

A Study to Assess the Level of Knowledge On Mucormycosis among Nursing Students

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Abstract:

Background: Mucormycosis, a rare, potentially lethal infection, is caused by the fungus of the order Mucorales. But when it does occur, it is well reminisced by those who have cared for the afflicted patient because of the speed with which it can progress. It has certainly earned the designation of the most acutely fatal fungal infection known to man. Mucormycosis is best known for its rhino-cerebral presentation even though it can infect the lungs, central nervous system, gastrointestinal tract, skin, etc.

Materials and Methods: A descriptive study was adopted to assess the level of knowledge on mucormycosis among nursing students using a non-probability consecutive sampling technique. The study included 200 bachelor's and master's students from, Shri Vinoba Bhave College of Nursing, Silvassa. Online google form was used to collect data which included socio-demographic data and 25 MCQ questions.

Results: The analysis of the study revealed that the majority of the student were in age group ≥ 22 years. 132 students did not previously attend the CNE and had no knowledge of mucormycosis, majority of students did not attend any patient of mucormycosis. 42% had inadequate knowledge, 31% had moderate knowledge, and 27% had adequate knowledge. Mean \pm SD was 15.04 with 3.78, mean % was 60.16. There was an association between age, year of study with level of knowledge and no association between religion, previously attended any training or CNE regarding mucormycosis, previous knowledge regarding mucormycosis, and observed any patient of mucormycosis with level of knowledge.

Conclusion: The result showed that there was inadequate knowledge among nursing students on mucormycosis.

Key Word: Level of Knowledge, Mucormycosis, Nursing Student.

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I. Introduction

Mucormycosis is emerging as one of the morbidities and mortality-prone complications of covid-19 infection, often seen in immune-compromised patients and those with diabetes (Type 2).¹ Mycosis often presents as debilitating rhino-orbital-cerebral and pulmonary infections. The clinical hallmark of invasive mucormycosis is tissue necrosis resulting from angioinvasion and subsequent thrombosis. In most cases, the infection is rapidly progressive and results in death unless underlying risk factors (i.e., metabolic acidosis) are corrected and aggressive treatment with antifungal agents and surgical excision is started.² All through at the time of the second wave of covid in India there was a rapid rise in mucormycosis cases in patients infected with covid. This rise found was due to many factors like intake of steroid, diabetes mellitus, administration of oxygen therapy, and ventilator/ICU management.

II. Material And Methods

This descriptive study was carried out on nursing students from, Shri Vinoba Bhave College of Nursing, Silvassa, DNH&DD. This study aims to assess the level of knowledge on mucormycosis among nursing students. non-probability consecutive sampling technique was adopted to select the sample. The study included 200 bachelor's and master's students. Data was collected using Google Forms(Online) which included socio-demographic data and Multiple-Choice questions.

Study Design: Descriptive study.

Study Location: Shri Vinoba Bhave College of Nursing, Silvassa, Dadra and Nagar Haveli & Daman Diu.

Study Duration: 21 July to 28 July 2021.

Sample size: 200 Nursing Students.

Sample size calculation: The sample size was estimated on the basis of Cochran's formula. The target population from which we selected our sample was considered 20,000. We assumed that the confidence level of 95% with margin of error 5% and Population proportion 15%. The sample size actually obtained for this study was 195. We planned to include 200 nursing students.

Subjects & selection method: The study population were drawn by consecutive sampling method and the study subjects were nursing students, studying at Shri Vinoba Bhave College of Nursing, Silvassa.

Inclusion criteria:

1. Students willing to participate in the study.
2. Students using smart phone.

Exclusion criteria:

1. Students not willing to participate in the study.
2. Students who were absent at the time of data collection.

Procedure methodology

Formal Permission was obtained from the Principal, Shri Vinoba Bhave College of Nursing, Silvassa to carry over the study. Written consent was obtained from the Nursing Students to be a part of the study after explaining the purpose of the study & ensuring the confidentiality.

Self-administered knowledge questionnaire was formulated (Online Google Form). It was validated by experts from the Department of Medical-Surgical Nursing and Language. Tool comprised of two parts, Part A: - Socio-demographic variables which comprised Age, year of study, religion, previously attended any Training or Continue Nursing Education regarding mucormycosis, previous knowledge regarding mucormycosis, and observed any patient of mucormycosis. Part B was Self-administered knowledge questionnaire regarding mucormycosis. A total of 25 (twenty-five) multiple-choice questions were used to assess the level of knowledge regarding mucormycosis. The questions were constructed relevant to general aspects regarding mucormycosis, causes and risk factors, sign and symptoms, diagnosis and management, prevention, complication.

