A pre experimental study to assess the effectiveness of planned teaching programme regarding knowledge of rubella vaccination

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Abstract The study to assess the effectiveness of planned teaching programme regarding knowledge of rubella vaccination among B.Sc. nursing students of Bombay Hospital College of Nursing, Indore. The objectives of the study to assess the pre-test knowledge score regarding rubella vaccination among B.Sc. nursing students. To assess the post-test knowledge score regarding rubella vaccination among B.Sc. nursing students. To evaluate the effectiveness of planned teaching programme on knowledge of rubella vaccination among B.Sc. nursing students. To find out the association between posttest knowledge score with selected socio demographic variables.

Index Terms—Rubella Vaccination.

I. INTRODUCTION

Currently it is estimated that immunization saves the life 3 million children a year but 2 million more lives could be saved by existing vaccines. Rubella is a disease caused by rubella virus. It is usually a mild illness. Rubella vaccine protects against three diseases: measles, mumps and rubella.

Rubella, also called German measles is an acute viral infection caused by a toga virus of the Ruby virus family that can affect people of all ages and both sexes. The incidence is much higher in Low-to-Middle income countries (LMICs). Several reports and studies explained the signs and symptoms of rubella, its transmission and incubation periods and how it can spread and affect.

BACKGROUND OF THE STUDY

Vaccine is an immunological substance designed to confer specific protection against a given disease. Vaccination is a comer stone of public health, believed to save an estimated 2-3 million lives annually. Therefore, provision of childhood immunization continues to be an essential component in reducing morbidity and mortality worldwide.

Infection with rubella early in uterus has a profound effect on the developing immune system. Defects observed are complete immune paralysis, PHA unresponsiveness, immunoglobulin abnormalities and loss of antibody to rubella. These defects are transient; absence of IgA may be permanent.

The first rubella vaccines were licensed in 1969. In 1971, a combined measles, mumps and rubella (MMR) vaccine was licensed for use in the United States. In 2005, combination measles, mumps, rubella and varicella (MMRV) vaccine was licensed. During 2008-2018, rubella vaccination prevented an estimated 23.2 million deaths. Routine rubella vaccination for children combined with mass immunization campaigns in countries with high cases and death rates.

Rubella Vaccine is a live attenuated (weakened) form of the rubella viruses. The vaccine works by stimulating our immune system to produce antibodies (proteins which will fight and kill the virus) against the rubella virus. Its single dose gives more than 95 percent long lasting immunity, which is similar to that induced by natural infection. Rubella vaccines are available either in monovalent formulation (a vaccine directed at only one pathogen) or in more commonly in combination with other vaccines such as with vaccines against measles (MR), measles and mumps (MMR) or measles, mumps and varicella (MMRV). Planned teaching program refers to a planned health education regarding knowledge on a particular topic among family members, developed by investigators. Thus, through this program, the focus is on to provide:

- Knowledge regarding effectiveness of rubella vaccination.
- Knowledge regarding whom all should be vaccinated.

- Knowledge regarding the characteristic of this vaccine symbolized as μ0H. Use the center dot to separate compound units, e.g., ―A·m^2.‖

NEED OF THE STUDY

WHO recommends that all countries that yet not have introduced rubella vaccine should consider doing so using existing, well-established measles immunization programme. Four WHO regions have established goals to eliminate this preventable cause birth defects .In 2015, the WHO region of the Americas became the first in the world to be declared free of endemic transmission of rubella. As a December 2018,168 out of 194 countries had introduced rubella vaccine and global coverage was estimated at 69%. Reported rubella cases declined 97% from 670894 cases 102 countries in 2000 to 14621 cases in 151 countries in 2018.

Rubella is also known as German measles are a mild fever and Maculopapular rash .During 2000-2018 measles vaccination prevented an estimated 23.2 million deaths.Fig. 1 meant16000 A/m or 0.016 A/m. Figure labels should be legible, approximately 8 to 12 point type.

