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## Effectiveness of infection control guidelines on knowledge & practice regarding prevention of nosocomial infection among nursing staff

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### Abstract

**Aims & objectives:** The main aim of the study was to assess the effectiveness of infection control guidelines on knowledge and practice regarding prevention of nosocomial infection among nursing staff working in Dhiraj General Hospital. **Background of the study:** The nurse should be aware of the problem of nosocomial infection, their effects on patient morbidity, mortality and increased hospital costs, as well as the legal aspects concerning them.

**Keywords:** ICG-Infection control guidelines, DGH- Dhiraj General Hospital, NS-Nosocomial infection.

### Introduction

Hospital Acquired Infection (HAI), also called a nosocomial infection, is an infection that first appears between 48 hours and four days after a patient is admitted to a hospital or other health-care facility.

Over 1.4 million people worldwide are suffering from HAIs. In the United States, it has been estimated that as many as one hospital patient in ten acquires a nosocomial infection, or 2 million patients a year. Estimates of the annual cost range from \$ 4.5 billion to \$11 billion and up. Nosocomial infections contributed to 88,000 deaths in the US in 1995. In France, prevalence was 6.87% in 2001 and 7.5% in 2006, some patients were infected twice. In Italy, in the 2000s, about 6.7% of hospitalized patients were infected, i.e, between 450,000 and 700,000 patients, which caused between 4,500 and 7,000 deaths. In Switzerland, extrapolations assume about 70,000 hospitalized patients are affected by nosocomial infections; between 2 and 14% of hospitalized patients.

In India, 30 to 35 percent of persons admitted to hospitals develop HAIs. Among hospital-acquired infections 30 to 40% are urinary tract infections, 15 to 20% surgical wound infections, 15 to 20% lower respiratory tract infections and 5 to 15% blood stream infections.

### Need For the Study

Nosocomial infections are the infections acquired during hospital stay. These infections concern 5-15% (estimated 2 million cases annually) of hospitalized patients and can lead to complications in 25-33% of those admitted in ICU. These are an important cause of (80,000 annually) and economic cost are considerable which include cost of additional stay in hospital, drugs, and delayed discharge etc.

WHO indicated that international prevalence of nosocomial infection is at 9%. Assuming the cost of health care in India is 10%. An average patient in India ends up paying Rs. 1.2-1.5 lakhs over and above the actual treatment cost.

Nosocomial infections occur about 5-10% of hospital admissions in world wide. In India nosocomial infections rate is alarming and is estimated at about 30-50% of all hospital infections.

Infection is the invasion of the body by pathogenic microorganisms that invade the tissue multiply and overcome the patient's resistance. Nosocomial infections are infections which are a result of treatment in a hospital or a healthcare service unit, but secondary to the patient's original condition. Infections are considered nosocomial if they first appear 48 hours or more after hospital admission or within 30 days after discharge. This type of infection is also known as a hospital-acquired infection.

### Objectives

- 1) Assess the existing knowledge score regarding preventive of nosocomial infection among nursing staff.
- 2) Assess the existing practice score regarding preventive of nosocomial infection among nursing staff.
- 3) Assess the post test knowledge scores regarding preventive of nosocomial infection among nursing staff.
- 4) Assess the post test practice scores preventive of nosocomial infection among nursing staff.
- 5) Find an association between pretest knowledge scores of nursing staff with their socio-demographic variables.

### Hypothesis:

**H<sub>1</sub>:** There will be significant difference between post-test and the pre-test knowledge score level of nursing staff on prevention of nosocomial infection among nursing staff.

**H<sub>2</sub>:** There will be significant difference between post-test & pre-test practice score.

**H<sub>3</sub>:** There will be significant association between pre-test, knowledge scores of nursing staff with their socio-demographic variables.

### Research Approach

An evaluative research approach was adopted in order to assess the effectiveness of infection control guidelines on knowledge & practice regarding prevention of nosocomial infection among nursing staff.

### Research Design.

One group pre-test post-test design was adopted for the study (O<sub>1</sub>-X-O<sub>2</sub>).the investigator introduced tested criterion measure before and after planned exposure which is depicted as O<sub>1</sub> & O<sub>2</sub> respectively.

### Materials & Methods

#### Setting

The present study was conducted in Dhiraj General Hospital, Sumandeep Vidyapeeth, Piparia, Baroda.

#### Population

The population comprises of nursing staff working in DGH.

#### Sample size

The sample size was 100 nursing staff.

#### Sampling Technique

Convenient sampling technique was used for this study.

#### Method of data collection

Knowledge Questionnaire

#### Analysis and Interpretation

Descriptive and inferential statistics

#### Sampling criteria

The samples were selected with the following predetermined set of criteria.

#### Inclusion criteria

- Nursing staff that is BSC NSG & GNM working in Dhiraj hospital.

#### Exclusive criteria

- M.Sc. Nursing staff working in hospital.

- Those who have undergone awareness programme within 6 months.
- ANM, Nursing Aid, Nursing Assistant are not included in the study

### Results

Analysis of findings of the data collected from 100 nursing staff of Dhiraj general hospital. The Analysis was carried out in 2 parts. Demographic characteristics of nursing staff and analysis of knowledge of nosocomial infection and practice.