The Google form prepared was administered online to the students. For each correct answer, 01 score was given and wrong answers were scored zero. The maximum total score was twenty-five. The total scores were computed and categorized as Inadequate knowledge with a score less than or equal to 13, a score of 14-19 was categorized as moderate knowledge, and score 20-25 as Adequate knowledge. At last Master coding sheet was prepared for data analysis.

Statistical analysis

Data was analyzed using SPSS version 20. The data analysis was done by using descriptive and inferential statistics. The collected data was summarized and tabulated by using descriptive statistics which included mean, percentage, standard deviation. Inferential statistics which included chi-square test for association between the knowledge and socio-demographic variables. The level $P < 0.05$ was considered as the cutoff value or significance.

III. Result

The data findings based on the objectives were organized and finalized according to the plan for data analysis and are presented in following sections:

SECTION 3.1: Description of socio-demographic variables.

SECTION 3.2: Assess the level of Knowledge.

SECTION 3.3: Mean and Standard Deviation.

SECTION 3.4: Association between pre-test level of knowledge with demographic variables.

Section 3.1: Description of socio-demographic variables of the students regarding mucormycosis.

Table 1: Frequency and Percentage distribution of socio-demographic variables of the students regarding mucormycosis.

N=200

Sr No.	Demographic data	Subjects (n=200)		Sr No.	Demographic data	Subjects (n=200)	
		f	%			f	%
1.	Age			4.	Previously attended any training or CNE regarding mucormycosis		
	a) 18 Year	17	8.5		a) Yes		
	b) 19 Year	34	17		b) No	68	34
	c) 20 Year	36	18			132	66
	d) 21 Year	45	22.5				
	e) ≥ 22 Year	68	34				
2.	Year of Study			5.	Previous knowledge regarding mucormycosis		
	a) First Year B.sc Nursing	44	22		a) Yes		
	b) Second Year B.sc Nursing	31	15.5		b) No	68	34
	c) Third Year B.sc Nursing	48	24			132	66
	d) Fourth Year B.sc Nursing	45	22.5				
	e) First Year M.sc Nursing	17	8.5				
	f) Second Year M.sc Nursing	15	7.5				
3.	Religion			6.	Observed any patient of mucormycosis		
	a) Hindu	182	91		a) Yes	93	46.5
	b) Christian	13	6.5		b) No	107	53.5
	c) Muslim	5	2.5				

Section 3.2 Assesses the level of knowledge.

Graph 1: Percentage wise distribution of the Level of Knowledge of Nursing students on Mucormycosis.

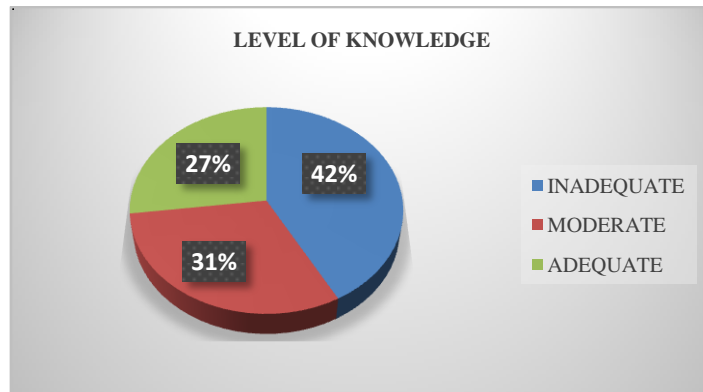


Table 2: Frequency and Percentage wise distribution of the Level of Knowledge of Nursing students class wise on Mucormycosis. N=200

Sr. No.	Inadequate		Moderate		Adequate	
	f	%	f	%	f	%
a) First Year B.sc Nursing	24	12	12	6	8	4
b) Second Year B.sc Nursing	18	9	6	3	7	3.5
c) Third Year B.sc Nursing	28	14	8	4	12	6
d) Fourth Year B.sc Nursing	10	5	21	10.5	14	7
e) First Year M.sc Nursing	3	1.5	6	3	8	4
f) Second Year M.sc Nursing	1	0.5	9	4.5	5	2.5

Section 3.3 : Mean, SD, to Assess the Level of Knowledge of Nursing Students on Mucormycosis.

Table 3 : Mean, SD, to Assess the Level of Knowledge of Nursing Students on Mucormycosis.

