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Petra Valencia Dcosta
MSc (N), Shreeya College of Nursing, Opp. District Court, P.B Road, Dharwad, Karnataka, India

Awathare Swati
Professor and HOD, Department of Medical Surgical Nursing, Shreeya College of Nursing, Opp. District Court, P.B Road, Dharwad, Karnataka, India

Rhoda Jesuraj
Principal and HOD, Department of Obstetrics and Gynaecology, Shreeya College of Nursing, Opp. District Court, P.B Road, Dharwad, Karnataka, India

Dr. Nagaraj Killelli
Vice Principal and HOD, Department of Community Health Nursing, Shreeya College of Nursing, Opp. District Court, P.B Road, Dharwad, Karnataka, India

Pallavi Naik
Assistant Professor, Department of Medical Surgical Nursing, Shreeya College of Nursing, Opp. District Court, P.B Road, Dharwad, Karnataka, India

Corresponding Author:
Petra Valencia Dcosta
MSc (N), Shreeya College of Nursing, Opp. District Court, P.B Road, Dharwad, Karnataka, India

To evaluate the effectiveness of planned teaching program on knowledge regarding prevention and safety measures during covid-19 pandemic situation among teachers of selected high schools of Hubli-Dharwad

Petra Valencia Dcosta, Awathare Swati, Rhoda Jesuraj, Dr. Nagaraj Killelli and Pallavi Naik

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Abstract
Background of the study: The novel Coronavirus 2019 (SARS-CoV-2) has caused the worldwide pandemic of Coronavirus disease 2019 (COVID- 19).This pre-experimental study aimed to evaluate the effectiveness of planned teaching programme on knowledge regarding prevention and safety measures during Covid-19 pandemic situation among teachers of selected high schools of Hubli-Dharwad.
Aims: Assess the knowledge and Prevention Safety of Covid-19 among high school Teachers, evaluate the effectiveness of Planned Teaching program.
Conceptual Frame Work: King's Goal Attainment Theory.
Methodology: An evaluative approach with pre-experimental one group pre-test post-test design was used with Purposive sampling technique to select the sample (n=50). A structured knowledge questionnaire regarding prevention and safety measures during covid-19 pandemic situation among teachers was used and PTP was administered to find its effectiveness. The collected data was analyzed by using descriptive & inferential statistics.
Results: After administrating the PTP the calculated 't' value was 11.34.
Interpretation and Conclusion: The study aimed to evaluate the effectiveness of PTP; the calculated 't' value was significantly higher than the table value at 0.005 level. Hence the PTP was effective in increasing the knowledge of participants regarding prevention and safety measures during Covid-19 pandemic situation.

Keywords: Covid-19, high school teachers PTP

Introduction
The novel Coronavirus 2019 (SARS-CoV-2) has caused the worldwide pandemic of Coronavirus disease 2019 (COVID-19). COVID-19 was initially identified as a cluster of pneumonia cases during late December 2019 in China and rapidly spread worldwide [1]. The definite modes of SARSCoV-2 transmission are not yet completely known; however, health officials suggest that it could primarily spread through droplets when an infected person coughs or sneezes, and by direct contact with infected individuals [2].
COVID-19 is a disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease. Formerly, this disease was referred to as '2019 novel coronavirus' or '2019-nCov [1].'
Viral, environment and host factor play roles in virus infection and disease. The virus has high transmissibility and is rapidly transmitted to people through close contact and droplets from coughing, sneezing and talking loudly, as well as through contact with contaminated objects. As crowding is an environmental risk factor for contamination, its transmission is high among patients and staff in hospital and also in elderly-care centers. It is more common in the elderly, in men and subjects with diabetes mellitus, hypertension, cardiovascular disease, and malignancy.

Unfortunately, no drugs or vaccines have been officially approved for the treatment of COVID-19, although some drugs, such as hydroxychloroquine and remdesivir, are under clinical investigation. Therefore, acquiring and being adherent to the universal safety precautions (USPs) is the only method to control the spread of COVID-19. Implementing the following non-pharmacological USP's during the pandemic would relieve overloaded healthcare system and the concerns of the public [3].

