

# **An Experimental Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Mucormycosis among Nursing Students of Saaii College of Medical Science and Technology Kanpur, Uttar Pradesh**

**Namrata Gohil<sup>1</sup>, Niladrita Deb<sup>2</sup>**

<sup>1</sup>M.Sc.Nursing Student, Atal Bihari Vajpayee Medical University

<sup>2</sup>Associate Professor, Atal Bihari Vajpayee Medical University

## **BACKGROUND OF THE STUDY**

Fungi are a major part of the ecosystem. With over 50,000 fungal species identified in the world, they are integrated critically into the lifecycle from birth to death. Only about 0.1% (over 250 fungal species) is recognized as human pathogens. Their incidence and diversity has increased dramatically in recent year. Fungal sinusitis can be categorized into non-invasive and invasive groups. While non-invasive fungal sinusitis does not exhibit the penetration of mucosa by hyphae; but in invasive fungal sinusitis hyphae do invade the mucosa. Mucormycosis is manifested by a variety of different syndromes in humans, particularly in immune compromised patients and those with diabetes mellitus.

Mucormycosis, a rare, potentially deadly infection, is caused by the fungus of the order Mucorales. But when it does occur, it is well remembered 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. Progressing through the stages of rhino maxillary, rhino- orbital and rhino-orbit-cerebral Mucormycosis, it is rapidly fatal in 50 to 80%. It primarily affects immune compromised patients, more commonly diabetics but seldom infects a healthy host

During the second wave of covid in India there was a rapid rise in Mucormycosis cases in patients infected with covid. This rise was attributed to many factors which include steroid intake, diabetes mellitus, and oxygen therapy and ventilator/ICU management. There were many reports suggesting the role of industrial oxygen and even use of excessive zinc in etiology of mucor. Literature review regarding association of Invasive Fungal Rhino sinusitis with COVID-19 revealed only isolated case reports.

**KEYWORDS:** Level of Knowledge, Mucormycosis, Nursing Student, structured teaching programme.

## **NEED OF THE STUDY**

An upsurge of Mucormycosis is being reported throughout the world over the past two decades, however, the rise in developing countries including India has been phenomenal. Three consecutive case series on Mucormycosis have been reported from a single tertiary- care center in India: 129 cases over 10 years

(1990-1999), 178 cases during the subsequent 5 years (2000-2004) and then 75 cases in an 18 month period during 2006-2007.

The population-based prevalence of Mucormycosis is reported from a few countries. In San Francisco, California, a population-based surveillance study conducted during 1992 to 1993 documented the cumulative annual prevalence of Invasive fungal infections at 178.3 per million, with Mucormycosis at 1.73 cases per million.<sup>22</sup> An autopsy-based study from a tertiary care cancer center in the United States documented a rise in the incidence of Mucormycosis in hematological malignancy patients from 0.006 cases per 100 autopsies in 1989-1993 to 0.018 cases in 2004-2008.

On 24 May 2021, Medical professionals at Lucknow's King George Medical University informed that at least 7 such cases have been diagnosed at the centre over the past three months. Of these, 4 individuals are still receiving treatment in the ICU. While 2 patients aged 35 and 60 are diabetic, the other two aged 70 and 45, have taken steroids for a long time. The 42 year old deceased had complained of fever about 10 days back. He was admitted to Kanpur's Lala Lajpat Rai Hospital (Hallett Hospital). A resident of Bidhuna town in Auraiya, he succumbed to the infection on Monday morning. Uttar Pradesh recently declared black fungus a notifiable disease under the Epidemic Diseases Act.

Hence, as a researcher I felt the need to conduct a quasi-experimental study on nursing students of SAAII College of medical science and technology as B.Sc.Nursing students, as they are getting exposure in clinical area, and they should have adequate knowledge regarding the disease condition to provide good nursing care whenever they get exposure with Mucormycosis patients.

### **PROBLEM STATEMENT:**

“An experimental study to assess the effectiveness of structured teaching programme on knowledge regarding Mucormycosis among nursing students of SAAII College of Medical Science and Technology Kanpur, Uttar Pradesh.”

### **OBJECTIVE OF THE STUDY:**

The objectives of the study are to:-

- To assess the effectiveness of the planned structured teaching programme.
- To determine the association between pre-test levels of knowledge score regarding Mucormycosis with selected socio-demographic variables of Nursing Students.
- To determine the association between the pre and post-test level of knowledge on Mucormycosis among Nursing Students.

