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A Study to Assess the Knowledge Regarding Nosocomial Infections among 4th Year B. Sc. Nursing Students at SCPM College of Nursing and Paramedical Sciences, Gonda

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Abstract: ***A study to assess the knowledge regarding nosocomial infections among 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda with the objective to assess the knowledge regarding nosocomial infections among 4th year B. Sc. Nursing students. The conceptual framework was done based on Conceptual Framework based on general system theory as postulated by Von Ludwig Bertalanffy (1968). In order to accomplish the objectives of the study, a descriptive study design was adopted. In this study, the sample consists of 50 B. Sc. Nursing students who fulfilled the inclusion criteria for the study. The non - probability convenient sampling technique was used for this study. A structured socio demographic data, and Questionnaire to assess the knowledge regarding nosocomial infection were selected on the basis of the objectives of the study. The main study was conducted from 05 - 05 - 2021 to 25 - 06 - 2021 at SCPM College of nursing and paramedical sciences. The maximum 21 (42%) samples were having Moderate Knowledge, 19 (38%) samples were having Adequate Knowledge, 10 (20%) samples were having Inadequate Knowledge level on nosocomial infections. The chi - square implies that there is no significant association between knowledge level and the selected socio demographic variables as the chi - square value is lower than the table value at 0.05 level of significance. Therefore, the H_1 was rejected at 0.05 level of significance.***

Keywords: Nosocomial infection; Hospital; Nursing college.

1. Introduction

Nosocomial infections, also called health - care - associated or hospital - acquired infections, are a subset of infectious diseases acquired in a health - care facility[1]. Infection occurs when pathogen (s) spread to a susceptible patient host. In modern healthcare, invasive procedures and surgery, indwelling medical devices, and prosthetic devices are associated with these infections. The etiology of HAI is based on the source or type of infection and the responsible pathogen, which may be bacterial, viral, or fungal.[2]

The infection can originate from the outside environment, another infected patient, staff that may be infected, or in some cases, the source of the infection cannot be determined. In some cases the microorganism originates from the patient's own skin microbiota, becoming opportunistic after surgery or other procedures that compromise the protective skin barrier. Though the patient may have contracted the infection from their own skin, the infection is still considered nosocomial since it develops in the health care setting [3]. An easy way to understand the term is that the infection tends to lack evidence that it was incubating, or present when the patient entered the healthcare setting, thus meaning it was acquired post - admission [4].

The most frequent types of infections include central line - associated bloodstream infections, catheter - associated urinary tract infections, surgical site infections and ventilator - associated pneumonia [5].

Two of the bacteria species most likely to infect patients are the Gram - positive strains of methicillin - resistant Staphylococcus aureus, and Gram - negative Acinetobacter baumannii. While antibiotic drugs to treat diseases caused by methicillin - resistant Staphylococcus aureus are available, few effective drugs are available for Acinetobacter. Acinetobacter bacteria are evolving and becoming immune to antibiotics, so in many cases, polymyxin - type antibacterials need to be used. "In many respects it's far worse than MRSA, " said a specialist at Case Western Reserve University [6].

2. Need for Study

Of every hundred hospitalized patients, seven in developed and ten in developing countries can acquire one of the healthcare associated infections [7]. Populations at stake are patients in Intensive Care Units (ICUs), burn units, undergoing organ transplant and neonates. According to Extended Prevalence of Infection in Intensive Care (EPIC II) study, the proportion of infected patients within the ICU are often as high as 51% [8]. Based on extensive studies in USA and Europe shows that HCAI incidence density ranged from 13.0 to 20.3 episodes per thousand patient - days.[9]

With increasing infections, there is an increase in prolonged hospital stay, long term disability, increased antimicrobial resistance, increase in socio - economic disturbance, and increased mortality rate. Spare information exists on burden of nosocomial infections because of poorly developed surveillance systems and inexistent control methods.[10]

In India, studies reporting nosocomial infections in ICU have ranged from 11% to 60%. The wide variance in the prevalence is because of the presence or absence of various risk factors distributed unevenly across the health care settings.[11] From the above reference and the researcher's own experience in clinical area pushed him to do this study, as the students going to work in clinical area, they must know the nosocomial infection and its treatment methods. The B. Sc. Nursing students already having nosocomial infection in their syllabus. So, this study helps to know how much knowledge the students having about it. Thereby, the researcher can decide to improve their knowledge by different teaching methods in future.

Objectives

1) To assess the knowledge of 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda on nosocomial infections.
2) To find a significant association between knowledge level and the selected socio demographic variables of 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda.

Hypothesis

H_1: There will be significant association between knowledge level and the selected socio demographic variables of 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda.

Assumptions

1) The 4th year B. Sc. Nursing students may have knowledge on nosocomial infections.
2) This study helps the researcher to understand the knowledge level of students regarding nosocomial infections.

Operational definition

1) **Knowledge:** It refers to the correct responses of the 4th year B. Sc. Nursing students to the structured questionnaire regarding nosocomial infections.
2) **Nosocomial infection:** Nosocomial infections, also called health - care - associated or hospital - acquired infections, are a subset of infectious diseases acquired in a health - care facility.
3) **Nursing Students:** In this study it refers that the students who have taken bachelor degree in nursing at SCPM college of nursing and paramedical sciences and studying in 4th of B. Sc. Nursing.

