

Effectiveness of Structured Teaching Programme on Viral Disease and their Prevention among Mothers of under Five Children

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Abstract: ***Background:** Mothers play a vital role in managing viral diseases and their prevention. Hence the investigator felt the need to evaluate the effectiveness of STP regarding viral disease and their prevention among mothers of under-five children. This study examines maternal knowledge regarding viral diseases and their prevention. **Method:** This was pre-experimental study with 50 subjects, selected through simple random sampling technique. One group pre-test post-test design was used. Data was collected using a self-administered structured closed ended questionnaire. Data was analyzed by using descriptive and inferential statistical in terms of means, frequency distribution, percentage, 'T' test and chi square test. **Results:** In present study, out of 50 subject 7 (14%) had average knowledge followed by 1 (2%) subject with good, 6 (15%) subjects with good, 31 (62%) subjects with poor and 11 (22%) with very poor knowledge regarding viral diseases and their prevention. Where pre-test knowledge score was (6.64 ±2.77) and post-test knowledge score (20.28±2.7) STP was effective in enhancing the knowledge of mothers of children about viral diseases and their prevention. Calculated 't' value was (34.93) much higher than table 'T' value (2.010) showed significant difference between pretest and posttest knowledge scores hence the STP is proved to be effective. Significant association found between the knowledge and their educational qualification demographic variable. **Conclusion:** The study concluded that STP on viral disease and their prevention for mothers was scientific, logical and effective strategy.*

Keywords: Effectiveness, Knowledge, Mothers of Under-Five Children, Structured Teaching Programme, Viral Disease

1. Introduction

Throughout the world, rotaviruses are the very common causative agent of community-acquired gastroenteritis in under-five children, with a worldwide mortality of nearly 5, 00, 000/year. Most of the deaths occurs in countries which are not developed completely, death from rotavirus infection is so rare in the completely developed countries where there is readily access to orally and parent rally rehydration. [1] Children the world's most valuable asset and their well-being indicates the standard of living of the country. They are almost 33% of the total population. It has been seen that almost one out of every five live born infants die before reaching five years of age. [2]

It is estimated that in the sub center area, there may be 12 cases dying before the age of 2 years and 6 others die before their fifth birth day health is both responsibility and right of those with power and without it. It has been seen that some 5 million children are dying each year and another 5 million disabled by childhood diseases in developing countries including India. In the contest of HFA/2010 one of the health goals is to immunize all children against the "viral infectious diseases of childhood namely chickenpox, measles, mumps and rubella. Immunization is the world's" greatest health tools. [3]

Rotavirus is very common causative factor of severe diarrhea specially among infancy and under five children it

causes stomach flu, even though there is no relation to influenza. Rotavirus is a double stranded RNA virus of Reoviridae family. There are only five species of this virus, referred as A, B, C, D, & E. Rotavirus A is the very common and leads to nearly 91 % of infections in human beings. [4]

In India, Awareness regarding immunization of under-five children is a sense of responsibility towards the need of children and their protection. The women in the rural parts of our country are economically and as well as socially backward and are ignoring the aspects of health. Mother don't focus on vaccination, whereas few others speak upon religious beliefs. It is important to screen all children for immunization coverage opportunity, if not complete immunization at all areas is not at all possible. [5]

The period of growth and development extends throughout the life cycle however, the period in which the principal changes occur if from conception to the end of adolescence. The development of child occurs progressively by increase by increase in skill and capacity to function. Every child is an individual and should never be considered as a typical boy or girl, one unit of a group who are all alike. Each child possesses its own rate and pattern of growth immune power and status of health. [4] Measles is a disease prevailing worldwide. It is both epidemic and endemic in occurrence, and have most high incidence in winter and spring season. It usually seen in the infants, before the age of 3 to 4 months & mild in the next 6 months. This is because of the protection

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provided by the maternal antibodies. The peak incidence is in the developing world ranges in the age group 1 to 5 years. [6]

