Original Research Article

A study to assess the effectiveness of short training session on immunization knowledge of mothers attending immunization clinic

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Abstract

Background: Awareness of the parents especially mothers towards the vaccination is very important in achieving success in the development of sufficient immunity among the children. It has been observed that some parents have negative approach towards vaccinations. Therefore it is very necessary to educate the parents especially mothers regarding the importance of vaccination. It has been observed that mothers are usually not included the awareness programmes for various health diseases. **Aim:** To evaluation of change in knowledge of mothers about vaccination and other important aspects of immunization after a short training intervention programme at the clinics for immunization. **Methods and Materials:** 360 mothers arriving at the clinic for immunization were included in this study. The study participants were told about the intervention programme and their informed consent was observed. A questionnaire was provided to them consisting of questions for evaluating their knowledge regarding essential vaccines and other aspects of immunization. Then they were provided with short training of 40-45 minutes by two trained experts. After training programme there was evaluation of the change in knowledge regarding essential vaccines and other aspects of immunization through tests. **Results:** When there was analysis of the percentage of study subjects giving response about the mandatory vaccination in the mothers before and after intervention then it was observed that there was statistically significant difference in the knowledge of mothers about various essential vaccines after carrying out intervention programme. (p=0.002). When there was evaluation of change in knowledge of the study subjects about the other aspects of immunization after the intervention programme then it was found that there was significant increase in the knowledge of the mothers.(p-0.001). On carrying out analysis of the score obtained in test before and after intervention programme regarding knowledge about mandatory vaccination and other aspects of immunization then it was observed that there was statistically significant increase in the score regarding knowledge about the essential vaccine and other significant aspects of immunization (p=0.002) after the intervention programme. **Conclusion:** It was concluded that there was significant increase in the knowledge of the mothers about the essential vaccines and other important aspects of immunization after ashort training programme at the immunization clinics.

Keywords: Immunization clinic, mothers, short training programmes

Introduction

Invention of vaccines is considered as vital invention in the medical healthcare. It is an important step in the welfare of the human kind. Vaccines are one of the most important means for prevention of rapidly spreading communicable diseases and pandemics like COVID 19. Vaccines are relatively safer and economical measure for prevention of the diseases. Besides they are quite effective in their effects. These vaccines are usually administered in the children aged below five years. In order to reduce the occurrence of several diseases government of country carries out an immunization programme. One of the most important aspect of this programme is raising the levels of immunization in the children below the age of five years[1,2].

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This immunization programme is carried out with an objective of raising the rates of vaccination to reduce the incidence of diseases prevented by means of vaccination targeting the people groups in which the chances of developing these diseases is greater to reduce the mortality and morbidity in these people. One of the important aspect of vaccination in children is the practices of the provider of the health services. This aspect has been supported by sufficient evidence from the pre-existing literature. In order to increase the survival of children from several diseases there is need to strengthen the routine immunization programme in children. It has been observed that well equipped workforce for vaccination programme is important aspect for achieving maximum coverage of vaccination[3,4].

Awareness of the parents especially mothers towards the vaccination is very important in achieving success in the development of sufficient immunity among the children. It has been observed that some parents have negative approach towards vaccinations. Therefore it is very necessary to educate the parents especially mothers regarding the importance of vaccination. It has been observed that mothers are usually not included the awareness programmes for various health diseases. In some previous studies it has been found

that knowledge, literacy and education of mothers are significantly related with the proper immunization of the children. Prevalence of diseases among the children was reduced when the mothers were educated and well awared about the various health issues[5,6].

Therefore there is need to carry out educational programmes to educate the mothers about the importance of vaccinations. In this study there was evaluation of change in knowledge of mothers about vaccination and other important aspects of immunization after a short training intervention programme at the clinics for immunization.

Methods and materials

Study design

The purpose of this study was to look into the crucial aspects of immunization in terms of mothers' knowledge and attitudes when they went to the immunization clinic for their children's vaccination. An experimental design with a pre-test and post-test was used. To collect socio-demographic data and assess knowledge, a structured questionnaire was created. On the basis of relevant literature, the knowledge questions were formulated in simple language for clarity and easy of understanding. Mothers were informed about the study's nature and objective. The study was conducted with the agreement and cooperation of the moms. Her basic information, such as her name, age, and education, was gathered.

The Questionnaire was created to address a variety of routine aspects of immunization and necessary vaccines for children. Before giving brief transitory training, a pre-test assessment to determine knowledge about immunization and obligatory vaccine among mothers was conducted, and a post-test evaluation was conducted shortly after the training was completed. The identical questionnaire was used for both the pre- and post-test assessments.

Sampling technique

We included the first 60 mothers of children under the age of five who were registered in the OPD/Immunization clinic in each month from May 1st to October 30th, 2021, by simple random sampling. We enrolled 360 moms who came to the immunization clinic and agreed to a 30-45 minute temporary training and a pre- and post-test questionnaire. The questionnaire had 11 questions about immunizations and 11 questions about obligatory vaccines. A score of one was assigned to each right answer. As a result, for each immunization element and mandatory vaccine answer, the exam had a maximum score of 360 in both the pre and post tests. The information gathered was statistically examined.