3. Methodology

The conceptual framework was done based on **Conceptual Framework based on general system theory as postulated by Von Ludwig Bertalanffy (1968).** This study was done to assess the knowledge regarding nosocomial infections among 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda. In order to accomplish the objectives of the study, a descriptive study design was adopted. In this study, the sample consists of 50B. Sc. Nursing students who fulfilled the inclusion criteria for the study. The non - probability convenient sampling technique was used for this study. A structured socio demographic data, and Questionnaire to assess the knowledge regarding nosocomial infection were selected on the basis of the objectives of the study. Pilot study was conducted, then the main study was conducted from 05 - 05 - 2021 to 25 - 06 - 2021 at SCPM College of nursing and paramedical sciences. The collected data was tabulated according to various parameters and the complete analysis was done with descriptive and inferential statistics.

4. Result

Section I: Frequency and percentage distribution of socio demographic variables of 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda.

Table 1: Frequency and percentage distribution of socio demographic variables, n=50

S. No.	Variables	Experimental Group	
		Frequency	Percentage
1	Age in years		
	a) 20 to 21	34	68
	b) 22 to 23	10	20
	c) 24 to 25	6	12
2	Gender		
	a) Male	40	80
	b) Female	10	20
3	Type of family		
	a) Nuclear family	28	56
	b) Joint family	22	44
4	Education of mother		
	a) Illiterate	11	22
	b) Primary school	18	36
	c) Secondary school	12	24
	d) graduation and above	9	18
5	Education of father		
	a) Illiterate	15	30
	b) Primary school	16	32
	c) Secondary school	9	18
	d) graduation and above	10	20
6	Previous exposure to nosocomal infection		
	a) Yes	34	68
	b) No	16	32
7	Source of information		
	a) Media	6	12
	b) Relatives	8	16
	c) Neighbours	10	20
	d) Friends	12	24
	e) Medical professionals	14	28

The above table 1 explains that the maximum 34 (68%) samples' age in years was 20 to 21 years, 40 (80%) samples are males, 28 (56%) samples' type of family was nuclear family, 18 (36%) samples' education of mother was primary school, 16 (32%) samples' education of father was primary school, 34 (68%) samples' previous exposure to nosocomial infection was yes, 14 (28%) samples' source of information was medical professionals.

Section II: Knowledge level of 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda on nosocomial infections

Table 2: Knowledge level of 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda on nosocomial infections, n= 50

Knowledge level	Frequency	Percentage
Inadequate	10	20
Moderate	21	42
Adequate	19	38

The above table 2 implies that the maximum 21 (42%) samples were having Moderate Knowledge, 19 (38%) samples were having Adequate Knowledge, 10 (20%) samples were having Inadequate Knowledge level on nosocomial infections.

Section III: Find the significant association between knowledge level and the selected socio demographic variables of 4th year B. Sc. Nursing students at SCPM college of nursing and paramedical sciences, Gonda.

Table 3: Association between knowledge level and the selected socio demographic variables, n=50

	Socio - demographic Variables	<median	>=median	Total	Df	Chi - Square	Inference
1	**Age in years**						
	a) 20 to 21	15	19	34	2	1.537	p>0.05 NS
	b) 22 to 23	6	4	10			
	c) 24 to 25	4	2	6			
2	**Gender**						
	a) Male	17	23	40	1	4.5	p>0.05 NS
	b) Female	5	5	10			
3	**Type of family**						
	a) Nuclear family	18	10	28	1	5.195	p>0.05 NS
	b) Joint family	7	15	22			
4	**Education of mother**						
	a) Illiterate	4	7	11	3	2.374	p>0.05 NS
	b) Primary school	8	10	18			
	c) Secondary school	7	5	12			
	d) graduation and above	4	5	9			
5	**Education of father**						
	a) Illiterate	8	7	15	3	2.467	p>0.05NS
	b) Primary school	10	6	16			
	c) Secondary school	5	4	9			
	d) graduation and above	5	5	10			
6	**Previous exposure to nosocomial infection**						
	a) Yes	18	16	34	1	0.368	p>0.05 NS
	b) No	7	9	16			
7	**Source of information**						
	a) Media	4	2	6	4	3.386	p>0.05 NS
	b) Relatives	5	3	8			
	c) Neighbours	5	5	10			
	d) Friends	5	7	12			
	e) Medical professionals	8	6	14			

The chi - square table 3 implies that there is no significant association between knowledge level and the selected socio demographic variables as the chi - square value is lower than the table value at 0.05 level of significance. Therefore, the H_1 was rejected at 0.05 level of significance.

5. Discussion& Summary

The maximum 34 (68%) samples' age in years was 20 to 21 years, 40 (80%) samples are males, 28 (56%) samples' type of family was nuclear family, 18 (36%) samples' education of mother was primary school, 16 (32%) samples' education of father was primary school, 34 (68%) samples' previous exposure to nosocomial infection was yes, 14 (28%) samples' source of information was medical professionals.

The maximum 21 (42%) samples were having Moderate Knowledge, 19 (38%) samples were having Adequate Knowledge, 10 (20%) samples were having Inadequate Knowledge level on nosocomial infections. This result also supported by the study conducted by Sophia. G (2019). In her study she revealed that maximum of nursing students had adequate knowledge on nosocomial infection.1[2]

The chi - square implies that there is no significant association between knowledge level and the selected socio demographic variables as the chi - square value is lower than the table value at 0.05 level of significance. Therefore, the H_1 was rejected at 0.05 level of significance. This result was supported by study conducted by Parastoo Majidipor et al. (2019). In this study the result said that there was no statistically significant relationship between the knowledge of students and variables such as gender and academic year of the students [13]. In our study also there is no significant association found.

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