



## EFFECTIVENESS OF HAND HYGIENE PROTOCOL ON KNOWLEDGE AND PRACTICE REGARDING HAND HYGIENE AMONG HEALTH CARE ASSISTANTS OF SELECTED HOSPITAL, KOLLAM

### Nursing

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### ABSTRACT

#### Introduction

Hand hygiene is the practice, which keeps the hands free from pathogens or decrease the quantity prior to any procedure or touching the patient. Hand hygiene prevents cross – infection in hospitals, but healthcare assistant's adherence to hand hygiene is poor. Easy, timely access to both hand hygiene and skin protection is necessary for satisfactory hand hygiene behavior.

#### Materials and methods

- **Research approach:** In this study a quantitative research approach was adopted to assess the effectiveness of hand hygiene protocol on knowledge and practice regarding hand hygiene among healthcare assistants.
- **Research design:** The research design adopted for this study was quasi experimental pretest posttest control group design.
- **Sample:** In this study samples were the healthcare assistants in bishop benziger hospital, Kollam.
- **Sample size:** In this study 60 sample (30 in experimental and 30 in control group) working as health care assistants in bishop benziger hospital were selected.
- **Sampling technique:** Sampling technique used in this study was convenient sampling technique, which is a non-probability sampling approach

**Results:** The mean posttest knowledge score of selected samples in experimental group (14.8) was higher than the mean pretest score (10.3). The calculated table value (17.81) was greater than table value (2.05) at 0.05 level of significance. This indicated that there was statistically significant difference between mean pretest and posttest knowledge scores regarding hand hygiene protocol among healthcare assistants in experimental group. The mean posttest practice score of selected samples (13.7) was higher than the mean pretest score (9.4) in the experimental group. The calculated table value (8.26) was greater than table value (2.05) at 0.05 level of significance. This indicated that there was statistically significant difference between mean pretest and posttest practice scores regarding hand hygiene protocol among healthcare assistants after the structured teaching programme in the experimental group.

The association between pretest knowledge score among health care assistants and selected demographic variables was tested using chi-square test. The result showed that the calculated chi-square values of all demographic variables were less than table value at 0.05 level of significance. It shows that there is no significant association between pretest knowledge scores among health care assistants and selected demographic variables such as age, gender, education, previous knowledge regarding hygiene, years of experience, field of occupation and frequency of contact.

The association between pretest practice score of health care assistants and selected demographic variables was found out using chi-square test. The result showed that the calculated chi-square values of all demographic variables were less than table value at 0.05 level of significance. It shows that there is no significant association between pretest practice scores of health care assistants and selected demographic variables such as age, gender, education, previous knowledge regarding hygiene, years of experience, field of occupation and frequency of contact.

**Conclusion:** The present study was aimed to assess the effectiveness of structured teaching programme on knowledge and practice regarding hand hygiene protocol among staff nurses among health care assistants in Bishop Benziger Hospital in Kollam. The present study proved that structured teaching programme was effective in improving knowledge and practice regarding hand hygiene among health care assistants.

### KEYWORDS

Hand hygiene protocol; knowledge and practice; health care assistants.

#### INTRODUCTION

Clinical care staff and other health care workers are the frontline defense for applying daily infection control practices to prevent infections and transmission of organisms to other patients. Although training in preventing bloodborne pathogen exposures is required annually by the OSHA, clinical nurses (registered nurses, licensed practical nurses, and certified nursing assistants) and other health care staff should receive additional infection control training and periodic evaluations of aseptic care as a planned patient safety activity. Nurses and healthcare assistants have the unique opportunity to directly reduce health care-associated infections through recognizing and applying evidence-based procedures to prevent hospital acquired infections among patients and protecting the health of the staff.