Ethical consideration and permission

The Central Research Committee of our college provided ethical clearance. Permission to perform the study was acquired from the appropriate authorities. Each participant in the study gave their oral consent. Under the supervision of the lead investigator, all data was kept private.

Data collection

There were three components of the questionnaire used to evaluate immunization providers before and after the intervention: The participants' socio-demographic variables were examined in Section A. Section B measured their knowledge of vaccination aspects, while Section C measured their understanding of individual mandatory vaccines. The questionnaire's questions were derived from the World Health Organization's vaccine training question database[8].

We gave mothers with ad hoc information to help them fill in the gaps in their immunization knowledge. Following the pre-intervention assessment with questionnaire, the session included an on-the-spot 30 to 45 minute immunization refresher transient information was provided with the help of two posters demonstrations, one for different aspects of immunization and the other for compulsory vaccine knowledge.

Data analysis

A Microsoft Excel sheet was used for data entry and analysis. Age, educational background, and socioeconomic level of participants are examples of sociodemographic factors. The sum of the scores for each observation session was then added up for each point of evaluation. Individuals' approximate scores were compared before and after temporary training using a paired t-test with training intervention. P=0.05 was chosen as the statistical significance level.

Results

When there was analysis of the percentage of study subjects giving response about the mandatory vaccination in the mothers before and after intervention then it was observed that there was statistically significant difference in the knowledge of mothers about various essential vaccines after carrying out intervention programme. (p=0.002) (Table1). It was observed that 51.5% of study subjects knew about the vaccine for tuberculosis and BCG before intervention. But it raised to 91.9 % after the intervention programme. 34.7% study subjects knew about the vaccine DPT before intervention programme but after intervention it got raised to 82.3%. It was found that 90.3% of study subjects had knowledge about polio vaccine before the training programme while it increased upto 96.7% after the training programme. When study subjects were inquired about the tetanus vaccine then it was found that 61.5% study subjects were found to have knowledge about vaccine but increased upto 77.5% subjects after the short training programme. Study subjects were also inquired about their knowledge about Hepatitis B vaccine then 42.3 % subjects were found to have knowledge about vaccine but again there was increase in the percentage of study subjects (70.2%) having knowledge about the vaccine after training programme. 35.5% of study subjects knew about vaccine for Pneumonia before training programme. It increased upto 63.1% after short training programme. (Table1).

Table 1: Data regarding the change in knowledge about mandatory vaccination

Vaccine name	**Percentage of study subjects giving response after intervention**	**Percentage of study subjects giving response before intervention**
	(n=360)	**(n=360)**
	(%)	(%)
Vaccine for Tuberculosis/BCG	91.9	51.5
Vaccine for Diphtheria+ Pertussis+ Tetanus (DPT)	82.3	34.7
Vaccine for Diphtheria+ Tetanus (DT)	83.1	33.9
Vaccine for Polio (OPV)	96.7	90.3
Vaccine for Polio (IPV)	83.1	36.3
Vaccine for Pentavalent	84.7	58.3
Vaccine for Tetanus/TT	77.5	61.5
Vaccine for Measles	74.3	47.1
Vaccine for Hepatitis B	70.2	42.3
Vaccine for Pneumonia/HiB	63.1	35.5
Vaccine for Rota-virus	64.2	24.3
Mean score	79.12	46.89

Standard deviation	27.623	46.70
P value (t test)	0.002 (Statistically significant)	

When there was evaluation of change in knowledge of the study subjects about the other aspects of immunization after the intervention programme then it was found that there was significant increase in the knowledge of the mothers. When study subjects were inquired about benefits of vaccination then 71.5% subjects were found to have knowledge about the benefits of vaccination before intervention programme but it raised upto 93.9% after the intervention programme. 83% of study subjects were found to have knowledge about suitable age for the beginning of vaccination programme but it increased upto 92.3%. It was found that 69.5% of study subjects were found to have knowledge about suitable age for completition of vaccination schedule before intervention but it increased upto 93.5%. (Table2). When there was evaluation about the age upto which the polio drops should be given to children then it was found that 82.3% of the study subjects were found have knowledge about this aspect but it increased upto 98.7% after the intervention programme.

Table 2: Data regarding the change in knowledge about other other aspects of immunization

Serial Number	Questions Asked with study subjects	Percentage of study subjects giving response after intervention	Percentage of study subjects giving response before intervention
1	What are benefits of vaccination?	93.9	71.5
2	What is the age for starting of vaccination?	92.3	83
3	What is the age of completition of vaccination?	93.5	69.5
4	Whether vaccines are different in females and males?	95.1	66.3
5	What are the benefits if vaccine is taken later after the dose is being missed?	94.9	45.5
6	Whether vaccine can be administered to children?	85.9	24.59
7	Whether vaccination is related with side effects?	75.1	17.5
8	Whether growth of child can be monitored with the help of vaccine card?	85.9	35
9	Whether you are awared with the benefits of Vitamin A vaccine ?	94.3	13.5
10	Whether application of cream and ointment can be carried out at the papule developed at the site of injection?	98.7	40.3
11	What should be the age upto which the drops of polio vaccine can be can be administered Polio drops?	98.7	82.3
Mean of correct No.	48.3	43.5	90.75
SD of correct No.	60.43		

Table 3: Analysis of the score obtained in test before and after intervention programme regarding knowledge about mandatory vaccination and other aspects of immunization.

