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EFFECTIVENESS OF EDUCATIONAL PACKAGE ON LEVEL OF KNOWLEDGE AND ATTITUDE REGARDING MISSION INDRADHANUSH AMONG MOTHERS OF UNDER FIVE CHILDREN IN SELECTED URBAN SLUM AREA, BENGALURU, INDIA

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Immunization is one of the most important public health interventions to reduce child mortality associated with infectious diseases. Mission Indradhanush was launched in December 2014 and aimed to fully immunize more than 90% of newborns and pregnant mothers by 2020 through innovative and planned approached to reach all children.
Aim of the Study: To assess the effectiveness of educational package on Mission Indradhanush among mothers of under five children.
Methodology: Quasi -Experimental study, one group, pre-test and post-test design was used .The data collection period was 1 month. Simple Random sampling technique was used to select 60 mothers of under five children. Data was collected using structured questionnaire and checklist.
Results: The mean knowledge score in pre-test was 10.17 with SD of 4.49 and the mean attitude score was 30.58 with SD of 2.39. Where as in the post test the mean knowledge score was found 17.00 with SD of 3.36 and attitude score was 37.21 with SD of 2.50. Paired t-test shows that there was statistical significance at $p<0.001$ level. It showed, there was an establishing impact of educational package on knowledge and attitude regarding Mission Indradhanush among mothers of under five children and there was significant linear correlation ($r=0.486$) between knowledge and attitude regarding Mission Indradhanush among mothers of under five children at $p<0.05$ level.
Conclusion: The study concluded that the educational package was effective in improving the level of knowledge and attitude regarding Mission Indradhanush among mothers of under five children.

Keywords: Mission Indradhanush; immunization; effectiveness; educational package; under-fives.

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1. INTRODUCTION

'Today's healthy children are the future healthy citizen of the country'. According to 2011 census children population of 0 to 6 years is 158.8 million which represents 13.12% of the total population [1]. Each year 27 million children are born in India. Around 10 per cent of them do not survive 5 years of age [2]. India contributes to 25 per cent of the over 6.9 million under five death occurring worldwide over years [3]. More than one million children and pregnant mothers can be saved from death by immunizing them at the right age and right time and by completing the full course of immunization [3]. The Government of India is committed to reducing child mortality and morbidity in the country by improving full immunization coverage through Universal Immunization programme (UIP) and introducing new and efficacious vaccines for vaccine preventable diseases [4]. In spite of all positive changes, there are ongoing challenges for UIP. Despite being operational for the past more than 30 years, only 65% children (RSOC 2013-2014) in India receive all vaccines during their first year of life. It is estimated that annually more than 89 lakh children majorly in hard to reach and underserved population do not receive all vaccines that are available under Universal Immunization programme – the highest number compared with any other country in the World [5].

Committed to improving immunization coverage and addressing the equality agenda, the Ministry of Health and Family Welfare, Government of India, has implemented various intensification strategies including its flagship programme "Mission Indradhanush" launched in December 2014, and delivery system strengthening exercises through improved micro-plans [6]. Mission Indradhanush is a special drive to vaccinate all unvaccinated and partially vaccinated children under Universal Immunization Programme. The mission focuses on intervention to improve full immunization coverage in India from 65% in 2014 to at least 90% children in the next five years [4]. Mission Indradhanush aimed to fully immunize more than 90% of newborns by 2020 through innovative and planned approaches to reach all children. It not only aimed to rapidly increase the immunization coverage through special drives during specified months but also focused towards strengthening health system for addressing equality issues in access to immunization. This initiative will eventually close immunity gap and strengthen immunization coverage [4]. Mission Indradhanush contributed to an increase in Full Immunization Coverage by 6.7%, as evidenced by Integrated Child Health and Immunization Survey (INCHIS). This increase would not be sufficient to achieve Full Immunization Coverage of more than 90% of newborns by 2020 as aimed under Mission Indradhanush.Further, Full Immunization Coverage in selected disticts/cities that have shown slow progress in spite of repeated phases of Mission Indradhanush [5].

Evidence shows that unimmunized and partially immunized children are most susceptible to childhood disabilities and run a 3-6 times higher risk of death as compared with fully immunized children. From studies conducted in Karnataka, it has been found that there is an 85% short of the coverage mark with only 34.8% fully immunized while a study conducted at Punjab reveal that the lack of knowledge of the families were the main reason for partial and non-immunization of their children. Thus, this study aims to build up the knowledge gap and assess the effectiveness of educational package on Mission Indradhanush among mothers of under-five children as well as their attitude level [4].

