



EFFECT OF VIDEO ASSISTED TEACHING ON KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING INFECTION CONTROL MEASURES AND STRUCTURAL AUDIT AMONG HEALTH WORKERS AT SELECTED PRIMARY HEALTH CENTERS (PHC).

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INTRODUCTION:

Infection control is the discipline concerned with preventing nosocomial or health care-associated infection. Practices or technique that control or prevent risk of infection help to protect health care workers from disease. By practicing infection control techniques, the health workers can avoid spreading microorganisms and can protect themselves. Infection control addresses factors related to the spread of infections within the health-care setting including prevention (via hand hygiene/hand washing, cleaning/disinfection/sterilization, using personal protective equipment, vaccination and surveillance), monitoring/investigation of demonstrated or suspected spread of infection within a health-care setting.

Universal Precautions and more recently Standard Precautions have been widely promoted in high-income countries to protect health care workers from occupational exposure to blood and the consequent risk of infection with blood borne pathogens. In low-income countries, the situation is very different: Universal Precautions are often practiced partially, if at all, thereby exposing the HCWs to unnecessary risk of infection. The Centers for Disease Control and Prevention has stated that “It is well documented that the most important measure for preventing the spread of pathogenesis effective hand washing.” Hand washing is mandatory in health care settings. Hand hygiene is a term used to cover both hand washing using soap and water, and cleaning hands with waterless or alcohol-based hand sanitizers. Improved Hand Hygiene Prevents Health Care-Associated Infections.²

The effective use of disinfection and sterilization and procedures is important in preventing healthcare associated infections. Sterilization is the process where all the living microorganisms, including bacterial spores are killed. Disinfection is the process of elimination of most pathogenic microorganisms (excluding bacterial spores) on inanimate objects. Environmental surfaces can act as a source of pathogens which can give rise to nosocomial [hospital-acquired] infections". There two major categories of pathogenic organisms, they are blood borne pathogens and airborne pathogens. Examples of blood borne pathogens are hepatitis B, malaria, human immune deficiency virus. Examples of air borne pathogens are small pox, Tuberculosis and influenza etc. The very important measure to prevent hospital acquired infection among health care workers are proper usage of personal protective equipment. It is specialized clothing or equipment worn by a worker for protection against a hazard.

The hazard in a health care setting is exposure to blood, saliva, or other bodily fluids or aerosols that may carry infectious materials such as Hepatitis C, HIV etc. PPE prevents contact with a potentially infectious material by creating a physical barrier between the potential infectious material and the healthcare worker. Components of PPE include gloves, gowns, bonnets, shoe covers, face shields, CPR masks, surgical masks, goggles and respirators. If personal protective equipment's are utilized accordingly then health care workers can be protected from any type of infectious hazards.

Research approach : This study was used Quantitative research approach

Research design: Pre-experimental one group pre-test post-test design used for this study.

Settings of the study:

Setting refers to the area where the study is conducted. Quantitative researchers deliberately strive to study their phenomenon in a variety of aspects. Present study was done in the selected Primary Health centers (PHC).

Variables:

Variables are the characteristics, quality or attribute of a person or object that the researcher manipulates or controls or observes. Variables can be changed. Changes in the variables are studied to prove research hypotheses.

Following variables were used for present study:-

Independent variable: Video assisted teaching.

Dependent variable: Knowledge, attitude and practice score of health workers regarding infection control and structural audit.

Population: Is aggregate of the sampling unit in which the researcher is interested or has targeted the data collection to meet study objectives and/or wishes to generalize findings of the study. Research design helps researcher with decision for choosing population.

Target population: In this study, refers to the health workers.

Accessible population refers to the health workers at selected research settings during the period allotted for data collection.

Sample:

For the present study, the health workers in selected primary health center during data collection period are selected as per the inclusion criteria specified for this study.

Sample size: 30

Sampling technique: Non-probability purposive sampling technique was used to select 30 samples.

SAMPLING CRITERIA

Inclusion Criteria for sampling

- Health workers who are working in selected PHCs includes male health workers and female health workers
- Who are available at the time of data collection.
- Who are willing to participate in the study.

