

Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Methods of TB Drug Administration Among Nursing Students in Selected Nursing College, Bangalore

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ABSTRACT:

BACKGROUND: Tuberculosis is a bacterial infection that primarily affects the lungs. The discovery of streptomycin (1943), para-aminosalicylic acid (PAS), and isoniazid revolutionised TB treatment 1960s–1970s: Poor adherence to TB medication was the biggest barrier to successful treatment. 1980s: Birth of the DOT Strategy, Dr Karel Styblo became a landmark in treating TB patients.

AIM: The aim of the study was to assess the effectiveness of structured teaching programme on knowledge regarding different methods of administration of tuberculosis drugs among nursing students.

METHOD: The research design adopted for the study was quasi-experimental, i.e., one-group pre-test-post-test. A quasi-experimental design with an evaluative approach by taking 60 samples through the probability sampling technique in selected from nursing students.

RESULTS: Pre-test shows, knowledge among the sample of 50 were 18% had inadequate, 80% had a moderate level, and 2% had an adequate level of knowledge whereas in post-test, 2% had inadequate knowledge, 54% had moderate knowledge, and 44% had adequate knowledge. This shows Structured Teaching Programme was effective. Based on the chi-square analysis, the pre-test knowledge regarding different methods of administration of tuberculosis drugs was significant with age, gender and type of family at 5% levels of significance.

CONCLUSION: Based on the findings the researcher concluded that after structured teaching program nursing students has 54% had moderate knowledge, and 44% had adequate knowledge.

INTRODUCTION

Tuberculosis is an infectious disease known to have existed from ancient times. According to the World Health Organisation (WHO), India accounts for nearly one-fourth of the global TB burden. Around 10.6 million people developed TB worldwide in recent years. India has the highest TB burden in the world. In 2024, an estimated 27 lakh cases emerged, with over 26 lakhs diagnosed, though India still accounts for about a quarter of the world's TB cases. Early detection and adequate treatment are critical measures for disease control. The World Health Organisation (WHO) has published guidelines for tuberculosis control in low-income countries. However, inadequate case detection and poor treatment continue to be major factors increasing the global burden of tuberculosis. Since the inception of Directly Observed Treatment Short Course (DOTS), awareness, diagnosis, and treatment of tuberculosis have improved considerably.

Community-Based DOTS (Directly Observed Treatment, Short course) is a key strategy for effective tuberculosis (TB) control. Instead of relying only on hospitals or health centres, this approach delivers treatment within the patient's own community, supervised by trained health workers, volunteers, or local organisations. Workplace-based Directly Observed Treatment Short Course (DOTS) refers to a structured approach for managing tuberculosis (TB) treatment in workplaces for employees. This method focuses on real-time monitoring and support for patients, enhancing adherence to treatment protocols. Family-based Directly Observed Treatment Short-course (DOTS) is a structured approach to managing tuberculosis (TB) that involves family members in the treatment process. This method aims to enhance treatment adherence and improve outcomes by leveraging familial support, which is crucial given the lengthy nature of TB therapy. Electronic Directly Observed Therapy (eDOT) is a method of remotely monitoring patients taking medication, specifically for tuberculosis (TB), using video technology. It involves a healthcare worker observing the patient take their medication through a live or recorded video feed, typically on a smartphone, tablet, or computer. Self-administered tuberculosis treatment is feasible for patients living in areas with limited or no access to health services. The relatively low number of patients with adverse outcomes suggests that self-administration therapy models are safe. Other advantages include the need for fewer resources and less frequent movement by patients.

OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding methods of TB drug administration among nursing students.
2. To assess the effectiveness of structured teaching programme regarding methods of TB drugs administration among nursing students.
3. To find out the association between knowledge of methods of TB drugs administration and Selected Demographic Variables.