#### MATERIALS AND METHODS

The main study was conducted in Bishop Benziger hospital, Kollam. The data collection period was from 2-11-19 to 28-11-19. Clearance certificate was obtained from the institutional ethics committee of Bishop Benziger College of nursing, Kollam. The permission to conduct the study was obtained from the concerned authority of the hospital. The researcher introduced herself and provided a brief introduction about research and a written informed consent was obtained from the healthcare assistants. 60 healthcare assistants were selected and they were divided into six groups, each group having a total of ten healthcare assistants. Three groups were named as experimental group and three groups as control group, making a total of 30 healthcare assistants in both experimental and control group. The pretest for knowledge was conducted for the total sample on the first day and teaching based on hand hygiene protocol was given to the

experimental group and no intervention to the control group. From the second day to the fourth day, hand hygiene practice was observed for experimental and control group. On the fifth day and sixth day the researcher did the demonstration of hand hygiene for the experimental and control group. On the seventh day posttest was conducted for both experimental and control group using structured knowledge questionnaire. On the seventh day and eighth day posttest for practice section was conducted for the experimental and control group by the researcher using practice check list. The data collection was terminated by thanking the participants for their cooperation. The data collected was then compiled for analysis.

#### RESULTS

##### Graphical representation of demographic variables

N=60

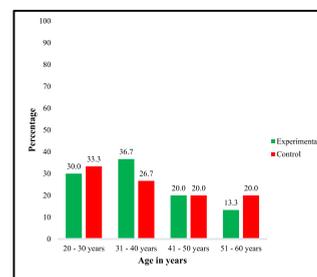


Figure 1: Percentage wise distribution of sample according to age

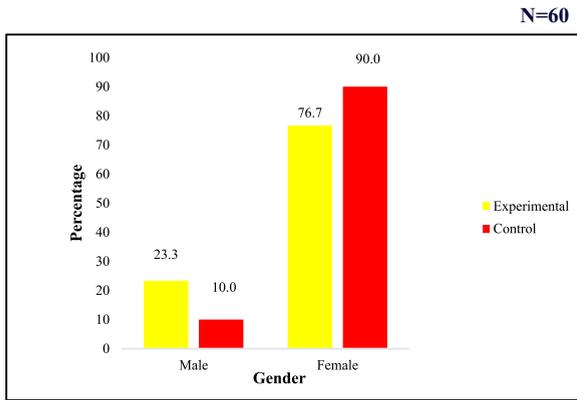


Figure-2: percentage wise distribution of sample according to gender

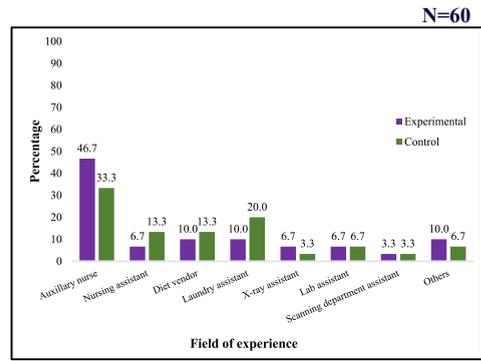


Figure 6: percentage wise distribution according to field of occupation

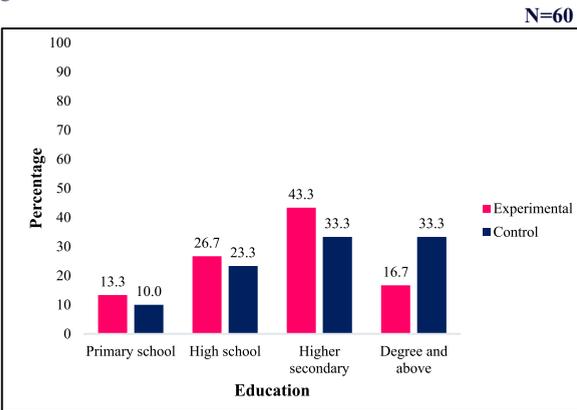