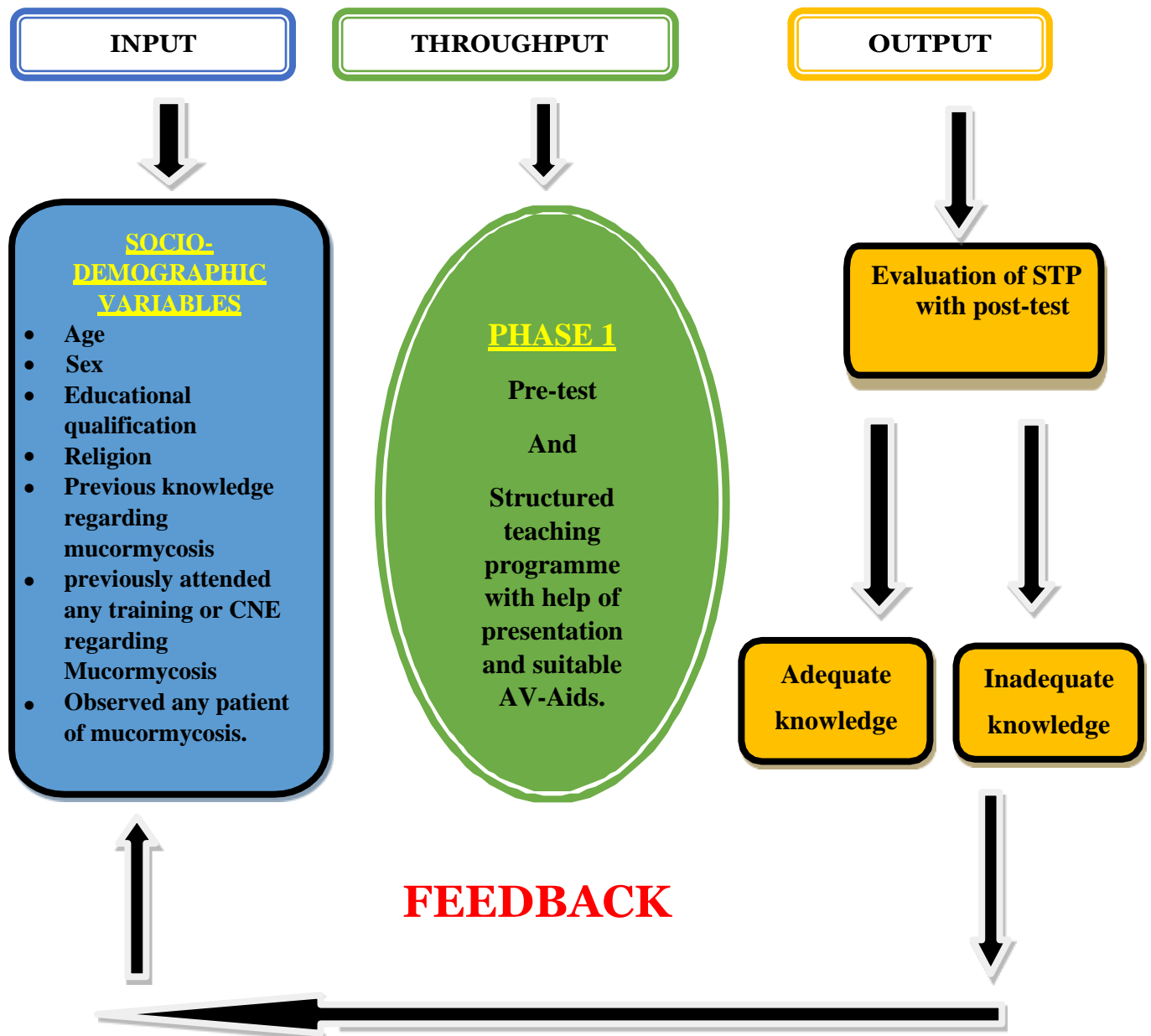
### **HYPOTHESIS**

H1: There will be significant association between pre-test level of knowledge score regarding Mucormycosis with selected socio-demographic variables Among Nursing Students at 0.05 level of significance.

H2: There will be significant association between knowledge scores and selected demographic variables such as religion, age, sex, educational qualification, previously attended any training or CNE regarding Mucormycosis, previous knowledge regarding Mucormycosis, Observed any patient of Mucormycosis with level of knowledge.

**CONCEPTUAL FRAMEWORK**

Conceptual framework refers to the interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance to a common theme. The overall objective of the framework is to make scientific findings meaningful and generalizable. Conceptual framework adopted in the present study was modified general system theory by Ludwing Von Bertalanffy (1968). The main study concepts of the theory are:



**FIGURE: 1.1: Conceptual framework of open system theory.- By Bertalanffy and J.W.K**

**AIM:** This study aims to assess the level of knowledge on Mucormycosis among nursing students at SAAII College of medical sciences and technology Kanpur.

**METHODOLOGY:** An Pre-experimental study was adopted to assess the level of knowledge on

Mucormycosis among nursing students using a non-probability consecutive sampling technique and one group pretest-post test design. The study included 60 B.Sc.Nursing students from selected nursing college, SAAII College of medical science and technology Kanpur; using structured teaching programme.