MATERIALS AND METHOD

Quasi-experimental, i.e., one-group pre-test-post-test design was adopted for the study. The study was conducted at T John College of nursing, Bengaluru among 50 nursing students. The Ethical clearance was obtained from the Ethical committee college of nursing, Bengaluru. Probability sampling technique was used for selecting nursing students. The tool used for data collection was Demographic proforma and Questionnaire to assess the effectiveness of Structured teaching programme on methods of TB drug administration. The investigator obtained consent from the subject. The investigators took an average time of 30 minutes. At the end of the pre-test session, the structured teaching practices were administered to the selected subjects. After seven days of administering structured teaching practice, a post-test was done by using the same tool on the same subjects. The data obtained was analyzed using Descriptive and Inferential Statistics.

RESULT AND DISCUSSION

Section 1: Description of baseline variables for nursing students.

TABLE-1 Frequency and percentage distribution of nursing students according to their personal characteristics. (n=50)

Characteristics	Category	Frequency	Percentage
Age (in year)	18-19	2	4
	20-21	31	62
	22-23	17	34
	<23	0	0
Gender	Male	8	16
	Female	42	84
Year of Study	4th Sem B.Sc.	50	100
	2nd year GNM	0	0
Type of Family	Nuclear	47	94
	Joint Family	2	4
	Extended family	0	0
	Single parent Family	1	2
Religion	Hindu	17	34
	Muslim	7	14
	Christian	26	52
	Others	0	0
Heard Of TB	Yes	39	78
	No	11	22
Source of Information	Academic	36	72
	Internet	5	10
	Peer	5	10
	Others	4	8

Table .1 depicts that among the 50 study subjects, 4% belongs to the age group of 18-19 years, 62% were of the age group of 19-20 years, and 34% were of the age group of 20-21 years. Among them, 84% them were females and 16% of them were males. 100% of the subjects were from the 4th semester BSc nursing. 94% of the study samples were from the nuclear family. 52% of them were Christian, and 34% belongs to the Hindu religion.

Graphical Representation of Baseline Variables

Figure 1: Percentage distribution of the sample according to their age groups

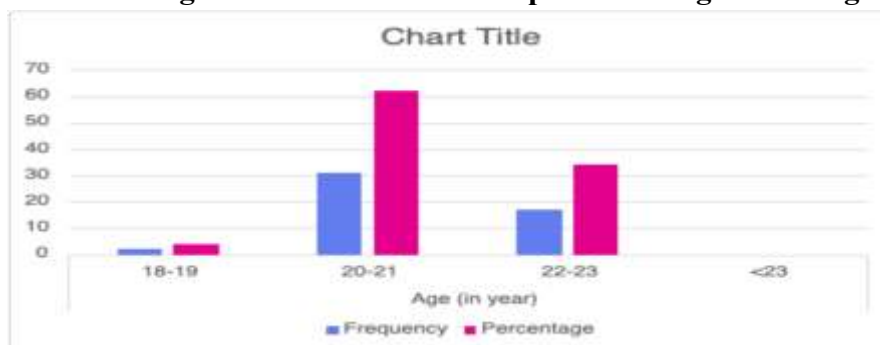


Figure 2: Percentage distribution of the sample according to their gender.