Exclusion criteria for sampling

- Health workers who have are sick or ill

DATA COLLECTION TECHNIQUE & TOOL

The task of defining the research variable and selecting or developing appropriate methods for collecting data are amongst the most challenging work in hand of a researcher. With high quality data collection methods, the accuracy and robustness of the conclusion are always subject to challenge. The most important and crucial aspect of any research is data collection, which provides answers to the questions under study.¹⁰

- Data collection relies on instruments. In this study, structured knowledge questionnaire, five point Likert's attitude scale and observation check list are prepared and used for data collection as tool.

Section A: Consists of demographic variable like age, gender, marital status, educational status, total year of experience, Monthly income, work place, Have you undergone any in-service education training programme on infection control measures, Source of information on knowledge regarding infection control measures.

Section B: Structured knowledge questionnaire regarding infection control and structural audit. It is divided into 6 sections and questions are 30 in numbers.

Section C: It includes Five point Likerts Attitude scale to assess the attitude of health assistants regarding infection control measures.

Section D: Observational checklist for the assessment of Practice of educational intervention on infection control measures.

Section E: Observational checklist for the structural audit on infection control.

PROCEDURE FOR DATA COLLECTION

Administrative permission was obtained from the selected Primary Health Centers for study. Samples were identified, based on the inclusion and exclusion criteria using non -probability purposive sampling technique. Sample were explained about the purpose of the study and assured about confidentiality of the information. Consent was obtained before collection of data. Data was collected using approved tools for demographic variables, five point Likert attitude scale and observation checklist was administration for Pretest, video assisted teaching was given on the same day. On 7th day Post test was conducted for effectiveness of video assisted teaching on infection control and structural audit. Effect of video teaching was evaluated on the knowledge, attitude, practices and structural audit using paired t test.

ANALYSIS AND INTERPRETATION OF DATA

The analysis is defined as the categories, ordering, manipulating and summarizing of data to obtain answers for research question. The purpose of analysis is to reduce data to intelligible and interpretable form so that the relation of research problems can be studied and tested.

In this research the data was analyzed in three sections. Based on study objectives and hypothesis testing required for testing.

OBJECTIVES OF THE STUDY WERE:

- To assess the pre-test and post test knowledge, attitude and practices regarding infection control measures and structural audit among health workers.
- To find an association of knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers with selected demographic variables.
- To find correlation of knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers with pretest score.

ORGANIZATION OF THE STUDY FINDINGS

The collected data was tabulated, analyzed, organized and presented under the following headings:

Section I: Description of samples (health workers) based on demographic data.

Section II: Analysis of data related to the pre-test and posttest knowledge, attitude and practices regarding infection control measures and structural audit among health workers.

Section III: Analysis of data related to the association of knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers with selected demographic variables.

Section IV: Analysis of data related to the correlation between knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers

Section I

Description of samples (health workers) based on their personal characteristics.

Table 1: Description of samples (health workers) based on their personal characteristics in terms of frequency and percentages.

N=30

Demographic variable	Frequency	%
Age in years		
21-30 years	8	26.7%
31-40 years	11	36.7%
41-50 years	9	30.0%
51-60 years	2	6.7%
Gender		
Male	9	30.0%
Female	21	70.0%
Religion		
Hindu	13	43.3%
Muslim	5	16.7%
Christian	6	20.0%
Other	6	20.0%
Marital status		
Married	23	76.7%
Unmarried	4	13.3%
Divorced	1	3.3%
Widow	2	6.7%
Educational status		
GNM	6	20.0%

ANM	10	33.3%
Laboratory technician	6	20.0%
Other	8	26.7%
Total years of experience		
1-10 years	15	50.0%
11-20 years	13	43.3%
21-30 years	1	3.3%
31-40 years	1	3.3%
Monthly income		
Up to Rs.10,000	16	53.3%
Rs.10,001-20,000	8	26.7%
Rs.20001-30000	6	20.0%
Workplace		
OPD	6	20.0%
Ward	8	26.7%
Laboratory	11	36.7%
Labour room	5	16.7%
Undergone any in-service education training programme on infection control measures		
Yes	5	16.7%
No	25	83.3%
Source of information on knowledge regarding infection control measures		
Mass media	13	43.3%
Training programmes	5	16.7%
Medical personals	6	20.0%
Hospital health information	6	20.0%

The above table shows that 26.7% of the health workers had age 21-30 years, 36.7% of them had age 31-40 years, 30% of them had age 41-50 years and 6.7% of them had age 51-60 years.

