African Journal of Biological Sciences

Journal homepage: http://www.afjbs.com

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"Effectiveness of planned teaching on knowledge regarding fungal infection among Hostelite students from selected junior colleges of Sangli-Miraj-Kupwad corporation area"

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Abstract: Fungal infections are responsible for >1.5 million deaths globally per year, primarily in those with compromised immune function. The prevalence of quacks with little awareness of fungal infections is another cause for the higher incidence of cases. The objectives stated as 1. to assess the existing level of knowledge regarding fungal infection among male students of junior college. 2. To assess the post-test knowledge scores regarding fungal infection among male students of junior college. 3. To compare the pre-test knowledge score with the post-test knowledge score. *Material and methods-* a quantitative research approach and a Quasi-Experimental-one-group pre-test-post-test design was used. samples were the selected Hostelite male students of Sangli-Miraj-Kupwad Corporation selected through sampling selection criteria. *Results and findings-*The data collected from the 264 participants the majority of the participants comprised in the age group of 16 years, and residing in urban areas. The calculated paired t -t-value was 35.86172, and the p-value was <.00001. The result is highly significant at <0.05. Hence H_1 is accepted and H_0 is rejected. This suggests that there is a statistical increase in post-test knowledge score so, planned teaching regarding fungal infection among hostelite students was proved to be effective.

Key Terms- Effectiveness, planned teaching, knowledge, fungal infection, Hostelite students.

Introduction-

Fungal diseases are life-threatening and are responsible for a largely silent epidemic, often hidden killers causing substantial morbidity and mortality in susceptible individuals. Patients with fungal infections occur across a huge spectrum of medical conditions often as co-infections or opportunistic infections and are thus treated as separate entities, hindering progress in diagnosis and 6 management of these patients. Only skin, hair, nails and mucosal infections can be clinically diagnosed (with much imprecision) without specific laboratory testing or medical assessment (radiology, mycology, histopathology) with expensive technologies requiring trained personnel. On the other hand, most life-threatening infections require the referred methods to be diagnosed, which is often out of the reach of patients in poor resource settings.[1]

In immunocompromised paediatric patient populations, such as preterm neonates, children and adolescents with hematologic malignancies, and those undergoing hematopoietic stem cell transplantation (HSCT), invasive fungal infections (IFIs) are becoming more common and are a major cause of morbidity and mortality. Although both adults and children are equally susceptible to IFIs, there are some significant distinctions between these two patient groups that must be taken into account. These include pharmacokinetics (PK), diagnostic methods, side effects of antifungal drugs, and epidemiology, all of which have an effect on antifungal management options. All experts participating in the care of pediatric patients must be aware of these particulars of pediatric care in order to optimize the prevention and treatment of IFIs in children.[2]

The above reviews and a result show that it is life-threatening to address this health care issue with a mindset of increasing knowledge among male junior college students

Problem Statement-

A study to assess the effectiveness of planned teaching on knowledge regarding fungal infection among Hostelite students from selected junior colleges of the Sangli-Miraj-Kupwad corporation area.

The objectives of the study-

1. To assess the existing level of knowledge regarding fungal infection among male students of junior college.

2. To assess the post-test knowledge scores regarding fungal infection among male students of junior college.

3. To compare the pre-test knowledge score with the post-test knowledge score

Hypothesis:

H_0: There is no significant difference between pre-test and post-test knowledge scores after implementation of planned teaching regarding fungal infection

H_1: There is a significant difference between pre-test and post-test knowledge scores after implementation of planned teaching regarding fungal infection

Materials and methods-

Research Approach and Design-Quantitative research approach with A Quasi-Experimental-one-group pre-test-post-test design was used

Variables:

• Independent Variable: planned teaching on fungal infection.

• Dependent Variable: knowledge

Research Setting- male student hostelite of the Sangli-Miraj-Kupwad Corporation area.

Population-Hostelite male students of the Sangli-Miraj-Kupwad Corporation area.

Sample Selection Criteria-

Inclusion Criteria- Hostelite students

1. Hostelite male students from junior colleges.

2. Student from Age group of 15 years – 18 Years.

• Exclusion Criteria

1. Those who are not willing to participate in the study

Sampling Method: Non-Probability- Purposive Sampling Technique was used.