**RESULTS:** The analysis of study revealed that majority of the student were in age group >22 years. 60 B.Sc.Nursing students did not previously attended the CNE and had no knowledge on Mucormycosis, majority of students did not attended any patient of Mucormycosis.53(88.33%) had average knowledge, 7(11.77%) had good knowledge, 0% had excellent knowledge in pretest which increased to 50(83.33%)gained excellent knowledge score; 10(16.66%) had good knowledge score in post test after intervention. The mean percentage score of pre-test knowledge is 51.88% which is increased to79.57% after post-test. The SD of pre-test and post-test was 0.84 and 2.99 respectively. Difference in mean percentage was 27.69 which revealed that there was an increase in knowledge regarding among nursing students after administration structured teaching Programme on knowledge regarding Mucormycosis. There was association between age, year of study with levelof knowledge and no association between religion, age, sex, educational qualification, previously attended any training or CNE regarding Mucormycosis, previous knowledge regarding Mucormycosis, Observed any patient of Mucormycosis with level of knowledge.

Thus the stated research hypothesis there will be significant association between pre-test knowledge score Among nursing students regarding Mucormycosis and their selected demographic Variables at 0.05 level of significant is accepted.

**Analysis of pre-test and post-test knowledge score :**frequency and percentage wise distribution to assess the level of knowledgeregarding Mucormycosis patients among nursing students in SAAII College of medical sciences and technology, Kanpur.

LEVEL OF KNOWLEDGE	PRETEST		POSTTEST	
	f	%	f	%
Average	7	11.66%	0	0
Good	53	88.33%	10	16.66%
Excellent	0	0	50	83.33%
Total	60	100%	57	100%