HYPOTHESES

Null Hypotheses (H01) There is no significant difference between pre-test & post-test knowledge score after the administration of planned teaching programme regarding rubella vaccination among B.Sc. (N) 1st year students of Bombay Hospital, college of Nursing, Indore (M.P.).

Research Hypotheses (H1) There is significant difference between pre- test & post- test score after the administration of planned teaching programme regarding rubella vaccination among B.Sc. (N) 1st year students of Bombay Hospital, college of Nursing, Indore (M.P.).

Null Hypotheses (H02) There is no significant association between post- test score of knowledge regarding rubella vaccination & selected socio-demographic variables among B.Sc. nursing 1st year students in Bombay Hospital, College of Nursing, Indore (M.P.).

Research Hypotheses (H02) There is significant association between post- test score of knowledge regarding rubella vaccination & selected socio-demographic variables among B.Sc. nursing 1st year students in Bombay Hospital, College of Nursing, Indore (M.P.).

ASSUMPTIONS

This study assumes that B.Sc. nursing 1st year students may have knowledge regarding rubella vaccination.

DELIMITATIONS OF THE STUDY

B.Sc. Nursing students those who are:-

1. Willing to participate in the study.
2. Available at the time of data collection.
3. Age above 17 years & below 20 years.

LIMITATIONS OF THE STUDY

B.Sc. Nursing students those who are:-

1. Not available at the time of study.
2. Not interested to participate in the study.
3. Sick at the time of data collection.

CONCEPTUAL FRAMEWORK

The conceptual model for the study is based on the General System Theory by Ludwig Von Bertanlanffy (1969).

This is an interdisciplinary practice that describes systems with interacting components applicable to biology, cybernetics and other fields.

REVIEW OF LITERATURE

Review of literature related to knowledge regarding rubella vaccination among B.Sc. nursing 1st year students:

Anders Hviid (2019), conducted a nationwide cohort study on measles mumps rubella vaccination and autism in this study they evaluate whether the MMR vaccine increases the risk for autism in children, subgroups of children or time periods after vaccination. In this study, they used 657 461 children born in Denmark from 1999 through 31 December 2010, with follow up from one year of age and through 31 August 2013. Study findings that during 5 025 754 person –years of follow up, 6517 children where diagnosed with autism. Comparing MMR-vaccinated with MMR- unvaccinated children yielded a fully adjusted autism hazard ratio of 0.93.

RESEARCH METHODOLOGY

In this study the research design selected for the study was pre- experimental one group pre- test and post-test design

SETTING OF THE STUDY

It is any place or location where the study is to be conducted. This study is conducted in Bombay Hospital, College of Nursing, Indore (M.P.).

VARIABLES

Independent variable:-

The independent variable in this study is effectiveness of planned teaching programme.

Dependent variable:-

The independent variable in this study is Knowledge level of B.sc nursing 1st year students regarding rubella vaccination.

POPULATION

In this study the population is all the B.Sc. nursing 1st year students in Bombay Hospital, College of Nursing, Indore (M.P.)

SAMPLE AND SAMPLING TECHNIQUES

SAMPLE

In this study sample is the B.Sc. nursing 1st year students in Bombay Hospital, College of Nursing, Indore (M.P.).

SAMPLE SIZE

In this study sample size was 50

SAMPLING TECHNIQUE

The sampling technique used in this study was non-probability convenient sampling.

SAMPLING CRITERIA FOR SELECTION OF SAMPLE Inclusion Criteria

1. B.Sc. (N) students who are age between 17 to 19 years.
2. B Sc. nursing students who know both English and Hindi language.

Exclusion Criteria

1. B Sc. nursing students who are physically challenged.
2. B Sc. nursing students who are not age between 17 to 19 years.

DATA COLLECTION TOOLS ANDTECHNIQUES

The investigators visited the college and obtained the necessary permission from the concerned authorities. The investigator introduced and informed them about the nature of the study to ensure better cooperation during data collection.