Background of the study

The novel Coronavirus 2019 (SARS-CoV-2) has caused the worldwide pandemic of Coronavirus disease 2019 (COVID-19). COVID-19 was initially identified as a cluster of pneumonia cases during late December 2019 in China1 and rapidly spread worldwide. The definite modes of SARSCoV- 2 transmission are not yet completely known; however, health officials suggest that it could primarily spread through droplets when an infected person coughs or sneezes, and by direct contact with infected individuals [2]. COVID-19 is a disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease. Formerly, this disease was referred to as '2019 novel coronavirus' or '2019-nCoV [1].' Viral, environmental and host factors play roles in virus infection and disease. The virus has high transmissibility and is rapidly transmitted to people through close contact and droplets from coughing, sneezing and talking loudly, as well as through contact with contaminated objects. As crowding is an environmental risk factor for contamination, its transmission is high among patients and staff in hospital and also in elderly-care centers [3]. Maintaining personal hygiene is an essential practice to protect against any type of respiratory illness, including COVID-19. Hand washing and social/physical distancing are effective measures to prevent transmission between individuals [4]. Other major mitigating measures include isolation and quarantine, particularly of individuals with symptoms or confirmed COVID-19 cases. If the above-mentioned measures are insufficient in reducing the wide spread of the infection, community containment would be implemented where an entire community or neighborhood is restricted in order to reduce personal interactions, except for inevitable situations. The use of personal protective equipment (PPE), such as face masks, gloves and hand sanitizers, is another precautionary control measure, although less effective than other control measure[5]. The educators have to be persuaded to develop a system of early detection and education so that prevention of any diseases can be done at early stage. For this, the role of teachers is most important.

Title of the Project

"To evaluate the effectiveness of planned teaching programme on knowledge regarding prevention and safety measures during Covid-19 pandemic situation among teachers of selected high schools of Hubli-Dharwad"

Aims of the study

1. To assess the knowledge of the teachers of selected high schools regarding the prevention and safety measures during Covid-19 pandemic situation in terms of pre-test knowledge scores.
2. To determine the effectiveness of planned teaching program by comparing the pre-test and post-test knowledge scores on prevention and safety measures during Covid-19 pandemic situation among teachers of selected high schools.
3. To determine the association between pre-test level of knowledge of teachers of selected high schools regarding prevention and safety measures during Covid-19 pandemic situation with their selected demographic variables.

Hypothesis

Following hypothesis were stated to determine the statistical evidence of the finding at 0.05 level of significance.

H1: there will be a significant difference between the mean pre-test and post-test knowledge scores of high school teachers regarding prevention and safety measures during Covid-19 at 0.05 level of significance

H2: there will be a significant association between the post-test knowledge scores with selected socio-demographic variables of high school teachers regarding prevention and safety measures during Covid-19 at 0.05 level of significance

Conceptual/Theoretical Framework:

The conceptual model used in this study King's Goal Attainment Theory which paves as way to understand a knowledge regarding prevention and safety measures of Covid-19 pandemic situation among High School Teachers.

Methodology

Research Approach: Quantitative Approach Research Approach

Research Design: Quasi-experimental one group pre test and post test

Samples: High School Teachers

Sampling Technique: Non-Probability Purposive Sampling Technique

Sample Size: 50 High School Teachers

Plan for Data Analysis: Descriptive statistics (Mean, Median, Mode, Range, Standard deviation) Inferential Statistics x^2 test.

Setting of the Study

Study was conducted in Presentation Girls High School and St. Joseph's High School Dharwad.

Sampling Criteria

The study samples were selected keeping in view the following predetermined criteria.

Inclusion Criteria

1. High School teachers who can understand, comprehend, and respond in English/Kannada.
2. High school teachers who are working at selected high schools Hubli- Dharwad
3. High school teachers who are willing to take part in the study

Exclusion Criteria
High school teachers who are working at managerial levels at the selected high schools Huble-Dharwad

Reliability of the Tool
The self-administered knowledge questionnaire and planned teaching program were content validated by giving to five experts from nursing field. There was 100% agreement by all experts on all the items. However, there were few suggestions to modify some of the questions and those were incorporated in final tool.
Reliability of the tool was tested by Split Half Method by using Karl Pearson's Co-efficient of Correlation formula. Item analysis was done to test internal consistency. This is done by critically evaluating questions based on difficult index and Discriminative index. The reliability of structured knowledge questionnaire was r = 0.83. This indicates that tool was reliable.

Tool I: Structured socio-demographic proforma consisted of 07 items to elicit the information on personal characteristics of high school teacher such as age, sex, religion years of experience, residential area previous exposure to educational program, source of information.

Tool II: Self ad mistered knowledge questionnaire consisted of 38 knowledge regarding Covid-19, etiology of Covid-19, signs & symptoms of Covid-19, Treatment & prevention of Covid-19, Safety measures during Covid 19.