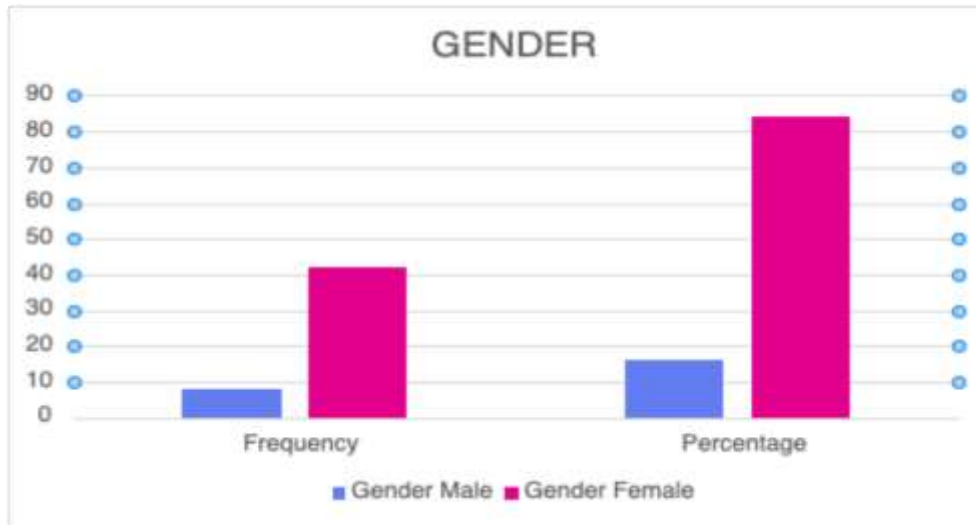


Figure 3: Percentage distribution of the sample according to year of study.

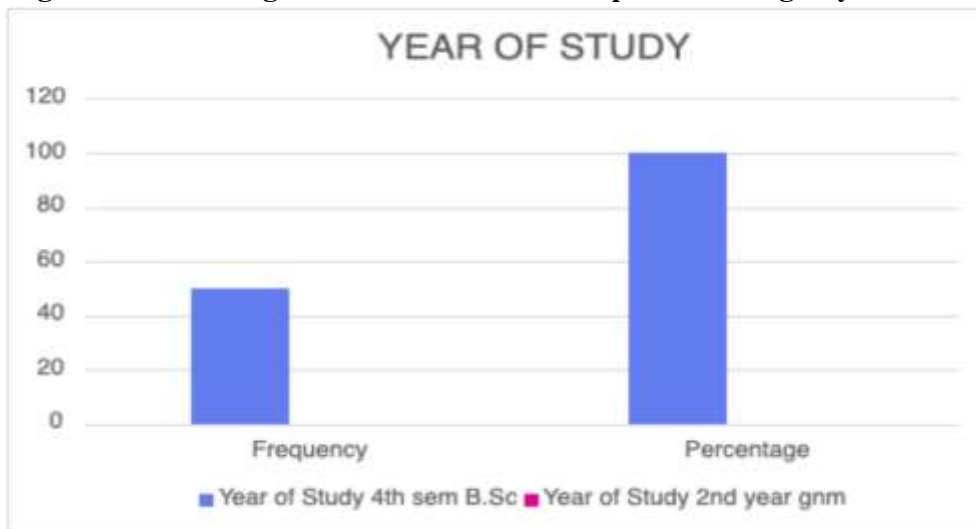


Figure 4: Percentage distribution of the sample according to type of the family.

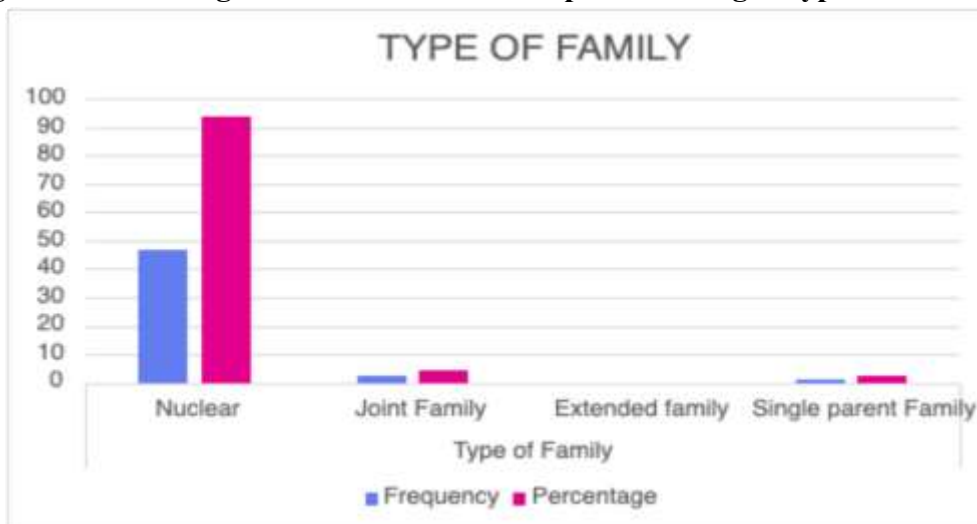


Figure 5: Percentage distribution of the sample according to religion.