DESCRIPTION OF TOOLS

Section A: - Socio- demographic variables. It includes 5 items; they are: age, religion, occupation of father, family income and previous knowledge.

Section- B: - Structured knowledge questionnaire to assess the knowledge level regarding Rubella vaccination among B.Sc. nursing 1st year students in Bombay Hospital, College of Nursing, Indore (M.P.).

The responses are scored and graded as: Poor, Good, Very good, excellent.

MATERIALS AND TOOLS

Structured questionnaire was used in the collection of data. Questionnaire consists of two sections.

Section I consists of socio- demographic variables of the B.sc nursing 1st year students to be participated in the study e.g. Age, religion, family income, occupation of father, and previous knowledge.

Section II consists of structured knowledge questionnaire.

Table shows scoring procedure on knowledge regarding Rubella vaccination.

S. NO.	LEVEL OF KNOWLEDGE SCORE	KNOWLEDGE SCORE RANGE
1.	Poor	0-5
2.	Good	6- 10
3.	Very Good	11- 15
4.	Excellent	16- 20

VALIDITY OF THE TOOLS

SECTION- A: SOCIO- DEMOGRAPHIC DATA: It includes identification data such as age, religion, occupation of father, family income and previous knowledge.

SECTION- B: STRUCTURED QUESIONAIRRE: It includes 20 items. There was 100% agreement though suggestions were given to modify them on some points. Research tools were though found relevant and modifications were done as per suggestions of the experts.

RELIABILITY OF THE TOOLS

The Karl Pearson formula was used to find out the reliability of the tools. The reliability was found to be r= 0.83.

PROCEDURE FOR DATA COLLECTION

Written permission was obtained from the authority of college prior to the data collection. The study was carried out in the same way as that of the pilot study.
A total of 50 samples were selected for the study. They were B.Sc. (N) 1st year students in the Bombay Hospital College of Nursing, Indore (M.P.).

PLANS FOR DATA ANALYSIS
Descriptive Statistics
Distribution of frequency and percentage of socio-demographic data of samples characteristics will be tabulated and represented in the form of figures. Mean and standard deviation of pre- test and post- test score will be analyzed.

Inferential statistics
"t" Test to determine the effectiveness of planned teaching programme. Chi- square test will use to analyze the association of post- test knowledge score with socio- demographic variables.

ORGANIZATION AND PRESENTATION OF STUDY FINDINGS
DATA ANALYSIS AND INTERPRETATION
Section- A: Frequency and percentage distribution of socio- demographic variables. Students with 17- 18 years are 33 (66%) and students with 19- 20 years of age are 17 (34%). Students with Hindu religion are 37 (74%) and remaining students are of religion Christian 13 (26%).

- Above table shows that, most of the students 30 (60%) fathers occupation is other than the businessman, teacher and self- employee; 11 (22%) students fathers occupation is self-employee,
- 8 (16%) students fathers occupation is businessman and remaining 1 (2%) student's father's occupation is teacher.
- Most of the students family income is below Rs. 50,000/- 27 (54%), 10 (20%) students had family income of Rs. 60,001/- to 70,001/-, 5 (10%) students had family income of Rs. 70,001/- to 80,001/- and remaining 8 (16%) students had family income of Above Rs. 80,001/-.

Category	Mean	Standard deviation	Df	Mean difference	T value
Pre- test	8.36	2.59	98	9.240	22.601
Post- test	17.6	1.2778			

- In above table, students had acquired previous knowledge regarding rubella vaccination through health education 33 (66%), 10 (20%) students had acquired previous knowledge regarding rubella vaccination through T.V., 4 (8%) students acquired previous knowledge regarding rubella vaccination through role play and remaining 3 (6%) students had acquired previous knowledge regarding rubella vaccination through workshop.

Section- B: Frequency and percentage distribution of pre- test knowledge score regarding rubella vaccination among B.Sc. (N) 1st year students in selected college of Indore. This section deals with the pre- test knowledge score regarding rubella vaccination.