Process of data collection was as follows
a) Permission obtained from the concerned authority
b) After getting permission from the concerned authorities and subject, pretest was conducted and administered. Planned teaching program and on day post test was administered using same questionnaire
c) Period of data collection the main study was conducted for a period of 4 weeks from 18.04.2022 to 31.05.2022 at Presentation school and St Joseph's School Hubli-Dharwad

Pre-test
Data collection is the gathering of information from the sampling units. The investigator conducted the pre-test to assess the knowledge regarding prevention and safety measures during Covid-19 among 50 High school teachers in selected High school at Hubli-Dharwad. The purposes and objectives of the study were explained to subjects and confidentiality was assured with consent to participate in the study. Administration of Planned Teaching Program was conducted on the same day regarding Prevention and safety measures during Covid-19 pandemic.

Post-test
Post test was conducted on day after the Pre-test and administration of Planned Teaching Program to find the effectiveness of PTP by using same questionnaire. All the participants co-operated will with the investigator in both pre-test and post-test.

Results
To evaluate the effectiveness of Planned Teaching Program. The data from the participants were organized to meet the objectives and hypothesis of the study undertaken. The analyzed facts of the study were

Table 1: Frequency and Percentage distribution of respondents according to socio- demographic variables

Sl. No	Demographic variables	Frequency(f)	Percentage (%)
1.	**Age (in years)**		
	a) 20-30	19	38
	b) 31-40	14	28
	c)41-50	13	26
	d)>50	04	08
2.	**Gender**		
	a)Male	36	72
	b) Female	14	28
3.	**Religion**		
	a)Hindu	32	64
	b) Muslim	09	18
	c)Christian	09	18
	d) Others	00	00
4.	**Years of experience**		
	0-5 years	21	42
	6-10 years	15	30
	11-15 years	10	20
	Above 15 years	04	08
5.	Residential area	29	58
	a)Urban	21	42
	b)Rural		
6.	**Previous exposure to educational program**		
	Yes	46	92
	No	04	08
7.	**Source of information**		
	Formal education	06	12
	b)Books/Journal	13	26
	c)Mass media	27	54
	d)Seminar/Workshop	04	08

Table 1: Study compromised of 50 participants. The socio demographic scores of participants were tabulated and frequency & percentage was calculated. The findings are presented in the following table.

Table 2: Distribution of knowledge scores during Pre-test and Post-test

Area of knowledge	No. of items	Mean	Median	Mode	Standard Deviation	Range
Pre-test score	38	19.36	19	19	4.09	12-32
Post-test score	38	26	26	25	2.85	21-33

Table 2: reveals pre-test and post-test knowledge scores of respondents regarding prevention and safety measures during Covid-19 pandemic situation. In pre-test knowledge score respondents Mean was 19.36, Median was 19, Mode was 19 with Standard deviation 4.09 and scores ranged between 12-32. In post-test knowledge scores, mean was 26, median was 26, mode was 25 with standard deviation 2.85 and scores ranged between 21-33.

Table 3: Distribution of respondents Pre-test and Post-test scores according to their level of knowledge n=50

Level of Knowledge					
Pre test			Post test		
Poor f (%)	Average f (%)	Good f (%)	Poor f (%)	Average f (%)	Good F (%)
3 (6%)	42 (84%)	5 (10%)	00	26 (52%)	24 (48%)

The data presented in the Table 3 depicts the respondent's level of knowledge during pretest and post-test regarding prevention and safety measures during Covid-19 pandemic situation; With regard to pre-test level of knowledge it shows that, maximum 42(84%) respondents were having average knowledge, 5(10%) respondents were having good knowledge and remaining 3(6%) of respondents were having poor knowledge. During post-test maximum 26(52%) of respondents were having average knowledge and remaining 24(48%) of respondents were having good knowledge.

Table 4: Effectiveness of Planned Teaching Program Mean, SD, Standard error of difference and 't' value of pre-test and post-test knowledge n=50

Aspects	Mean	Sd	SEMD	Paired t Test
Pre-test	19.36	4.09	0.59	1134*
Post-test	26.06	2.85		

* Significant at 5% level

Result

Table 4 indicates the overall mean knowledge scores of pre-test and post-test scores regarding prevention and safety measures during Covid-19 pandemic situation among High school teachers. The findings reveal that the post-test mean knowledge scores was found higher [mean=26.06, SD of 2.85] when compared with pre-test mean knowledge score value which was 19.36 with SD of 4.09. The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% (p<0.05) level with a paired 't' value of 11.34. There exists a statistical significance in the difference of knowledge score indicating the positive impact of planned teaching program. Hence, the research hypothesis H1 is supported. This indicates that the enhancement in knowledge is not by chance and the respondents who exposed to planned teaching program on prevention and safety measures during Covid-19 pandemic situation, significantly improved in their knowledge.