Sample Size-Sample size was calculated by using power analysis and final sample size was 264.

The tool and the content of the planned teaching was validity by 30 experts from various fields dermatologist, professor & statistics. Associated professor department of Medical Surgical Nursing. The split-half method was used. Reliability coefficient is $r = 0.7318$ and spearman Brown correction is 0.8451 both are more than 0.70 which shows the tool is reliable internally consistent and acceptable. Pilot study was conducted to check the feasibility of the study on 27 samples were chosen for the pilot study. Pre-test followed by planned teaching, after seventh day post-test was conducted. The mean of pre-test score is 10.29 and the mean of post-test score is 17 which shows that planned teaching on knowledge regarding fungal infection is effective.

Results and Findings-

Organizations of the findings:

Analysis and explanation of study results under the following heading were arranged:

Section 1- Frequency and percentage distribution of demographic variables.

Section 2- Analysis of pre-test and post-test knowledge scores regarding fungal infection among Hostelite students.

Section 3 - Compare the Pre-test and post-test scores regarding fungal infection among Hostelite students.

Section 4- Association between pre-test knowledge score with demographic variables.

TABLE NO.1: Frequency and percentage distribution of demographic variables of Hostelite students (n=264)

	Characteristics	**Frequency**	**Percentage**
		f	*%*
1	Age in years----		
1.1	**16**	**116**	**43.94**
1.2	17	105	39.77
1.3	18	43	16.28
2	Gender-		
2.1	Male	**264**	**100**
3	Residential area		

3.1	Urban	**157**	**59.46**
3.2	Rural	107	40.53
4	Stream		
4.1	Arts	**88**	**33.33**
4.2	Commerce	**88**	**33.33**
4.3	Science	**88**	**33.34**

- According to the findings in **Table no.1** shows that the majority of the participants 116(43.94%) were aged 16 years, some of the participants 105(39.77%) were comprised in age 17 years and the remaining 43(16.28%) of the participants were comprised from age of 18 years.
- Considering the gender, the investigator selected 264 (100%) males only.
- According to the residential area of the participants the majority 157 (59.46%) of the participants were from the urban area of Sangli- Miraj and Kupwad corporation area which was confirmed with their college ID address and 107(40.53%) of the participants were from the rural area.
- Researcher selected an equal number of participants 88(33.33%), from each stream that is arts, commerce, and science respectively.

Table No.2 : Analysis of the level of knowledge before and after the administration of planned teaching among hostelite students   (n=264)

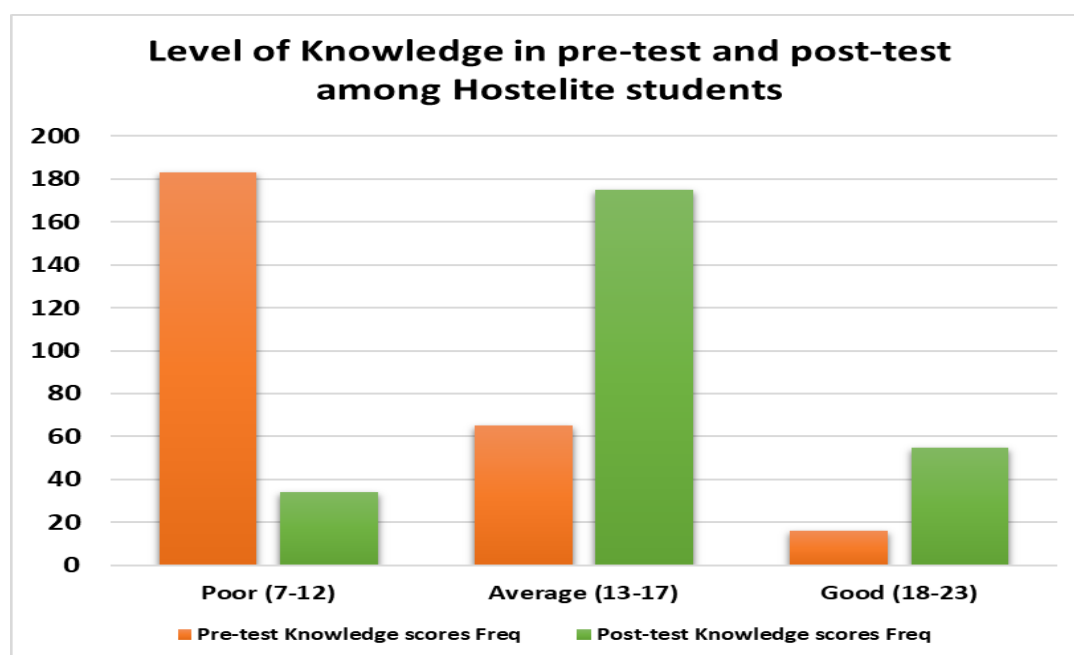| Level of K. scores	Pre-test		Post-test	
	Freq	**%**	**Freq**	**%**
Poor (7-12)	**183**	**69.31**	34	12.87
Average (13-17)	65	24.63	**175**	**66.29**
Good (18-23)	16	6.06	55	20.84