Child care is a very important for any country to develop a healthy nation. The increasing complexity of medical and nursing techniques has created a need for special care of child. The child care has a prime importance, as the mortality and morbidity rates are higher in this group. Today children are recognised as complete persons and they are expected consider love, support and protection. In India, several measures have been undertaken by the national government to improve the health of the child and adopted a "National Policy for children" in August-1974. As per this policy it focussed that-to provide adequate services to children, both before and after birth and through the period of growth, to ensure their physical, mental and social development. [7] Measles is a deadly disease, if it is untreated or incompletely treated it results in complications which involve multi systems of the body. Some of them are otitis media, stomatitis, malnutrition, encephalitis, appendicitis, keratitis, corneal ulceration, tracheobronchitis, etc. [8]

A viral infection is any type of illness or disease caused by a virus. A viral infection occurs when virus enters the body through such processes as breathing air contaminated with virus, eating contaminated food, or by having sexual contact with a person who is infected with virus. A viral infection may also be caused by an inside of the body's cells in order to reproduce. A virus when spreads to other cells and repeats the process. [9] The most common preventative measure against mumps is immunization with a mumps vaccine. The vaccine may be given separately or as part of the measles. Mumps, rubella immunization vaccine which also protects against measles and rubella. [10] Infection rate of 90% in close contact. Most people become infected before adulthood but 10% of young adults remain susceptible. [11]

An estimated 92, 000 deaths occurred in India from measles among children aged <5 years. Estimates from 2008 indicate that 77% of global measles mortality was attributable to measles deaths in the World Health Organization (WHO) South-East Asia Region, the majority of which occurred in India. India has initiated implementation of a measles mortality reduction strategy, but the pace of implementation is variable across states. Strong national and state leadership and commitment to rapid reduction of measles mortality are essential to achieve the full benefits of this strategy. [12]

According to the Registrar General and Census Commissioner of India, UP, Bihar and Assam together had 114 million children under 15 years of age, in 2006 (6). Six states (AP, Gujarat, Karnataka, Kerala, Tamil Nadu, and West Bengal) conduct measles surveillance through clinical and laboratory outbreak investigations. In these states, nearly 80% cases occur in children less than 10 years old (data available at National Polio Surveillance Project [NPS], New Delhi). Even in the states with moderate routine immunization coverage, many under-five children with measles had not been given measles vaccine (e. g. West Bengal 72%, Karnataka 38%, Gujarat 35%). More than half of them had not received measles vaccine – providing fertile

ground for continued intense transmission of measles virus. [13]

In developing nations, up to 50% of deaths in the community area are among children below five years age group children (WHO comprise 13% of the general population) [14]. Among under-fives, ARI cause specific mortality in 20-25%. On this basis, one million deaths among under-fives in our Country are due to ARI and most of these occur in infants [15]. Cause specific mortality due to ARI is 10 to 50 times higher in developing countries than developed countries [16]. In our country, 14.3% of deaths during infancy and 15.9% of deaths between 1-5 years of age are due to ARI [17]. In India, pneumonias are estimated to be responsible for 75% of ARI deaths [18].

2. Materials and Methods

The present study was conducted in ward No.23 Navanagar Bagalkot. On 03-03-2021 the pre-test was done and it was followed by structured teaching programme on same day and after seven days post test was conducted that is on 10-03-2021. Data were collected using a self-administered structured closed ended questionnaire. The description of tool is given below.

Description of Tool –

The instrument was divided into two parts-

Part – I-It consists of 8 items regarding the Socio-demographic information of the subjects.

Part – II-It consists of 32 items to assess the knowledge regarding viral diseases and their prevention. It is divided into 4 sections.

Section I-includes 8 items (Item 1-8) related to assess the knowledge regarding measles disease.

Section II-includes 8 items (Item 9-16) related to assess the knowledge regarding mumps disease.

Section III-includes 7 items (Item 17-23) related to assess the knowledge regarding chickenpox disease.