Table 5: Association between level of knowledge and selected socio demographic variables

To find out the association between the levels of knowledge and selected personal variables, Chi square was computed and the following hypothesis is stated

H2: There will be statistical association between the mean pre-test level of knowledge of High school teachers regarding prevention and safety measures during Covid-19 pandemic situation and their selected demographic variables at 0.05 level of significance.

Table 5: Chi-square values between levels of knowledge of respondents regarding prevention and safety measures during Covid-19 pandemic situation and their selected demographic variables.

Sl. No.	Demographic variables	Median & below median	Above median	d(f)	Chi square value Level	Level of significance
1	**Age (in yrs)**			3	0.71	NS
	20-30	12	7			
	31-40	10	4			
	41-50	8	5			
	>50	2	2			
2	**Gender**			1	0.01	NS
	Male	23	13			
	Female	9	5			
3	**Religion**			2	1.83	NS
	Hindu	22	10			
	Muslim	4	5			
	Christian	6	3			
4	**Years of experience**			3	0.58	NS
	0-5 years	13	8			
	6-10 years	10	5			
	11-15 years	7	3			

	Above 15 years	2	2			
5	**Residential area**			1	2.33	NS
	Urban	16	13			
	Rural	16	5			
6	**Previous exposure to educational program on Covid-19**			1	0.22	NS
	Yes	29	17			
	No	3	1			
7	**Source of information**			3	0.52	NS
	Formal education	4	2			
	Books/Journals	9	4			
	Mass media	17	10			
	seminar/Workshop	2	2			

χ 2 (2) =5.99, (6) = 12.59 (p>0.05) NS – Not Significant

The data presented in the Table 5 shows that the computed Chi-square value for association between level of knowledge of High school teachers regarding prevention and safety measures during Covid-19 pandemic situation and their selected demographic variables is not found to be statistically significant at 0.05 levels for any of the selected socio demographic variables. Therefore, the findings do not support the 57 hypothesis H2, inferring that participants level of knowledge regarding prevention and safety measures during Covid-19 pandemic situation is not significantly associated with any of the selected socio demographic variables.

Discussion

The findings of the study were discussed under following sections

Part I: Description of demographic characteristics.

Part II: Analysis of knowledge score of respondents regarding effects of prevention and safety measures during Covid-19 pandemic situation among respondents

Part III: Analysis of effectiveness of planned teaching program

Part IV: Association between pre test knowledge score with selected socio- demographic variables.

Part I: Description of demographic characteristics.

- Majority 19 (38%) of the respondents belong to the age group of 20-30 years
- Majority 36 (72%) of the respondents were males
- Majority 32 (64%) of the respondents were belonged to Hindu religion
- Majority 21(42%) of the respondents were had 0-5 years of experience
- Majority 29(58%) of respondents were belonged to urban area s · Majority 46(92%) of respondents exposed to educational program previously on Covid-19
- Majority 27(54%) of respondent's source was mass media

Similar findings were observed in the study conducted by Hongbiao Chen *et al* to assess Knowledge, Attitudes, and Practices Toward COVID-19 Among Chinese Teachers, Shenzhen: An Online Cross-sectional Study During the Global Outbreak of COVID-19 its demographic characteristics of participants revealed that, among all the 8,248 participants, most (89.2%) were women, and over half the participants (53.1%) were aged 30 years and younger; the group aged over 50 years accounted for only 3.7% of the participants. Among the participants, 40.7% attained a bachelor's degree, and 8.6% held a master's degree or above. Regarding educational institutions where the participants worked, 51.6% worked in kindergartens, whereas 32.1 and 16.4% worked in primary and secondary schools, respectively. Also, 27.8% of them have been engaged in educational duties for ≤2 years.

Part II: Analysis of knowledge score of respondents regarding effects of prevention and safety measures during Covid-19 pandemic situation among participants

Total pretest knowledge scores, mean was 19.36, median was 19, mode was 19 with standard deviation 4.09 and scores ranged between 12-32.

Discussion 60 Total post-test knowledge scores, mean was 26, median was 26, mode was 25 with standard deviation 2.85 and scores ranged between 21-33.

With regard to pre-test level of knowledge it shows that, maximum 42(84%) respondents were having average knowledge, 5(10%) respondents were having good knowledge and remaining 3(6%) of respondents were having poor knowledge.