FIGURE NO-2

According to the study result findings in **Table 2 and figure no.2,** shows that in the pre-test the majority of hostelite students 183(69.31%) had poor knowledge (Score 07-12), 65(24.63%) had average knowledge (Score 13-17), and 16(6.06%) had good knowledge (Score 18-23) regarding fungal infection; whereas after the administration of planned teaching in the post-test the majority of hostelite students 175(66.29%) had average knowledge (Score 13-17), 34(12.78%) had poor knowledge (Score 07-12), and 55(20.84%) had good knowledge (Score 18-23) regarding fungal infection. Hence, it shows that the administration of planned teaching help in increasing the knowledge score in the post-test than in the pre-test.

TABLE NO-3: **Analysis of Comparisons of Mean, SD, and df. of the PRETEST and POSTTEST knowledge scores of hostelite students regarding fungal infection**

n-264

Knowledge	Mean	SD	df	Calculated t- value	p -Value
Pre-test	10.28	3.69	263	35.86172	< .00001
Post-test	16.97	5.48	263		

The maximum score in the structured knowledge-based questionnaire was 23 regarding fungal infection. The data represented **in table no.3** represent the mean scores of post-test knowledge of the participants was (16.97 ± 5.48(SD)) with a range of (13-17) than the mean of pre-test knowledge scores (10.28 ± 3.69) with the range of (7-12). The calculated paired t -value is 35.86172, and the p-value is <.00001. The result is highly significant at <0.05. Hence hypothesis H_1 is accepted and H_0 is rejected. This suggests that there is a statistically significant increase in post-test knowledge scores so, planned teaching regarding fungal infection among hostelite students was proved to be effective.

TABLE NO. 4- **The association of the findings with demographic variables was assessed using Chi-square(χ^2). The summary of Chi-Square results is tabulated below- n=264**

VARIABLES	POOR	AVERAGE	GOOD	*F*	CHI-SQUARE	P VALUES	SIGNIFICANCE AT (P<0.05)
AGE IN YEARS					0.3147	0.7025	Not significant
15-16	85	25	6	116			
17-18	99	39	10	148			
RESIDENTIAL AREA					0.598	0.652	Not Significant
Urban	115	33	9	157			
Rural	75	25	7	107			
STREAM					0.0432	2.139	Significant
Science	58	22	8	88			
Commerce	69	12	7	88			
Arts	71	9	8	88			

The findings in **Table no. 4** show that there is a significant association between the demographic variables stream with pre-test knowledge score but there was no significant association between the age in years and residential area with pre-test knowledge score. From the above findings, it can be concluded that the p-value for variables, age and residential is not less than 0.05 hence there is no association between age, residential area, and knowledge score levels. However, the p-value is less than for the variable in the stream which shows that there is a significant association between stream and knowledge score levels.

Discussion-

Similar study findings contradicting the findings Ting Wei Tiong, Siew Siang Chua (2020) concluded that the characteristics of respondents more female than male students participated in the study (63.2% versus 36.8%). The mean (standard deviation, SD) age of the respondents was 20.6 (1.5) years and ranged from 18 to 30. A majority of the respondents were Chinese (71.7%). According to the study result findings in the pre-test shows that the majority of hostelite students 183(69.31%) had poor knowledge (Score 07-12), 65(24.63%) had average knowledge (Score 13-17), and 16(6.06%) had good knowledge (Score 18-23) regarding fungal infection; whereas after the administration of planned teaching in the post-test the majority of hostelite students 175(66.29%) had average knowledge (Score 13-17), 34(12.78%) had poor knowledge (Score 07- 12), and 55(20.84%) had good knowledge (Score 18-23) regarding fungal infection. Hence, it shows that the administration of planned teaching helps in increasing the knowledge score in the post-test than in the pre-test.