N=200

Level of Knowledge	No of items	Max. Score	Mean	Mean %	SD
General Aspects	200	5	3.05	61	1.07
Causes And Risk Factor	200	5	3.28	65.6	1.12
Sign And Symptoms	200	6	2.98	49.6	1.32
Diagnosis and Management	200	4	2.73	68.25	1.03
Prevention	200	2	1.005	50.25	0.66
Complication	200	3	1.96	65.33	0.89
Overall	200	25	15.04	60.16	3.78

Section 3.4: Association Between Pre-Test Levels Of Knowledge With Demographic Variables.

Table 4: Association Between Pre-Test Levels Of Knowledge With Demographic Variables.

N=200

SOCIO DEMOGRAPHIC DATA	INADEQUATE		MODERATE		ADEQUATE		χ ² - value (df)	p-value
	f	%	f	%	f	%		
1. Age								
18 Year	12	6	4	2	1	0.5	16.25 (8)	0.0388 (S)
19 Year	16	8	15	7.5	3	1.5		
20 Year	12	6	18	9	6	3		
21 Year	13	6.5	29	14.5	3	1.5		
> 22 Year	20	10	37	18.5	11	5.5		
2. Year of study								
1st Year B.sc (N)	24	12	12	6	8	4	34.72 (10)	0.0001 (HS)
2 nd Year B.sc (N)	18	9	6	3	7	3.5		
3 rd Year B.sc (N)	28	14	8	4	12	6		
4 th Year B.sc (N)	10	5	21	10.5	14	7		
1 st Year M.sc (N)	3	1.5	6	3	8	4		
2 nd Year M.sc (N)	1	0.5	9	4.5	5	2.5		
3. Religion								
Hindu	71	35.5	91	45.5	20	10	8.2 (4)	0.08 (NS)
Christian	2	1	9	4.5	2	1		
Muslim	00	00	3	1.5	02	01		
4. Previously attended any training or CNE regarding Mucormycosis.								
Yes	31	15.5	31	15.5	6	3	3.89 (2)	0.142 (NS)
No	42	21	72	36	18	9		
5. Previous knowledge regarding Mucormycosis.								
Yes	31	15.5	31	15.5	6	3	3.89 (2)	0.142 (NS)
No	42	21	72	36	18	9		
6. Observed any patient of mucormycosis								
Yes	30	15	53	26.5	10	5	2.099 (2)	0.35 (NS)
No	43	21.5	50	25	14	7		

*-p<0.05 significant, **-p<0.001 & ***p<0.001 –highly significant

IV. Discussion

The present study discusses about the level of knowledge regarding mucormycosis among Nursing Students of Shri Vinoba Bhawe College of Nursing Silvassa. The study result shows that majority of students had 51 (25.50%) had inadequate knowledge, 125(62.5%) Nursing Students had moderate knowledge and 12(24%) Nursing Students had adequate knowledge on mucormycosis.

Among the 200 samples, majority of students 68 (34%) of them belongs to the age group of 22 years and above.44 (22%) of them were in the First Year B.sc Nursing, 31 (15.5%) samples were of the Second Year B.sc Nursing, 48 (24%) of them belongs to Third Year B.sc Nursing and 45 (22.5 %) of them belongs to the Fourth Year B.sc Nursing, 17 (8.5%) of them belongs to the First Year M.sc Nursing and 15(7.5%) of them belongs to the Second Year M.sc Nursing. Maximum students 182 (91%) were Hindu.132 (66%) had previously attended any training or CNE regarding mucormycosis and 68 (34%) did not previously attended any training or

CNE regarding mucormycosis. 132 (66%) had Previous knowledge regarding mucormycosis and 68 (34%) did not have Previous knowledge regarding mucormycosis. 93 (46.5%) had Observed any patient of mucormycosis and 107 (53.5%) did not Observe any patient of mucormycosis.

There was a significant association between the socio-demographic variables like (age $\chi^2 = 0.0338$, year of study $\chi^2 = 0.0001$) and knowledge at 0.05 level of significance whereas there was no significant association between the socio-demographic variables like (previously attended any training or CNE regarding Mucormycosis $\chi^2 = 0.142$, previous knowledge regarding mucormycosis $\chi^2 = 0.142$, observed any patient of mucormycosis $\chi^2 = 0.35$, religion $\chi^2 = 0.08$) and knowledge at 0.05 level of significance.

V. Conclusion

The study concluded that there was inadequate knowledge among nursing students on mucormycosis with reference to it seminar was held for the students and made them aware regarding the care of patients with mucormycosis. There must be awareness made to community as well to prevent the spread of it. Healthcare workers should also be cautious and carefully use of various medications to treat covid-19 to prevent the occurrence of mucormycosis as a post covid complication.

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