Figure-3: percentage wise distribution according to education

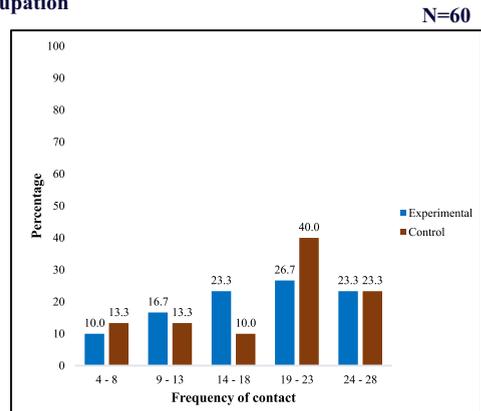


Figure 7: percentage wise distribution according to frequency of contact

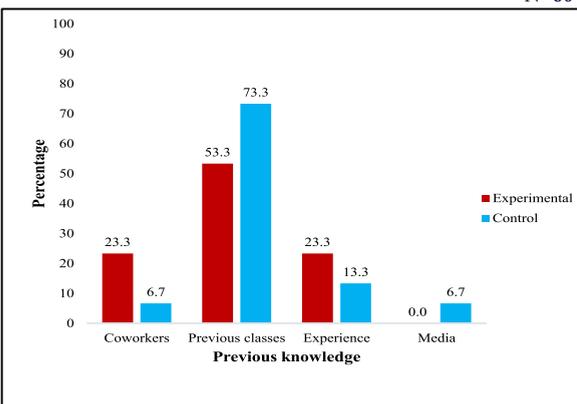


Figure 4: percentage wise distribution of sample according to previous knowledge regarding hand hygiene

Table 1: Description of knowledge regarding hand hygiene protocol among healthcare assistants.

Knowledge	Experimental group		Control group	
	Frequency	Percentage	Frequency	Percentage
Poor	6	20.0	6	20.0
Moderate	20	66.7	21	70.0
Good	4	13.3	3	10.0

Table-2: Comparison of mean pretest and posttest knowledge scores of healthcare assistants regarding hand hygiene in experimental group

	Mean	SD	't' value
Pretest	10.3	2.0	17.81
Posttest	14.8	1.7	

Table value t (29)=2.05

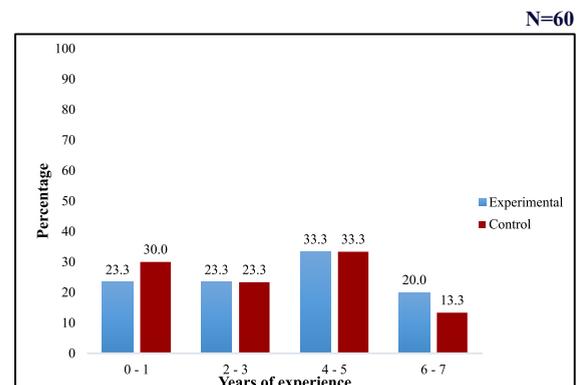


Figure-5: percentage wise distribution according to years of experience

Table 3: Description of knowledge regarding hand hygiene protocol among healthcare assistants in experimental and control group in posttest

Knowledge	Experimental group		Control group	
	Frequency	Percentage	Frequency	Percentage
Poor	0	0.0	0	0.0
Moderate	6	20.0	27	90.0
Good	24	80.0	3	10.0

Table 4: Description of the level of practice regarding hand hygiene protocol among healthcare assistants in experimental and control group in pretest

Practice	Experimental group		Control group	
	Frequency	Percentage	Frequency	Percentage
Poor practice	4	13.3	1	3.3
Satisfactory practice	18	60.0	26	86.7
Good practice	8	26.7	3	10.0

**Table 5: Comparison of pretest and posttest practice scores of healthcare assistants regarding hand hygiene in experimental group**

N=30

	Mean	SD	't' value
Pretest	9.4	2.4	8.26
Posttest	13.7	1.4	

Table value t (29)=2.05

**Table 6: Description of practice regarding hand hygiene among healthcare assistants in experimental and control group in posttest**

N=60

Practice	Experimental Group	Control Group
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**Table 8: Association between knowledge regarding hand hygiene among healthcare assistants and selected demographic variables**