Section IV-includes 9 items (Item 24-32) related to assess the knowledge regarding rubella disease. These items were closed ended, multiple choice questions. Each correct response has been scored with one mark. Total score is 32.

Scoring: Each question has one correct option and each correct response is assigned one mark and the wrong answer carries zero mark. The maximum possible score is 32.

Reliability of tool-The obtained value of 'r' was 0.87, indicating that the tool was highly reliable.

Method

This was pre-experimental study with 50 subjects, selected through simple random sampling technique. One group pretest posttest design was used. Data was collected using a self-administered structured closed ended questionnaire. Data was analyzed by using descriptive and inferential

statistical in terms of mean, frequency distribution, percentage, 'T' test and chi square test.

Inclusion criteria: The study includes the mothers who are

- Willing to participate in the study.
- Available at the time of data collection.
- Able to understand Kannada & English

Exclusion criteria: The study excludes the mothers

- Who are not present during data collection?
- Who are not able to cooperate throughout the period of study?

Statistical Analysis

In the present study the SPSSv25 was used to analyse the data. The descriptive statistics like frequency, percentage distribution, mean and standard deviation were used to describe the socio-demographic and outcome variables and paired 't' test and Chi-square test were used to test the hypotheses.

3. Results

Assessment of knowledge of mothers regarding Selected Viral Disease and their Prevention-Percentage distribution of study subjects in pre-test reveals that out of 50 subjects 2% had good knowledge followed by 14% had average knowledge, 62% had poor knowledge and 22% had very poor knowledge regarding school refusal in children and its management (Table 1).

Table 1: Percentage wise distribution of subjects according to levels of pretest knowledge

Test	Levels of knowledge	Number (f)	Percentage (%)
Pre test	Excellent	0	0
	Good	1	2
	Average	7	14
	Poor	31	62
	Very poor	11	22

Effectiveness of STP on mothers knowledge regarding viral diseases and their prevention-Table 2 shows that in the mean score in pre-test was 6.64 whereas mean score in post-test was 20.28, the standard error was 0.39, mean difference was 13.64 whereas SD difference was 2.73 and the paired 't'-value was 34.93.

Table 2: Significant difference between the Pre-test & Post-test knowledge scores of mothers of under five children

Test table	Mean	Std. Error	Mean Diff.	SD Diff	Paired t-value
Pre-test (x ₁)	6.64	0.39	13.64	2.73	34.93
Post-test (x ₂)	20.28				

Association between knowledge scores and selected socio demo graphic variables-

Chi-square was calculated to find out the association between post-test knowledge scores of mothers with their selected socio demographic variables by using 2x2 contingency table. There was no significant association was found between post-test knowledge scores of mothers regarding viral diseases and its prevention and selected socio-demographic variables like mothers' age, educational status, occupation, religion, family monthly income, type of family, number of children in the family and sources of information (Table3).

Table 3: Association between post-test knowledge scores and selected socio demographic variables

S. No.	Socio demographic variables	Df	Chi-square value	Table value	Level of significance	Inference
1	Age	2	4.05	5.99	0.05	Not significant
2	Educational status	1	3.12	3.84	0.05	Not significant
3	Occupation	1	0.76	3.84	0.05	Not significant
4	Family monthly income	1	0.056	3.84	0.05	Not significant
5	Religion	1	0.005	3.84	0.05	Not significant
6	Type of Family	1	1.74	3.84	0.05	Not significant
7	Number of children	1	0.19	3.84	0.05	Not significant
8	Source of information	1	0.14	3.84	0.05	Not significant