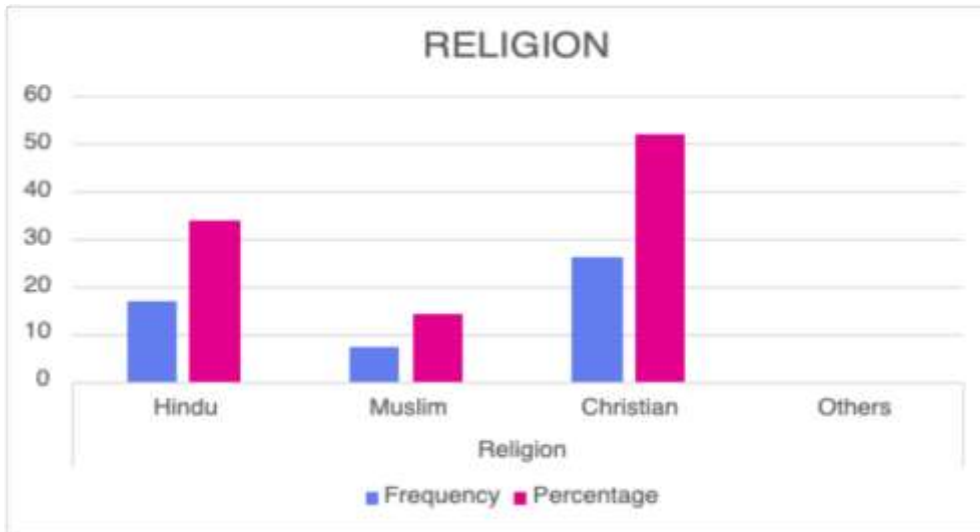


Figure 6: percentage distribution of the sample according to heard of TB.

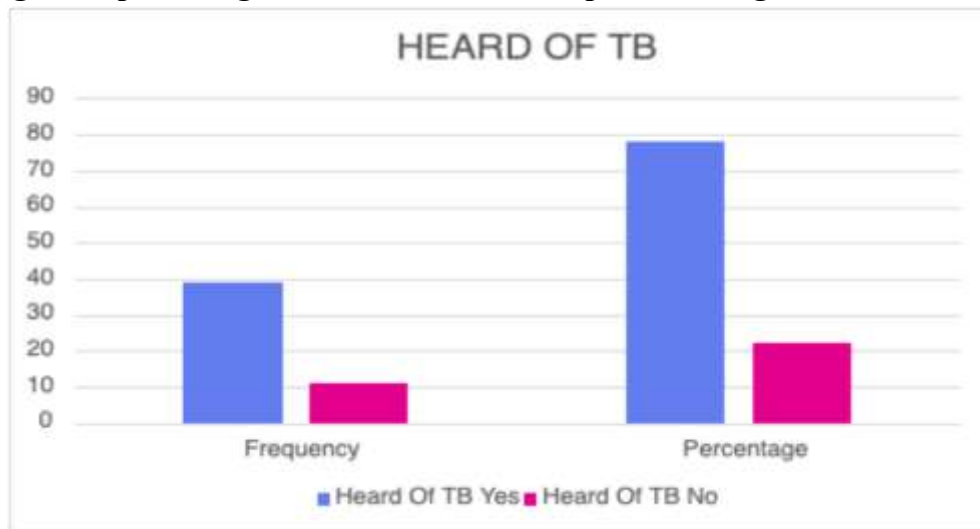
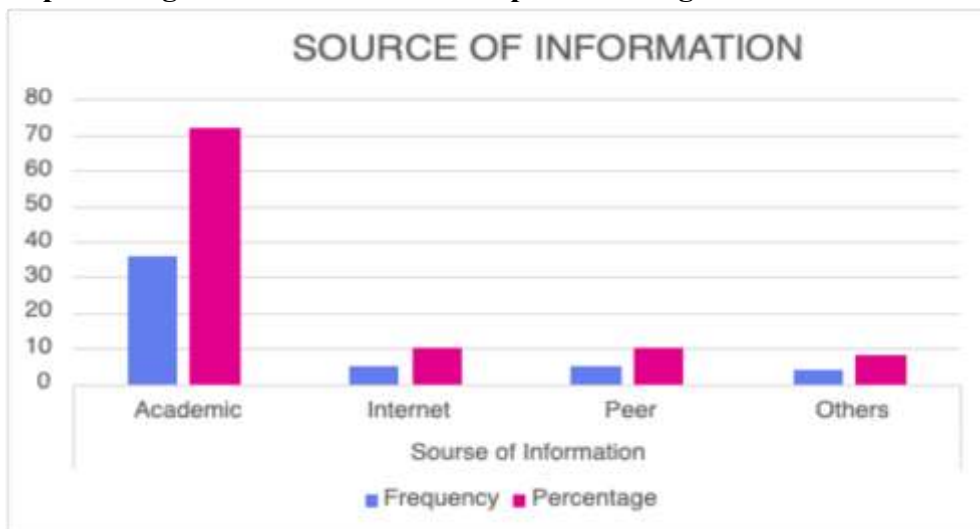