N=60

Sl. No	Demographic variables	Knowledge			Calculated Chi square	Df	Table Value	Level of significance
		Poor	Moderate	Good				
1	Age in years							
	a. 20-30	5	10	4	5.25	6	12.59	NS
	b. 31-40	3	12	3				
	c. 41-50	1	9	2				
	d. 51-60	1	9	-				
2	Gender							
	a. Male	2	7	1	0.18	2	5.99	NS
	b. Female	8	35	7				
3	Education							
	a. Primary school	3	4	-	9.57	6	12.59	NS
	b. High school	2	9	4				
	c. Higher secondary	3	17	3				
	d. Degree and above	-	12	3				
4	Previous knowledge regarding hand hygiene							
	a. Co workers	2	22	-	9.16	4	9.49	NS
	b. Previous classes	7	23	8				
	c. Experience	2	6	3				
	d. Media	-	3	-				
5	Year of experience							
	a. 0-1	3	8	5	5.52	6	12.59	NS
	b. 2-3	-	9	3				
	c. 4-5	1	14	5				
	d. 6-7	1	8	1				
6	Field of occupation							
	a. Auxiliary nurse	5	15	4	6.26	14	23.69	NS
	b. Nursing assistant	-	5	1				
	c. Diet vendor	1	5	1				
	d. Laundry assistant	1	7	1				
	e. X-ray assistant	-	3	-				
	f. Lab assistant	-	3	1				
	g. Scanning department assistant	-	2	-				
	h. Others	1	4	-				
7	Frequency of contact							
	a. 4-8	1	5	1	3.85	8	15.51	NS
	b. 9-13	-	7	2				
	c. 14-18	2	7	1				
	d. 19-23	3	13	4				
	e. 24-28	3	7	4				

P < 0.05 level of significance \*S-Significant NS-Nonsignificant

**Table 9: Association between pretest practice score regarding hand hygiene among healthcare assistants and selected demographic variables**

N=60

Sl No	Demographic variables	Practice			Calculated Chi square	Df	Table Value	Level of significance
		Poor	Moderate	Good				
1	Age in years							
	a. 20-30	5	11	3	3.04	6	12.59	NS
	b. 31-40	3	13	2				
	c. 41-50	1	10	1				
	d. 51-60	1	8	1				
2	Gender							
	a. Male	2	7	1	0.18	2	5.99	NS
	b. Female	8	35	7				
3	Education							

	a. Primary school	2	4	1	3.57	6	12.59	NS
	b. High school	2	9	4				
	c. Higher secondary	3	17	3				
	d. Degree and above	1	12	2				
<b>4</b>	<b>Previous knowledge regarding hand hygiene</b>							
	a. Co workers	2	20	2	4.62	4	9.49	NS
	b. Previous classes	6	25	7				
	c. Experience	2	6	3				
	d. Media	-	2	-				
<b>5</b>	<b>Year of experience</b>							
	a. 0-1	2	10	4	8.99	6	12.59	NS
	b. 2-3	1	8	1				
	c. 4-5	1	15	4				
	d. 6-7	1	8	1				
<b>6</b>	<b>Field of occupation</b>							
	a. auxiliary nurse	5	17	2	4.41	14	23.69	NS
	b. Nursing assistant	1	4	1				
	c. Diet vendor	1	5	1				
	d. Laundry assistant	1	7	1				
	e. X-ray assistant	-	2	1				
	f. Lab assistant	1	2	1				
	g. Scanning department assistant	-	2	-				
	h. others	1	3	1				
<b>7</b>	<b>Frequency of contact</b>							
	a. 4-8	1	6	-	4.83	8	15.51	NS
	b. 9-13	-	8	1				
	c. 14-18	1	8	1				
	d. 19-23	3	14	3				
	e. 24-28	3	8	3				

**P < 0.05 level of significance \*S-Significant NS-Nonsignificant**

## DISCUSSION

The findings of the present study were supported by a cross-sectional study conducted by the Infection Control team under the Department of Microbiology, Jubilee Mission Medical College and Research Institute, Thrissur, Kerala, India for 2 months of June and July, 2015. In the reference study, the researcher used purposive sampling technique to select the samples whereas in the present study the investigator used convenient sampling technique. In the present study the investigator selected 60 samples while in the reference study 300 samples were selected for the study. In the reference study the data collection was accomplished by questionnaire and checklist, likewise in the present study the investigator used a similar tool. In both the studies, individuals showed knowledge deficits in some aspects of hand hygiene. The present study concluded that structured teaching programme was effective in improving the knowledge regarding hand hygiene protocol.

The findings of the present study were also supported by another study conducted to assess hand hygiene knowledge and practice among health care workers in a tertiary health institution, North-central Nigeria. The reference study was cross-sectional study conducted among health care workers in a 600-bed capacity tertiary health centre. The study was conducted between April and November 2013. In both the studies, pretest posttest control group design was used. A multi-stage randomized sampling method was used in reference study, while in present study convenient sampling was used. In the reference study self-reported practices were used, while in present study the structured knowledge questionnaire and an observation checklist regarding hand hygiene protocol were used for data collection.

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