1.1 Objectives

1. To assess the existing level of knowledge and attitude regarding Mission Indradhanush among mothers of under-five children.
2. To assess the post-test level of knowledge and attitude regarding Mission Indradhanush among mothers of under five children.
3. To assess the effectiveness of educational package on knowledge and attitude regarding Mission Indradhanush among mothers of under five children.
4. To determine the correlation between knowledge and attitude regarding Mission Indradhanush among mothers of under five children.
5. To associate the pretest level of knowledge and attitude regarding Mission Indradhanush among mothers of under five children with their selected demographic variables.

2. METHODOLOGY

A quasi-experimental design was selected for this study to determine the effectiveness of educational package on level of knowledge and attitude regarding Mission Indradhanush among mothers of under-five children, Kengeri Upanagar urban slum area, Bengaluru. Mothers of under-five children residing in Kengeri Upanagar urban slum area, Bengaluru and understanding either Kannada or English were included in the study. Simple random technique was adopted and a total of 60 mothers were part of the study. After explaining the purpose of the study to the respondents, informed consent was taken from each of

them. A pre-validated questionnaire was used consisting of three sections. Section A includes the demographic variables, Section B includes a structured interview schedule to assess the level of knowledge and Section C is a three point Likert scale used to assess the attitude of mothers of under-five children regarding Mission Indradhanush. A pre-test and post-test was conducted after the educational package intervention. For assessing knowledge, a score of '0' was awarded for wrong response while '1' for a right response. The highest possible score that can be attained is 22. The scores were categorized as inadequate knowledge (<50%), moderate knowledge (50-75%) while Adequate knowledge (> 75%). In pertinence to assess the attitude, for positive questions- a score of 3 for agree, score of 2 for uncertain and score of 1 for disagree and vice versa for negatively framed questions. The highest possible score was 42 and the scores were categorized as Unfavorable attitude (<50%), Neutral attitude (50-75%) and Favorable attitude (>%75%). Data collection was for four weeks after conducting the pilot study for four week in Gandhi gram urban slum area Bengaluru.

3. RESULTS

A total of 60 mothers of under-five children were enrolled in the study. Of the 60 respondents, 28 (46%) of the respondents belonged to 21-25 years age group. Most of the respondents followed Hindu religion (70%) and were homemakers (38.3%). Almost quarter (25%) completed their primary schooling. Table 1, shows the frequency and percentage distribution of selected demographic variables of mothers of under five children according to family income per month (in rupees), type of family, number of children, immunization status of children, knowledge about Mission Indradhanush and sources of information.

In the pre-test conducted among the mothers of under-five, 45 (75.0%) of mothers had inadequate knowledge, 11 (18.3%) had moderate knowledge and 4 (6.7%) had adequate knowledge. Pertaining to the attitude, 40 (66.7%) of mothers had neutral attitude and 20 (33.3%) had favorable attitude. In the post-test, 26 (43.3%) of mothers had developed moderate knowledge, 34 (56.7%) of mothers developed adequate knowledge and 60 (100%) had developed favorable attitude.

Table 2 shows the effectiveness of the educational package on the knowledge of 'Mission Indradhanush' among the mothers of the under-five. The educational package carried out shows a high statistical significant difference in pre-test and post-test with 't' value 14.45 (p value: <0.001). It could be interpreted that the educational package given enhanced the knowledge about 'Mission Indradhanush' among the mothers of the under-five.

Table 1. Frequency and percentage distribution of demographic variables of the mothers according to occupation, family income per month in rupees, type of family, number of children, immunization status of the children, previous information about Mission Indradhanush and the sources of information

Demographic Variables	Frequency	Percentage
Family income (rupees/month)		
a.≤10,000	37	61.7
b.10,001-15,000	16	26.7
c.15001 and above	7	11.7
Type of family		
a. Nuclear family	17	28.3
b. Joint family	38	63.3
c. Extended family	5	8.3
Number of children		
a. 1	27	45.0
b. 2	22	36.7
c. 3 or more	11	18.3
Immunization status of children		
a. Fully immunized	42	70.0
b. Partially immunized	15	25.0
c. Drop out	3	5.0
Have you heard about Mission Indradhanush?		
a. Yes	24	40.0
b. No	36	60.0
If yes, specify the sources of information (n=24)		
a. Health personal	13	54.2
b. Family member	5	20.8
c. Mass media	6	25.0