4. Discussion

Description of socio-demographic characteristics of sample

Findings revealed that out of 50 subjects, 30% of the subjects belong to the age group of 25-30 years, followed by 44 % in the age group of 31-35 years, 12% in the age group of 36-40 years and 14 % were above 40 years of age.40% of the subjects had primary education, 42% had high school education, 18% had PUC, and above qualification, 50% of the subjects were housewives, 26% were Labourers, 12% were government employees and remaining 12% of the subjects were doing business. Out of 50 subjects, 12% subjects had an income less than-Rs 3000/-, followed by 36% subjects with income between Rs.3001/--5000/-, 34% had about Rs 5001/-7000 and remaining 18% had about Rs.7001/-and above. Percentage wise distribution of mothers

according to religion shows that out of 50 subjects 60% belong to Hindu, 14% belong to Muslim, and remaining 26% belong to Christian and others were nil. Percentage wise distribution of mothers according to family type shows that 46% of subjects were from nuclear family, 48% of subjects were from joint family and remaining 6% were from extended family. Percentage wise distribution of mothers according to number of children in the family shows that out of 50 subjects 20% are having only 1 child, 52% are having 2 children and remaining 28% are having 3 or more children. Percentage wise distribution of mothers according to sources of information reveals that 56% of subjects relies mainly on Mass media, 34 % of them depend on health personnel, 10% of them get the information through friends / neighbours / parents /relatives and others source was nil.

A similar study was conducted by Paradowska-Stankiewicz, Orlikova H. Mumps to identify the prevalence of rubella in five blocks of Tamil Nadu, India. The result revealed that of the 300 samples tested, 145 (48.3) were negative for rubella IgG antibodies. The seronegative was 82.2 percent in 82.2 percent in 1-5 year and 13.5 percent in the 10–16-year age groups. The difference was statically significant ($p < 0.001$). The study concluded that, large percentage of children, 82.2 percent in the 1–5-year age group and 13.5 percent in 10–16-year population were susceptible to rubella infection highlighting the fact that there was a risk of congenital rubella syndrome.^[19]

A cohort study was conducted to find out the prevalence of chickenpox among under five children in London. UK. Study included. a convenient sample of 12.509 children between 3 and 5 years of age. The result showed that, the prevalence of chickenpox by 5 years was 76.9% [95%CI; 75.9%, 78.0]. The cumulative incidence between 3 and 5 years was 32.2 % [95 %CI; 31.1%, 33.3%]. A study concluded that, if universal varicella immunization were introduced in the UK, where 40% children have attended some formal day care by 3 years, a schedule commencing early in the second year of life would be indicated.^[20]

A descriptive study was conducted to assess the knowledge, beliefs of mothers regarding measles in rural area of Delhi, India. A purposive simple of 387 mother's Mehrauli block of Delhi was included in the study. A structured interview schedule with structure knowledge was administered to the mothers. The result revealed that, only 68.4% enumerated one or the other symptoms, fever being the commonest 57.5% were aware of the infectious nature and 67% had favorable attitude regarding feeding, feeding the child during measles. The commonest food stuff given was cow milk and Khichdi, 95.1% of the respondent intended to apply local herbs on eruptions. There was a variety of local medicines for home treatment and lung, Tulsi leaves and Kishmish being the practice in descending order of preference. 98.4% respondents flavored giving special nutritional care during the attack of measles to their children. The study concluded that, the mothers in Delhi had a lack of knowledge regarding measles there is need of an educational program to them.^[21]

A study was conducted to assess the knowledge and attitude of mothers regarding vaccination status of varicella in Kebangsaan, Malaysia. Same structured questionnaires were distributed to a purposive sample of 87.9 mothers. The result showed that, the overall level of knowledge (T-6.9, $p < 0.05$) vaccination status of varicella among respondents had no association with the level of knowledge ($\chi^2 = 2.42$, $p > 0.05$). Study concluded that, the awareness and vaccination status of varicella awareness should be held to educate the mothers on methods of prevention of this serious disease.^[22]

Knowledge wise comparison of study subjects in pre-test and post-test-The study reveals the following results. In pre-test, out of 50 subjects 2% had good knowledge followed by 14% had average knowledge, 62% had poor knowledge and 22% had very poor knowledge regarding viral diseases and their prevention. However, after STP (post-test) 38% subjects had excellent knowledge followed by 52% had good knowledge, 8% had average and 2% had

poor or knowledge regarding viral diseases and their prevention.