30% of them were males and 70% of them were females.

43.3% of them were Hindu, 16.7% of them were Muslim, 20% of them were Christian and 20% of them had some other religion.

76.7% of them were married, 13.3% of them were unmarried, 3.3% of them were divorced and 6.7% of them were widow.

20% of them were GNM, 33.3% of them were ANM, 3.3% of them were laboratory technician and 26.7% of them had some other education.

50% of them had 1-10 years of experience, 43.3% of them had 11-20 years of experience, 3.3% of them had 21-30 years of experience and 3.3% of them had 31-40 years of experience.

53.3% of them had monthly income up to Rs.10000, 26.7% of them had monthly income Rs.10001-20000 and 20% of them had monthly income Rs.20001-30000.

20% of them of them were working in OPD, 26.7% of them were working in ward, 36.7% of them were working in laboratory and 16.7% of them were working in labor room.

16.7% of them had undergone any in-service education training program on infection control measures.

43.3% of them had information regarding infection control measures from mass media, 16.7% of them had information from training programs, 20% of them had information from medical personals and 20% of them had information from health care.

Section II

Analysis of data related to the pre-test and posttest knowledge, attitude and practices regarding infection control measures and structural audit among health workers.

Table 2: Pretest and posttest knowledge regarding infection control measures and structural audit among health workers

N=30

Knowledge	Pre test		Post test	
	Freq.	%	Freq.	%
Poor (Score 0-10)	25	83.3%	0	0.0%
Average (Score 11-20)	1	3.3%	9	30.0%
Good (Score 21-30)	4	13.3%	21	70.0%

In pretest, 83.3% of the health workers had poor knowledge (Score 0-10), 3.3% of them had average knowledge (score 11-20) and 13.3% of them had good knowledge (Score 21-30) regarding infection control measures and structural audit. In posttest, 70% of them had good knowledge (score 21-30) and 30% of them had average

knowledge (Score 11-20) regarding infection control measures and structural audit. This indicates that the knowledge among health workers improved remarkably after video assisted teaching.

Section III:

Analysis of data related to the association of knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers with selected demographic variables.

Table 10: Fisher's exact test for association of knowledge regarding infection control measures and structural audit among health workers with selected demographic variables

N=30

Demographic variable		Knowledge			p-value
		Average	Good	Poor	
Age	21-30 years	1	1	6	0.861
	31-40 years	0	2	9	
	41-50 years	0	1	8	
	51-60 years	0	0	2	
Gender	Male	1	1	7	0.353
	Female	0	3	18	
Religion	Hindu	0	3	10	0.410
	Muslim	0	0	5	
	Christian	1	1	4	
	Other	0	0	6	
Marital status	Married	0	2	21	0.090
	Unmarried	1	1	2	
	Divorced	0	0	1	
	Widow	0	1	1	
Educational status	GNM	1	1	4	0.802
	ANM	0	1	9	
	Laboratory technician	0	1	5	
	Other	0	1	7	
Total years of experience	1-10 years	1	2	12	1.000
	11-20 years	0	2	11	
	21-30 years	0	0	1	
	31-40 years	0	0	1	
Monthly income	Up to Rs.10,000	0	1	15	0.031

	Rs.10,001-20,000	1	3	4	
	Rs.20001-30000	0	0	6	
Workplace	OPD	0	1	5	0.902
	Ward	1	1	6	
	Laboratory	0	1	10	
	Labor room	0	1	4	

Discussion :

The findings of the study have been discussed with reference to the objectives.