Table 2. Effectiveness of the educational package on the knowledge of 'Mission Indradhanush' among the mothers of the under-five (n=60)

Variable	Pre-Test	Post-Test	't' value	p value
	Mean ± SD	Mean ± SD		
Knowledge	10.17± 4.49	17 ±3.36	14.45	0.001*

P value: 0.05 significant, SD: Standard deviation*

Table 3. Effectiveness of the educational package on the attitude to 'Mission Indradhanush' among the mothers of the under-five (n=60)

Variable	Pre-Test	Post-Test	't' value	p value
	Mean ± SD	Mean ± SD		
Attitude	30.58± 2.39	37.2 ±2.50	11.16	0.001*

P value: 0.05 significant, SD: Standard deviation*

Table 4. Correlation between the knowledge and attitude regarding Mission Indradhanush among mothers of under five children

Variables	Mean	SD	r	p-value
Knowledge	10.17	4.49	0.486*	p<0.05
Attitude	30.58	2.39		

P value: 0.05 significant*

Table 3 shows the effectiveness of the educational package on the attitude to 'Mission Indradhanush' among the mothers of the under-five. The educational package carried out shows a high statistical significant difference in pre-test and post-test with 't' value 11.16 (p value: <0.001). It could be interpreted that the educational package positively improved the attitude towards 'Mission Indradhanush' among the mothers of the under-five.

Table 4 shows the Karl Pearson's correlation (r=0.486) between knowledge and attitude regarding Mission Indradhanush among mothers of under five children was found to be statistically significant (p value <0.05). There was significant trend in increase of attitude with the increase in knowledge through the regression model (Attitude = 27.29 +0.34 x Knowledge). The coefficient of determination r^2=0.24, implying the chance of increase in attitude was by the influence of 24.0% increase of knowledge and remaining influence was due to other factors.

The selected demographic variables that were found to be significantly associated with the pre-test level knowledge regarding 'Mission Indradhanush' were the occupation, number of children and to the previous knowledge of the mothers of the under-five about Mission Indradhanush. Homemakers were found to have more than the median level of knowledge compared to other occupation. As compared to mothers with one and three or more children, mothers with two children were found to have more than the median level of knowledge. Also, those mothers who have a previous knowledge about Mission Indradhadush were also found to have more than the median level knowledge. In pertinenceto the pre-test attitude regarding Mission Indradhanush-theeducational qualification and occupation were found to be significantly associated. Mothers who had completed graduation and mothers who are home makers were found to have more than the median level of attitude.

4. DISCUSSION

The present study revealed the effectiveness of the educational package on knowledge and attitude regarding 'Mission Indradhanush' among the mothers of under-five children. From the current study, the pre- test level of knowledge regarding 'Mission Indradhanush' among mothers of under five children revealed that 45 (75.0%)of mothers had inadequate knowledge ,11 (18.3%) had moderate knowledge and 4 (6.7%) had adequate knowledge .All the pre-test knowledge ranged within 3-19, mean was 10.17 (SD ±4.49) and mean percentage was 46.2%. We found that 40 (66.7%) of mothers had neutral attitude and 20 (33.3%) had favorable attitude in the pre- test level of attitude regarding Mission Indradhanush. The attitude scores ranged between 27-36, mean 30.58 (SD ± 2.39) and mean percentage 72.8%. The current study finding is consistent with a non-experimental study carried out at Kunderki U.P, India which concluded majority (66.66%) of the mothers of the underfive having poor knowledge regarding immunization followed by 23.34% and 10% with average knowledge and good knowledge respectively. Another study conducted at Mangalore among mothers of under-five concluded that even though the mothers had good attitude regarding vaccines but they were unaware of Hib vaccine and rotavirus vaccine and awareness should be created among mothers [7].

This finding is similar to the current study where 3/4th of the mothers showed favorable attitude but 75% of them had inadequate existing knowledge regarding 'Mission Indradhanush. (This finding can be attributed to the perceived importance regarding immunization whereby the mothers have a favorable attitude towards 'Mission Indradhanush' despite the inadequate knowledge. It can also be related to the successful diffusion of health awareness regarding its importance by the health workers).