Figure 7: percentage distribution of the sample according to the source of information.



Section 2: Description of knowledge score before and after STP.

TABLE-2 Frequency and distribution of respondents on pre- and post-test knowledge level on methods of TB drug administration.

Knowledge Level	Category	Pre-Test		Post-Test	
		Frequency	Percent	Frequency	Percent
Inadequate	<10 mark	9	18	1	2
Moderate	11-20 marks	40	80	27	54
Adequate	>20 marks	1	2	22	44
Total		50	100	50	100

Table 2 and Fig.8 show that the pre-test knowledge among sample: 9 (18%) had inadequate, 40 (80%) had a moderate, and 1 (2%) had adequate level of knowledge regarding methods of TB drug administration.

Figure.8: Pre-test knowledge level on methods of TB drug administration among nursing students.

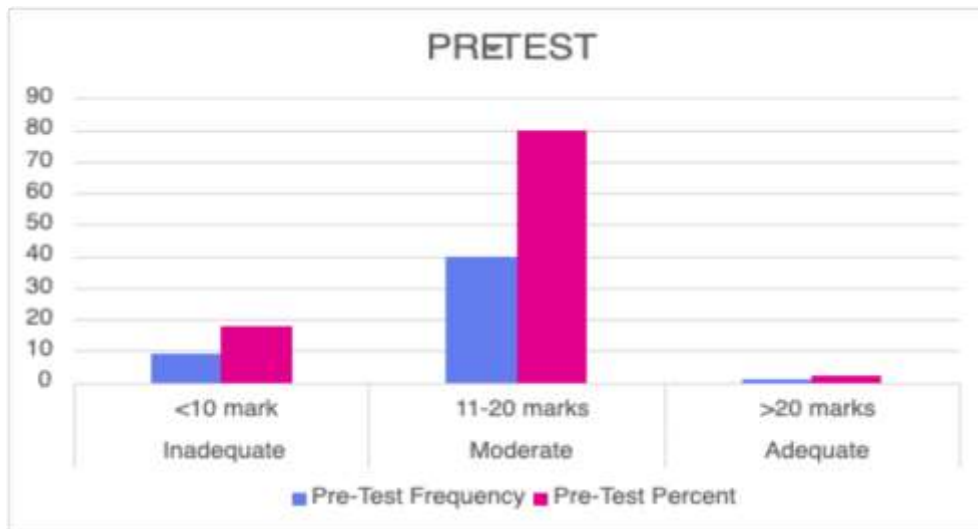
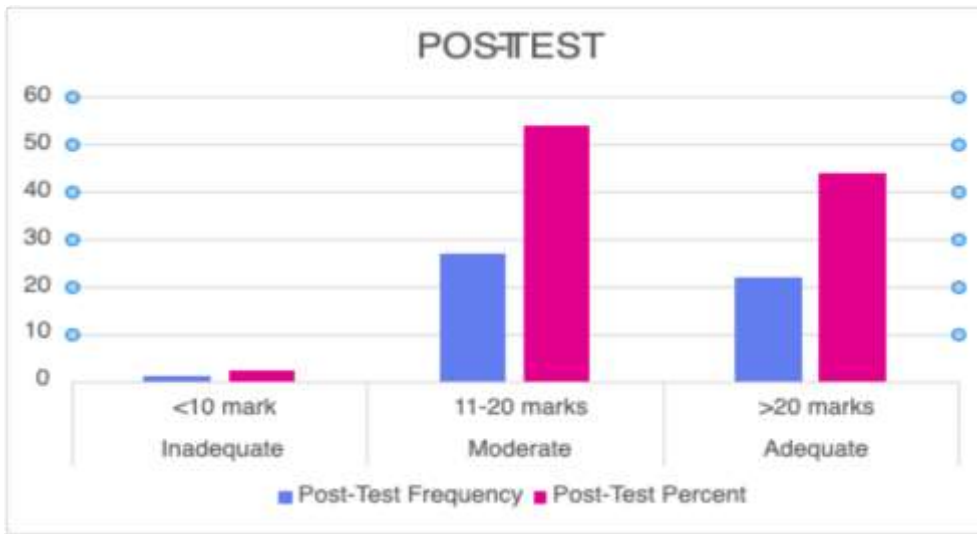