During post-test maximum 26(52%) of respondents were having average knowledge and remaining 24(48%) of respondents were having good knowledge

Similar results were observed in another cross-sectional, web-based survey its results revealed that, of the 1117 individuals who participated in the survey, the mean age was 28.8±10.9 years, 32.9% had a postgraduate education, 45% had a professional job, and 40% belonged to the upper-middle economic class. Overall, the mean correct response scores were 63% for USP knowledge and 83% for USP beliefs. All the socio demographic variables were significantly (p<0.001) associated with the USP knowledge levels. These findings could guide public health authorities to make and implement precautionary measures to combat this pandemic.

Findings also can be compared with an institutional-based cross-sectional it revealed that, the prevalence of poor knowledge, attitude, and precautionary measures was 42.2%, 39%, and 41.6%, respectively. The finding of this study showed that more than one-third of the participants had poor knowledge, attitude, and precautionary measures towards COVID-19 disease. A comprehensive health education program concerning knowledge, attitude, and precautionary measures toward COVID-19 ought to be strengthened.

Findings also can be compared with cross sectional study conducted to investigate the awareness regarding prevention and safety measures during Covid-19 pandemic situation

Chapter – VI Discussion 61 among the College of Science students at University of Bahrain. In this 55±10.18% of all students examined answered the questions correctly of which 51±10.28% were in the first year, while 60±7.4% were in their fourth year indicating a direct positive impact of university education. Findings also match with a survey was conducted to assess knowledge and practice of the prevention of COVID-19 among Saudis and foreign nationals residing in Saudi Arabia. Results of this study revealed that, out of the 443 respondents, 356 respondents (84%) knew they had to wash their hands for 20 seconds and did this as well, 303 respondents (75%) knew that sneezing or coughing into the arm/elbow can prevent the spread of COVID-19 and were doing this as well, 357 respondents (82%) knew that COVID-19 can be transferred by shaking hands and avoided this, 333 respondents (79%) knew that they had to maintain a safe distance of at least one meter and kept this distance, 315 respondents (76%) knew that touching one's face can transfer the virus and avoid this, and 414 respondents (95%) knew that staying at home can decrease the chances of getting infected.

Part III: Analysis of effectiveness of planned teaching program regarding prevention and safety measures during Covid-19 pandemic situation

The post-test mean knowledge scores was found higher [mean=26.06, SD of 2.85] when compared with pre-test mean knowledge score value which was 19.36 with SD of 4.09.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level (p<0.05) with a paired 't' value of 11.34. There exists a statistical significance in the difference of knowledge score indicating the positive impact of planned teaching program.

Findings of the present study can be compared with other experimental study conducted to evaluate the impact of a structured teaching program regarding COVID-19 on knowledge, attitudes, and practices among secondary school students. A pre/post quasi-experimental design was adopted. 260 students were selected from two secondary schools at Sohag City using a multi-stage sample. A self-administered questionnaire and health education Arabic handout was prepared by the researches. There was a statistically significant difference between secondary student's knowledge attitudes, and practices pre and post- structured teaching program implementation. A structured teaching program is effective in improving knowledge, attitudes, and practices among secondary school students regarding COVID -19

Findings also match with other study conducted to evaluate the effectiveness of structured teaching program (STP) on knowledge, practice and attitude regarding hand washing among school children at a selected school, Serkadu in Vellore District. A quantitative research approach of pre-experimental with one group pre and post-test design was chosen for this study. By using stratified random sampling technique, a total of 100 samples were included for the study. The structured teaching program was given by researcher. The result revealed that there was a statistically significant difference between pre and post-test knowledge, practice and attitude scores regarding hand washing among school children at p<0.001. This study implies that creating awareness on hand washing will prevent the occurrence of infection among school children.

Part IV: Association between pre-test knowledge and attitude score with selected socio-demographic variables.

The computed Chi-square value for association between level of knowledge of High school teachers regarding prevention and safety measures during Covid-19 pandemic situation and their selected demographic variables is not found to be statistically significant at 0.05 levels for any of the selected socio demographic variables. These findings can be compared with pre-experimental one group pre-test post-test study to assess the knowledge regarding prevention and safety measures during Covid-19 pandemic situation and its impacts on health among people of Unjha city. It revealed that, there was no significant association between the knowledge and selected demographic variables. Study concluded that, after planned teaching program middle adults' people have improve the knowledge. The planned teaching program is an effective technique in inducing the knowledge level of middle adult's people regarding Prevention and safety measures during Covid-19 pandemic situation and Its Impact on Health.

Conflict of Interest
Not available

Financial Support
Not available

Reference

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