Aspect of knowledge	Score of knowledge		Calculation Mean difference (percentage difference)	Data of t value	Data of P value
	Mean of score of test before intervention	Mean of score of test after intervention			
Knowledge about mandatory vaccine	46.70	27.63	33.41	25.20	0.002
Knowledge of other aspects of immunization	60.43	18.10	43.5	28.26	0.002

On carrying out analysis of the score obtained in test before and after intervention programme regarding knowledge about mandatory vaccination and other aspects of immunization then it was observed that there was statistically significant increase in the score regarding knowledge about the essential vaccine and other significant aspects of immunization (p=0.002) after the intervention programme. (Table3).

Discussion

The importance of parents, particularly mothers, being aware of the need of vaccination in the establishment of adequate immunity in children cannot be ignored. Some parents have been reported to have a negative attitude about immunizations. As a result, it is critical to educate parents, particularly mothers, about the necessity of immunization. It has been noticed that moms are frequently excluded from various health-awareness programmes[9,10].

Previous research has discovered that mothers' knowledge, literacy, and education are strongly linked to their children's good immunization. When moms were educated and well-informed about numerous health issues, the prevalence of diseases among children was lowered. As a result, educational programmes to inform mothers about the necessity of immunizations are required. The change in knowledge of mothers regarding vaccination and other critical components of immunization after a short training intervention programme at immunization clinics was evaluated in this study[11,12].

When the percentage of study respondents who responded about mandatory vaccination in mothers before and after intervention was compared, it was discovered that there was a statistically significant difference in mothers' knowledge of numerous necessary vaccines

after the intervention. Before the intervention, 51.5 percent of the study participants were aware of the tuberculosis vaccine and BCG. However, after the intervention programme, it increased to 91.9 percent. Before the intervention programme, 34.7 percent of study participants were aware of the DPT vaccine, but this number rose to 82.3 percent following the intervention. Before the training session, 90.3 percent of study subjects knew about the polio vaccine, but that number jumped to 96.7 percent following the training programme. When study participants were asked about the tetanus vaccine, it was discovered that 61.5 percent had prior awareness of the vaccine, which increased to 77.5 percent after the short training programme. When study subjects were asked about their awareness of the Hepatitis B vaccine, 42.3 percent of them said they knew about it. However, after the training programme, the number of study subjects who knew about the vaccine increased to 70.2 percent. Before the training programme, 35.5 percent of the trial participants were aware of the Pneumonia vaccine. After a short training session, it increased by up to 63.1 percent.

Vaccine development is seen as a critical advancement in medical care. It's a significant step forward for humanity's well-being. Vaccines are one of the most essential tools for preventing diseases and pandemics that spread quickly, such as COVID 19. Vaccines are a relatively safe and cost-effective method of disease prevention. Aside from that, their effects are pretty effective. These immunizations are often given to children under the age of five[13,14].

The government of the country runs an immunization programme in attempt to prevent the occurrence of many diseases. One of the most essential aspects of this approach is increasing immunization rates among children under the age of five. This immunization programme is carried out with the goal of increasing vaccination rates in order to reduce the incidence of diseases that can be prevented by vaccination targeting the people groups who have a higher risk of developing these diseases, thereby lowering mortality and morbidity in these people. The practises of the supplier of health care are an important part of immunization in children. The pre-existing literature has provided adequate evidence to support this claim. It is necessary to boost the routine immunization programme in children in order to increase the survival of children against a variety of diseases. It has been discovered that having a well-equipped crew for vaccination programmes is critical to achieving maximal immunization coverage[15-17].

When the change in knowledge of the study subjects concerning other aspects of immunization was evaluated following the intervention programme, it was discovered that the mothers' knowledge had significantly increased. When research participants were asked about the benefits of vaccination, 71.5 percent said they knew about them before the intervention programme, while 93.9 percent said they knew about them after the intervention programme. It was discovered that 83 percent of study participants knew the appropriate age to begin the immunization programme, but this number increased to 92.3 percent. Prior to intervention, 69.5 percent of study subjects had awareness of the appropriate age for completion of the immunization schedule, but this climbed to 93.5 percent after intervention.

Then the age at which polio drops should be given to children was evaluated, it was discovered that 82.3 percent of the study volunteers had knowledge of this feature, but this jumped to 98.7 percent after the intervention programme. After analysing the test results for knowledge about mandatory vaccination and other aspects of immunization before and after the intervention programme, it was discovered that there was a statistically significant increase in knowledge about the essential vaccine and other significant aspects of immunization after the intervention programme.

Conclusion

It was concluded that there was significant increase in the knowledge of the mothers about the essential vaccines and other important aspects of immunization after ashort training programme at the immunization clinics.

Conflict of Interest: Nil Source of support: Nil

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