanus doses during pregnancy	
No dose	57 (28.5)
1 dose	4 (2.0)
2 doses	102 (51.0)
3 doses	37 (18.5)
Total number of kids <5 years	
No child <5 years	24 (12.0)
1 child	84 (42.0)
2 children	63 (31.5)
3 children	25 (12.5)
4 children	4 (2.0)

61 (30.5%) did not support this idea. One of them (0.5%) also suggested that awareness must be spread in this regard while pneumonia prevention strategies should be introduced.

Immunization status of mother and their kids were related ($P < 0.05$) [Figure 2].

Awareness about EPI was related ($P < 0.05$) with the immunization status of the child as well as with the age of the mother, socioeconomic status, and residence. The immunization status of child was statistically related with the age at which they received last vaccine ($P < 0.05$) while education of the mother and awareness about EPI was not related statistically.

DISCUSSION

Despite the introduction and implementation of EPI, many children of the developing countries still remain either partially vaccinated or non-vaccinated. Pakistan is one of them, where their significant proportion remains either partially vaccinated or non-vaccinated at all.^[10]

Our study showed that in Karachi, recently, 176/200 interviewed mothers (88.0%) had kids <5 years of age. Among the kids of

these mothers, only 129 (64.5%) kids <5 years of age were fully vaccinated, 56 (28.0%) kids were partially vaccinated while 15 (7.5%) of them received no vaccine at all. This proportion was slightly higher as compared to a study at Myanmar, which exhibited 25.8% of kids were partially immunized.^[11] Whereas, another Pakistani health survey in 2007–2008 showed only 66% of the children under 5 years of age were partially vaccinated.^[12] The reduction in the proportion of partially vaccinated kids, no doubt suboptimal, but indicated an increasing number of children receiving minimally some of the vaccines according to EPI and improvement in the implementation of EPI as it was previously.

The sociodemographic status matters as well. Most of the mothers were young (26–30) years old (32.0%), and the majority had no formal education (59.5%). There were still a few kids, who were partially vaccinated while numerous remained non-vaccinated. Despite this, formal education and awareness were not statistically related with EPI. This was contrary to a previous study in Karachi, which showed that designing a simple educational intervention improved the vaccination rate for hepatitis B/DPT by 39%.^[13]

Awareness about EPI was also related with the age of mother and immunization status of child. This was also depicted by a study of Haryana, India, which showed that awareness was interlinked with the age of mother and immunization status of child.^[14] Socioeconomic status and residence had great impact on routine immunization. Low socioeconomic status and area of residence were also focused by a study in Vietnam, stating these as causative factors for variations in timely immunization.^[15] Area of residence and immunization status was also focused in another study conducted at Burkina Faso.^[16] Ethnicity and awareness about immunization were interlinked. This was also supported by a similar study in Karachi.^[17]

Immunization status of mother against tetanus during the antenatal period and immunization status of a child were interlinked. This was also consistent with an Indian study, exhibiting that those mothers who did not receive tetanus during pregnancy were likely to show ignorant behavior toward child immunization as well.^[9]

According to our study, 93.5% of respondents visiting OPD of tertiary care hospital had awareness about EPI, and 96.0% agreed that EPI promotes healthy growth of a child. It was similar to a previous study, in terms of awareness about polio immunization, where 96% of respondents had awareness.^[18] Participants in our study also suggested (69.5%) that EPI should be offered at doorsteps just like polio vaccine. They appreciated the idea to organize awareness programs related to EPI and pneumonia prevention strategies.

The most common reason for non-vaccination was lack of awareness. Other reasons were social hindrance by family members, geographical hindrance (in terms of being short of money in reaching health-care facility, or residing in area situated far away from health-care facilities), carelessness and ignorant attitude of mothers while other reasons included financial hindrance. This was in contrast to an American study, stating non availability of vaccines to be the most common cause according to 56% mothers, whereas lack of awareness was the second most common cause, according to 16%.^[19] In China, lack of supplies

and awareness was the causes as well.^[20] Previous Pakistani researches showed that missing vaccination card was the most common reason for dropping out of EPI.^[21] Another study showed misconceptions, unawareness and geographical hindrance to be the primary causes.^[22]

We recommend that not only mothers should be educated regarding the significance of immunization on child's health and EPI but also every member of the community must be made aware in this aspect.^[15,23] We also put forward the suggestion of offering EPI at doorsteps just like polio vaccine, as suggested by 69.5% of the mothers. Awareness programs related to EPI must be organized, and pneumonia prevention strategies should be discussed with them.

Since we used self-administered questionnaire, we could not exclude the information bias. It might be a significant hindrance in evaluating a meaningful relationship and a trend.

We recommend future study in this regard which could achieve data not only from other tertiary care hospitals but also from primary and secondary health-care facilities.

CONCLUSIONS

Vaccination coverage was still suboptimal. Majority of the mothers had awareness about EPI, but, a few of them were still unaware and held a very low opinion about the concept of immunization. Most of the mothers were young and had no formal education. Still, a few kids were partially vaccinated while numerous remained non-vaccinated. Most common reason for non-immunization was lack of awareness. Therefore, awareness programs emphasizing the significance of immunization, especially EPI for vaccine-preventable diseases, should be conducted to improve the knowledge, perception, and attitude of mothers about immunization. Furthermore, policies should be introduced and implemented in this regard. Mothers should be counseled regarding timely vaccination, and their queries must be addressed. EPI should be offered at doorsteps like polio eradication programs in rural areas so that geographical hindrance will no longer remain an issue. Awareness programs about pneumonia prevention strategies should be conducted as well.

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