With respect to the post-test level of knowledge and attitude regarding Mission Indradhanush, we found that 43.3% among the mothers \of the under five children had moderate knowledge while others had adequate knowledge. The post test scores were ranging between 11-22 with a 17 (±3.36) and a mean percentage of 77.3. All (100%) mothers developed a favorable attitude regarding MisiionIndradhnush in the post-test level attitude. The scores ranged between 33-42 with a mean 37.21 (±2.50) and a mean percentage of 88.6.

The educational package carried out among the mothers of the under-five showed an effectiveness of the intervention with 't' value of 14.45 which was also found to be statistically very significant (p value <0.001). From the current study finding it could be interpreted that the educational package given enhanced the knowledge about 'Mission Indradhnush' among the mothers of the underfive. This finding is consistent with the community study carried out at Aurangabad which concluded the effectiveness of a health teaching programme with regards to the knowledge about immunization among the mothers of the under-five. The Aurangabad study concluded that post-test mean knowledge score of mothers indicated significant difference which is a net benefit to the mothers due to the effectiveness of health teaching program [8].

The current study also revealed a significant linear correlation (r=0.486) in Table 4 between knowledge and attitude regarding Mission Indradhanush among mothers of under five children which was also found to be significant (p<0.05 level). Our study finding is also consistent with a descriptive study conducted at Halaga village, Belgaum, Karnataka among the mothers of under-five children. The result reveals that mean knowledge value on immunization of mothers of under five children was 58.1 and attitude score was 41.4. The correlation between knowledge on immunization and attitude of mothers showed that there is a positive correlation between knowledge on immunization and attitude (r=0.483). The study concluded that the mothers of under-five children of rural community area had moderately adequate knowledge on immunization and moderate positive attitude towards immunization [9]. Another survey study conducted in Bauchi Local Government, Bauchi State- Nizeria among the mothers to assess the knowledge and attitude of mothers towards childhood immunization revealed that the level of mothers' education relates to their knowledge and tend to encourage childhood immunization. The study also believed that there is the need to encourage women or girl child education as well as to educating husbands, parents and community leaders on the dangers associated with lack of immunization especially of the mentioned five killer diseases [10].

With respect to the selected demographic variables, we found thatoccupation, number of children and to the previous knowledge of the mothers of the under-five about Mission Indradhanush were significantly associated with the pre-test level of knowledge. The educational qualification and occupation of the mothers were also found to be significantly associated with the pre-test attitude regarding 'Mission Indradhnush'.

The current study findings is similar to the study conducted at Pune [11] by N Sujita Devi et al and a research exploratory study at Punjab [12] by Varinder Pal Kaur et al. the study conducted at Pune revealed that with higher standard of education, the knowledge of immunization is more and concluded that the mothers do know the importance of immunization despite the knowledge deficit regarding some vaccines like BCG, DPT< doses of hepatitis B and Vitamin A vaccination while the study conducted at Punjab found that there was a statistically significant effect of age, qualification, occupation of mother, family income in rupees, religion, numbersof children and source of information on knowledge regarding immunization. Thus the study concluded that the level of knowledge vary according to different demographic variables [12].

There are some limitations in the present study. It was limited to mothers having children below five years restricted to a slum area in KengeriUpanagara, Bengaluru. The current study is limited to a small smaple size, thus the study it also be replicated using larger populations.

In the present study, we found that the educational package can be effective in improving the knowledge and attitude of mothers regarding Mission Indradhanush. Thus, a similar educational programme could be designed in providing knowledge to health workers like the Anganwadi workers, school teachers, Panchayat members as well as the social workers in disseminating knowledge regarding Mission

Indradhanush. A similar kind of study can be undertaken in different settings like in Tribal populations.

The study carries an implication that community health nurse plays an important role in imparting knowledge and helping the mothers regarding Mission Indradhanush and help the Government to achieve the goals and objectives. Regular health education programme can be conducted by the nursing personnel in community setting which helps the mothers to be aware about the ongoing immunization Programme for children and pregnant mothers, the optional vaccines, benefits of immunization and about the killer or vaccine preventable diseases.

5. CONCLUSION

Based on the study findings, it can be concluded that educational package is significantly effective in improving the level of knowledge and attitude regarding Mission Indradhanush among mothers of under-five children. There is a substantial increase in knowledge and attitude of mothers after administration of educational package on Mission Indradhanush. The study also found significant association with selected demographic variables. Thus, timely and specialized educational packages can be administered to the community addressing the knowledge gap and misconception in improving the social acceptance regarding Mission Indradhanush as well as other health programmes.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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