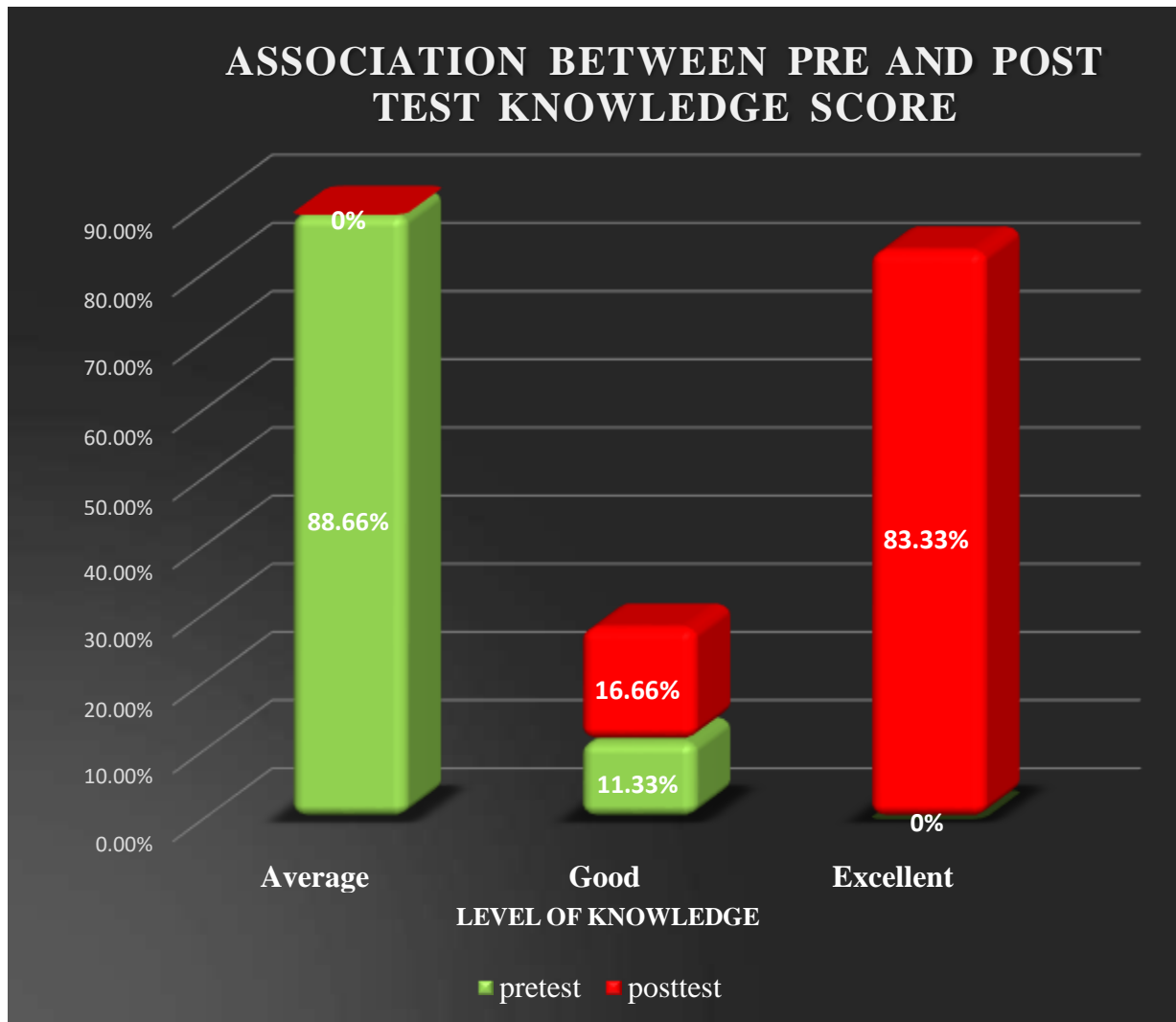


Fig:1 Percentage wise distributions to assess the level of knowledge regarding Mucormycosis patients among nursing students.

The above table and figure Depicts that in re-test, the maximum number 50 (88.33%) of B.Sc.nursing students had average knowledge, only 7 (11.33%) students have good knowledge and no one have excellent knowledge regarding mucormycosis. Where as in post-test the majority 50(83.33%)of undergraduate nursing students had aexcellent knowledge and only 10(16.66%) have good knowledge and no one had average knowledge regarding Mucormycosis after structured teaching programme.

**CONCLUSION:** From the study it was concluded that the most majority of samples improved knowledge regarding Mucormycosis after structured teaching programme.The pre-test statistics of the study revealed that there was average knowledge about Mucormycosis among B.Sc.Nursing students, which indicated the need for structured teaching programme which increased the knowledgeregarding Mucormycosis , which is justified with increase in knowledge score in post-test.

**NURSING IMPLICATION:**

The finding of the study has implications for nursing practice, nursing education, nursing administration and nursing research.

**NURSING PRACTICE:**

Nursing practice is an ongoing process of assistance which aims the all-around development of mankind. The main focus of nursing practice is to reduce morbidity and mortality rate and improve quality of life.

- Effective management of patients with Mucormycosis Improve the knowledge of primary caregivers regarding Mucormycosis.
- Since the nurses are one of the largest healthcare providers and health promotion is one of the major roles that nurses have to play, they can teach others regarding Mucormycosis.
- Generate good attitude among nurses regarding patients with Mucormycosis.
- The informational booklet can be useful to improve the knowledge regarding Mucormycosis.

**NURSING EDUCATION:**

Nursing education helps the nurse to develop competence in theoretical as well as practical level.

- Education plays a vital role in the modification of behavior and practice among the nurse as well as student nurses. Having knowledge about Mucormycosis can lead to effective management of the patients with Mucormycosis.
- In service education can be planned for nurses to improve the knowledge Regarding Mucormycosis.
- Nursing education is a main foundation through which nurses are prepared for practice in various settings.
- A nurse educator can educate patients as well as family members of the patients regarding Mucormycosis.

**NURSING ADMINISTRATION:**

Nursing administration is service sector to control the management operation along with arrangement of service polices in order to plan the organization.

- Nursing administrator take initiatives for continuous education programme. Moreover, administration can evaluate the merits and demerits of an education programme.
- A nurse administrator can conduct workshops and in-service education
- Regarding Mucormycosis which will update the knowledge and improve the Attitude level of nursing staff.
- A nurse administrator can encourage student nurses to involve in research Activities to improve the knowledge and attitude regarding Mucormycosis.
- A nurse administrator can encourage students as well the staff to take part in awareness programme on Mucormycosis.
- A nurse administrator can encourage nurses to provide specialized care to the patients with Mucormycosis.
- A nurse administrator can encourage nurses to provide health education to the patients and family members of the patients with Mucormycosis.

- A nurse administrator can promote education programme on Mucormycosis.
- A nurse administrator can encourage student nurses to provide health education on Mucormycosis to senior citizens and their family members of the senior citizens.

### **NURSING RESEARCH:**

Nursing research is a systematic investigation and study of materials, sources etc. in order to establish facts and reach conclusion . A researcher can bring innovative approaches and modern theories in the field of research.

- The study can be effectively utilized by emerging researchers for their reference purpose.
- The research can be published in the nursing journals and magazines.
- The research findings can be utilized in the practice field for supporting the evidence-based nursing.
- The research can be done in different areas of the country as there are increasing rate of Mucormycosis in India.

### **RECOMMENDATION:**

Based on the findings of the study, following recommendations have beenmade:

- A similar study can be replicated on a large sample to generalize the findings.
- A similar study can be replicated for long time duration which will give better result.
- A similar study can be replicated for A similar study can be replicated for various groups of samples and literature.
- To introduce innovated and specialized services in outpatient and in-patient departments.

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