Category	Mean	Standard deviation
Pre- test	8.36	2.59

Section- C: Frequency and percentage distribution of post-test knowledge score regarding rubella vaccination among B.sc (N) 1st year students in selected college of Indore. This section deals with the post- test knowledge score regarding rubella vaccination. T

Table: shows post- test knowledge score regarding rubella vaccination.

Category	Mean	Standard deviation
Post- test	17.6	1.2778

Section- D: Comparison of mean, Standard deviation and mean difference between pre- test and post- test knowledge score regarding rubella vaccination among B.Sc. (N) 1st year students.
This section deals with comparison of mean, standard deviation and mean difference between pre- test and post- test knowledge score regarding rubella vaccination among B.Sc. (N) 1st year students. The level of knowledge of the students during the pre- test and the post- test was compared to prove the effectiveness of planned teaching programme.
SECTION- E: Association between post- test knowledge with selected socio demographic variables score regarding rubella vaccination among B.Sc. Nursing 1st year students shows that age in year's $\chi 2$ value is 1.644 and table value is 3.84. In religion $\chi 2$

value is 0.002 and table value is 3.84. In occupation of father calculated $\chi 2$ value is 2.74 and table value is 7.81. In family income the calculated $\chi 2$ value is 3.288 and table value is 7.81. In previous knowledge of students $\chi 2$ value is 2.239 and table value is 7.81.

The socio demographic variables of B.Sc. Nursing students; age(in years), Religion, Occupation of father, Family income, Previous Knowledge were found not significant at level of 0.05 that reveals selected socio-demographic variables are not indented in relation to post interventional level of knowledge that was dependent.

RECOMMENDATIONS

On the basis of the findings of the study following recommendations have been made:

1. A simple study can be done on a large sample to generalize the findings.
2. An experimental study can be undertaken with a control group for effective comparison of the result.
3. A study can be conducted by including additional socio-demographic variables.
4. A study can be carried out to evaluate the effectiveness of planned teaching programme regarding knowledge of rubella vaccination in students.

IMPLICATIONS OF THE STUDY

The results of the study show that, the students had inadequate knowledge regarding rubella vaccination. The findings of the study have implications in the field of nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice

1. Nursing professionals can assess the level of knowledge regarding rubella vaccination in students.
2. Nursing professional can help and communicate regarding rubella vaccination.
3. Nursing professional can actively contribute in increasing the knowledge level of students regarding rubella vaccination.

Nursing Education

1. As a nurse educator, there are abundant opportunities for the nursing professionals to educate the students regarding rubella vaccination.
2. As a nurse educator, they can develop and evaluate efficient educational techniques.

Nursing Research

1. This study helps nursing researchers to conduct research on effectiveness of planned teaching programme regarding knowledge of rubella vaccination
2. It encourages disseminating knowledge by publications and organizing journal clubs, workshops, seminars and conferences.

Nursing Administration

1. Nursing administrators should aim at organizing classes or workshops, health education and other activities which would help in developing and increasing the knowledge level of students regarding rubella vaccination.
2. Nursing administrators should maintain the satisfying elements and eliminate the more dissatisfying and dysfunctional aspects of the work environment.

CONCLUSION

A pre- experimental design and quantitative approach was used in the study. The data was collected from 50 students through Non- probability convenient sampling technique.

1. The overall mean of pre- test score on knowledge level through planned teaching programme was found to be 8.36, which indicates that the respondents have less knowledge level.
2. The overall mean of post- test scores was found to be 17.6 which indicate that there is increase in knowledge level regarding rubella vaccination among B.Sc. (N) 1st year students, after giving intervention.

Hence, H1 hypothesis is accepted and null hypothesis is rejected. As, there is a significant difference between the pre- test and post- test score after the administration of planned teaching programme.

H02 hypotheses are accepted and a research hypothesis is rejected. As, there is no significant association between post- test score of knowledge regarding rubella vaccination and selected socio- demographic variables among B.Sc. (N) 1st year students in Bombay Hospital, College of Nursing, Indore (M.P.)