General Assessment of Knowledge-

The study was supported by the findings from the study conducted by Rita Oladele et al. (2020) in relation to knowledge of IFIs; 834(79.7%) of the respondents had some knowledge of IFIs. The commonest source of knowledge about IFIs was from undergraduate training in medical school 338 (32.3%) followed by 303(29.0%) from personal reading while others 191(18.3%) learned about IFIs during the course of their post-graduate residency training. The ability to identify common IFIs appeared to be high as 813(77.7%) and 820(78.4%) were able to correctly identify invasive aspergillosis and invasive candidiasis as IFIs respectively. The level of non-response to these two questions was similar (18.4% and 18.1%). When asked to identify organisms that cause IFIs; Fusarium spp, Candida spp, Aspergillosis spp, Mucor spp and Cryptococcus spp were correctly identified by 52.4%, 69.7%, 67.9%, 20.6%, and 62.3% respectively.

Comparison of Pretest & Post Test Knowledge- Analysis of Comparisons of Mean, SD, and df. of the pretest and posttest knowledge scores of hostelite students regarding fungal infection shows that the maximum score in the structured knowledge-based questionnaire was 23 regarding fungal infection. The data represented in Table no.3 shows the mean scores of post-test knowledge of the participants was (16.97 ± 5.48(SD)) with a range of (13-17) than the mean of pre-test knowledge scores (10.28 ± 3.69) with a range of (7-12). The calculated paired-t-value is 35.86172, and the p-value is $<.00001$. The result is highly significant at <0.05. Hence hypothesis H_1 is accepted and H_0 is rejected. This suggests that there is a statistically significant increase in post-test knowledge scores so, planned teaching regarding fungal infection among hostelite students was proved to be effective.

Association between knowledge with selected demographical variables-

The association of the findings with demographic variables was assessed using Chi-square(χ^2). The summary of Chi-Square results shows that there is a significant association between the demographic variables stream with pre-test knowledge score but there was no significant association between the age in years and residential area with pre-test knowledge score. From the above findings, it can be concluded that the p-value for variables, age and residential is not less than 0.05 hence there is no association between age, residential area, and knowledge score levels. However the p-value is less than for the variable in the stream which shows that there is a significant association between stream and knowledge score levels.

Conclusion: -The study emphasizes the importance of identifying the most effective teaching plan among the students in improving the knowledge regarding fungal infection. The impact of the best quality teaching intervention, which appears to be quite basic, goes a long way in preventing fungal infection, and complications. So, continuing education through planned teaching regarding fungal infection among hostelite students proved to be effective.

Implication: -

Nursing Education:

- The findings of this study suggest that this structured teaching can be utilized by the nursing teachers to teach the students during their classes.
- Students can impart the education to the community people during their posting to urban and rural setting.
- Teachers can assess their hostel students for fungal infection.

Nursing Administration:

- Nurse administers can make Policies, protocols, and procedures & SOPS on prevention of fungal infection
- Inservice education can be planned on the fungal infections for staff nurses, Class 4
- workers, paramedical staff.
- camps can be arranged in schools by the nursing department.

Nursing Research:

- Nursing research is an important component of nursing education because it elevates the profession, produces new nursing standards, and expands the corpus of nursing knowledge.
- The recommendations of the study can be used for the further research.

Recommendations:

- Comparative studies can be done for male and female students also to identify their knowledge and practices also regarding fungal infection.
- More research could be done on a larger sample size and on different population.
- A study can be conducted on assessing the attitude and practices among rural population related to prevention of fungal infection.
- A study can be done on a student who practices the prevention of fungal infection.
- A comparative study can be done on prevalence rural & urban population on attitude and practices related to fungal infection.

- A comparative study can be done on prevalence rural & urban population on attitude and practices related to fungal infection.

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