- To assess the pre-test and post test knowledge, attitude and practices regarding infection control measures and structural audit among health workers.
- In pretest, 83.3% of the health workers had poor knowledge (Score 0-10), 3.3% of them had average knowledge (score 11-20) and 13.3% of them had good knowledge (Score 21-30) regarding infection control measures and structural audit. In posttest, 70% of them had good knowledge (score 21-30) and 30% of them had average knowledge (Score 11-20) regarding infection control measures and structural audit. This indicates that the knowledge among health workers improved remarkably after video assisted teaching.
- In pretest, 73.3% of the health workers had negative attitude (score 0-22) and 26.7% of them had positive attitude (Score 23-45) towards infection control measures and structural audit. In posttest, 36.7% of the health workers had negative attitude (score 0-22) and 63.3% of them had positive attitude (Score 23-45) towards infection control measures and structural audit.
- In pretest, 80% of the health workers had poor practices (score 0-5) and 20% of them had average practices (Score 6-10) regarding infection control measures and structural audit. In posttest, all of them had good practices (score 11-15) regarding infection control measures and structural audit. This indicates that the practices among health workers improved remarkably after video assisted teaching.
- In pretest, 70% of the health workers had poor structural audit findings (Score 0-5) and 30% of them had average structural audit findings (Score 6-10). In posttest, 20% of them had average structural audit findings (Score 6-10) and 80% of them had good structural audit findings (score 11-15). This indicates that the video assisted teaching improved the structural audit findings remarkably.
- To find an association of knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers with selected demographic variables. Since p-value corresponding to monthly income was small (less than 0.05), the demographic variable monthly income was found to have significant association with the knowledge among health workers regarding infection control measures and structural audit. More the monthly income, poor is the knowledge regarding infection control measures and structural audit among health workers.

➤ To find correlation of knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers with pretest score. Pearson's correlation coefficient was used for the correlation between knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers. Above table represents the Pearson's correlation coefficient between knowledge, attitude and practice scores regarding infection control measures and structural audit among health workers. The correlation between pairs knowledge-attitude, knowledge-practices, knowledge audit-findings, attitude-practices and practices-audit findings are positive (>0) which indicates that there is positive correlation between these pairs. Only correlation coefficient between attitude-audit finding was negative, which indicates the reverse relation between attitude and audit findings. The strengths of these correlations were tested using t-test for the significance of correlation coefficient. All the p-values are larger except for the pair knowledge and attitude. For knowledge and attitude pair, the p-value was small (less than 0.05), the null hypothesis is rejected. There is significant positive correlation between knowledge and attitude among health care workers regarding infection control measures and structural audit among health workers. More the knowledge among them, better is their attitude towards infection control measures and structural audit among health workers.

Summary:

The aim of the study was to assess effect of video assisted teaching on knowledge, attitude and practices regarding infection control measures and structural audit among health workers at selected primary health centers (PHC).

Content validity was done by 15 experts in different fields. A pilot study was conducted on 3 samples. The reliability of tool was done by using test-retest Method. Pearson's correlation coefficient was used for assessment of reliability of tool. Pilot study was conducted when the tool for the study was found to be reliable and feasibility of samples for data collection confirmed. Non Probability convenience Sampling Method was used for selecting 30 health workers for this study.

Main study data was collected from August 26th to 2nd September 2020.

Results prove that the video assisted teaching improved the knowledge, attitude, practices and structural audit among samples of the study. As Average knowledge score in pretest was 9.9 which increased to 21.7 in posttest. T-value for this test was 7.6 with 29 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. It is evident that the video assisted teaching is significantly effective in improving the knowledge among the health workers. Average attitude score in pretest was 20.7 which increased to 23.9 in posttest. T-value for this test was 4.3 with 29 degrees of freedom. Corresponding p-value was large (greater than 0.05), there is no evidence against the null hypothesis. Average practices score in pretest was 8.5 which increased to 26.3 in posttest. T-value for this test was 28.9 with 29 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. It is evident that the video assisted teaching is significantly effective in improving the practices among the health workers. Average structural audit score in pretest was 5.2 which increased to 11.2 in posttest. T-value for this test was 20.3 with 29 degrees of freedom. Corresponding p-

value was small (less than 0.05), the null hypothesis is rejected. It is evident that the video assisted teaching is significantly effective in improving the structural audit score among the health workers.

Conclusion: Based on the analysis of findings of the study there was evident increase in the knowledge, attitude, practice scores among the health workers in the study after administration of video assisted teaching program.

For the scope of this study video assisted teaching was considered and it had proven statistically that the intervention considered was effective in increasing the knowledge, attitude, practice and structural audit scores among the health workers of selected PHCs

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