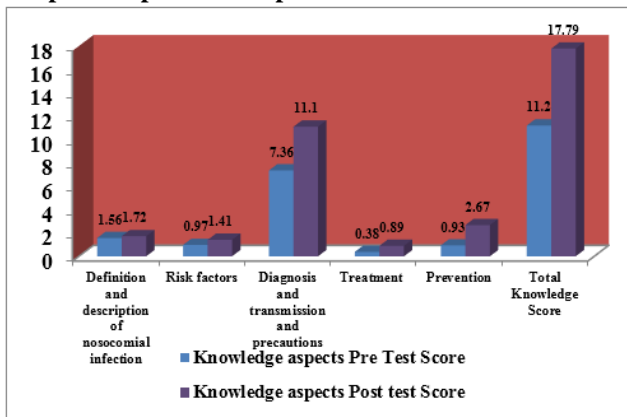
**Table 1:** Table of socio-demographic data overall

Sr No	Variables	Score median 11 and above 11	Score below 11	Total	X <sup>2</sup>	Level of significance
<b>1.</b>	<b>Age</b>					
	a)<25 years	50	24	74	<b>4.943 (DF=4)</b>	NS
	b)25-35 years	10	6	16		
	c)36-45 years	2	0	2		
	d)46-55 years	1	0	1		
	e) >55 years	7	0	7		
		<b>70</b>	<b>30</b>	<b>100</b>		
<b>2.</b>	<b>Gender</b>					
	a)Male	18	9	27	<b>0.193 (DF=1)</b>	NS
	b)Female	52	21	73		
		<b>70</b>	<b>30</b>	<b>100</b>		
<b>3.</b>	<b>Qualification</b>					
	a)GNM	19	7	26	<b>0.585 (DF=1)</b>	NS
	b)B.sc Nursing	48	26	74		
		<b>67</b>	<b>33</b>	<b>100</b>		
<b>4.</b>	<b>Experience</b>					
	a)0-3 years	53	25	78	<b>7.815 (DF=3)</b>	NS
	b)4-6 years	5	4	9		
	c)7-9 years	1	1	2		
	d)10 years & above	9	2	11		
		<b>68</b>	<b>32</b>	<b>100</b>		
<b>5.</b>	<b>Working Area</b>					
	a)Medical ward	4	0	4	<b>10.308 (DF=8)</b>	NS
	b)Surgical ward	4	4	8		
	c)Operation theatre	2	0	2		
	d)CCU	45	2	68		
	e)Pediatric ward	5	0	5		
	f)Obstetric ward	4	4	8		
	g)Blood Bank	1	0	1		
	h)Ophthalmic Ward	1	0	1		
	i)Any other Ward	<b>3</b>	<b>0</b>	<b>3</b>		

6	Designation					
	a)Staff Nurse	52	25	77	0.033(D F=1)	NS
	b)Incharge Nurse	16	7	23		
		68	32	100		

Findings revealed that pre-test score mean was (50.90%).Whereas the post- test mean score was (80.86%).The paired ‘t’ test (42.22) shows that the gain in knowledge is very highly significant.

**Comparison pretest and post test**



**According to objectives:**

**Assess the existing knowledge score of nursing staff regarding prevention of nosocomial infection.**

The overall mean percentage of pre-test knowledge score of 50.90%in pre-test. And the SD score is 1.33

**Assess the existing post-test knowledge score of nursing staff regarding prevention of nosocomial infection.**

The overall mean percentage of post-test knowledge score of 80.96%in pre-test. And the SD score is 0.99

**Assess the existing practice scores regarding preventive of nosocomial infection among nursing staff.**

The overall mean percentage of post-test knowledge score is 11.16% in pretest. And the SD score is 0.99

**Assess the post test practice scores preventive of nosocomial infection among nursing staff.**

The overall mean percentage of posttest practice scores is 75.5% in posttest .And the SD score is 0.71

**Association between pre-test level regarding prevention of nosocomial infection guidelines of knowledge scores with the selected socio demographic variables.**

In the finding of association between selected demographic variables of nursing staff and their knowledge scores, there is statically age, gender this variables are non-significant and the qualification of nursing staff, experience, present area of work and designation & previous knowledge of nosocomial infection are non-significant statistically.

**Hypothesis**

According to hypothesis:

**H1: The mean post-test knowledge score of nursing staff regarding nosocomial infection will be significantly higher than mean pre-test knowledge score.**

In that the post-test knowledge score is 80.86% and pre-test knowledge score is 50.90%, so it state that hypothesis is accepted.

**H2: There is significant difference between post-test and pre-test score**

In that post-test practice score is 75.5% and pretest practice score is 11.16%.so that hypothesis is accepted.

**H3: There is significant association between pretest, knowledge score of nursing staff with their socio-demographic variable**

Age, Total Experience, Designation, Gender, Qualification of nursing staff, present area of work are non-significant.

**Conclusion**

It can be concluded that nursing staff has improved their knowledge regarding prevention of nosocomial infection.

**Recommendations**

An experimental study can be conducted with control group for the effective comparison of the results. A similar study can be replicated on more sample to generalize the findings.

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