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Association between knowledge scores and selected socio demo graphic variables- Paired 't' test was used to find out the significance of the differences between the pre-test knowledge and post-test knowledge scores of mothers regarding Knowledge wise comparison of study subjects in pre-test and post-test reveals the following results. In pre-test, out of 50 subjects 2% had good knowledge followed by 14% had average knowledge, 62% had poor knowledge and 22% had very poor knowledge regarding viral diseases and their prevention. However, after STP (post-test) 38% subjects had excellent knowledge followed by 52% had good knowledge, 8% had average and 2% had poor or knowledge regarding viral diseases and their prevention. As the calculated "t" value (34.93) was much higher than table t value (2.010) the hypothesis: H1-there will be significant difference between the pre-test knowledge and post-test knowledge scores of mothers of children regarding school refusal and its management is accepted. Findings revealing the presence of significant difference between Pre-test and post-test knowledge scores; hence the structured teaching programme is proved to be effective. The overall findings reveal that the post-test knowledge score (20.28 ± 2.7) was more when compared to the Pre-test knowledge score (6.64 ± 2.77). Hence it indicates that the STP was effective in enhancing the knowledge of mothers of children.

A similar study was conducted in Bangladesh the result shows that 60% of the mothers had inadequate knowledge and 40% of mothers had moderate knowledge level in the pre-test. Further, none of them had adequate knowledge on Measles and its vaccination in the pre-test. The post test result showed that 64% of the mothers had adequate knowledge and 36% of mothers had moderate knowledge level in the post test. Further, none of them had inadequate knowledge level in the post test. The study revealed that the enhancement of mean knowledge found to be 30.53% from the pre-test to post test. The statistical Paired 't' test was found to be 34.7* that reflects significant enhancement of knowledge score from pre-test to post test at $P < 0.05$ revealing the effectiveness of structured teaching program on measles and its vaccination among mothers. Study result showed that there is a significance association between age and knowledge level of mothers noticed ($\chi^2 = 6.69^*$) at $P < 0.05$. It is found that there is a significance association between area of leaving and knowledge level. ($\chi^2 = 5.33^*$) at $p < 0.05$. It is also found that there is a significance association between family income and knowledge level of mothers. ($\chi^2 = 9.848^*$) at $p < 0.05$.^[24]

5. Conclusions

The conclusions drawn from the study are as follows: Majority 44% of the subjects belongs to the age group of 31-35 years.40% had primary education and 42% had secondary education.50% of the subjects were housewives.36% subjects had family monthly income between Rs.3001/-5000/-and 34% had income between Rs.5001/-7000/. Majority 60% were Hindus.48% of subjects were from joint family, 46% were from nuclear family and remaining 4 10% were from extended families.52% of subjects had two children, 20% of subjects had one child and remaining 28% had three or more children in their family. Majority 56% were getting health information from mass medias and 34% were relying up on health personnel. In pre-test, out of 50 subject's majority 62% had poor knowledge followed by 22% had very poor knowledge and 14% had average knowledge regarding selected viral diseases and their prevention. After teaching programme (posttest) 38% subjects had excellent knowledge followed by 52% subjects had good knowledge regarding selected viral diseases and their prevention.

In the present study as the calculated 't' value (34.93) was much higher than table 't' value (2.010) the hypothesis: H1- there will be significant difference between the pretest knowledge and posttest knowledge scores of mothers of preschool children regarding selected viral diseases and their prevention is accepted. Findings revealing the presence of significant difference between pre-test and post-test knowledge scores; hence the structured teaching programme is proved to be effective. The study proved that STP on viral disease and their prevention for mothers was scientific, logical and effective strategy. This showed that giving STP Will help in improving the knowledge of variables.

The same study can be conducted by Self instruction module or with Audio instructed teaching methods. And to see the effects of extraneous variables the researcher can use control group. And the same study could be conducted with large sample.

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