Table 2 and Fig.9 show that the post-test knowledge among sample: 1 (2%) had inadequate, 27 (54%) had a moderate, and 22 (44%) had adequate level of knowledge regarding methods of TB drug administration.

Figure.9: Post-test knowledge level on methods of TB drug administration among nursing students.



Section 3: Determine the effectiveness of structured teaching programme regarding methods of TB drug administration to nursing students on knowledge level.

Table – 3 Classification of respondents on pre-test and post-test knowledge level on methods of TB drug administration.

Knowledge Level	Category	Classification Of Respondents				Value
		Pre-Test		Post-Test		
		N	%	N	%	
Inadequate	<10 marks	9	18	1	2	28.10*
Moderate	11-20 marks	40	80	27	54	
Adequate	>20marks	1	2	22	44	
Total		50	100	50	100	

*Significant at 5% level,

Figure.10: Pre-test and Post-test knowledge level on methods of TB drug administration among nursing students.

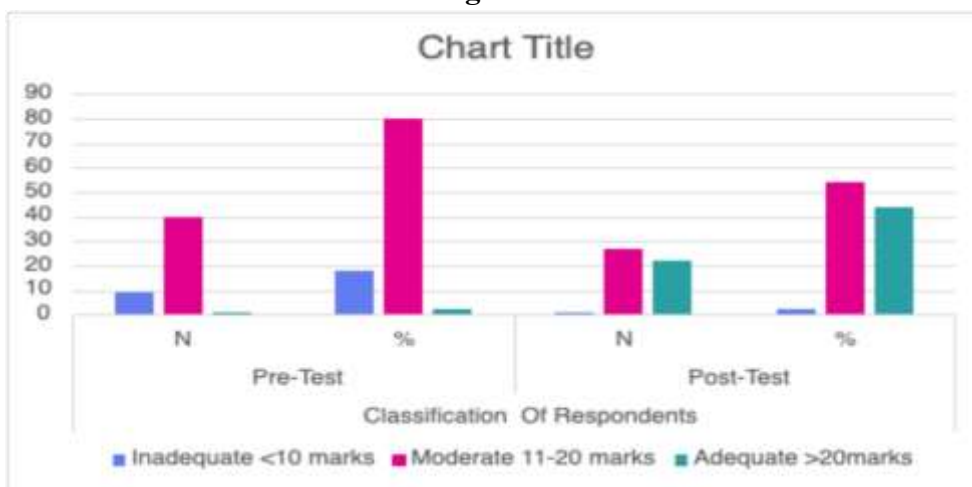
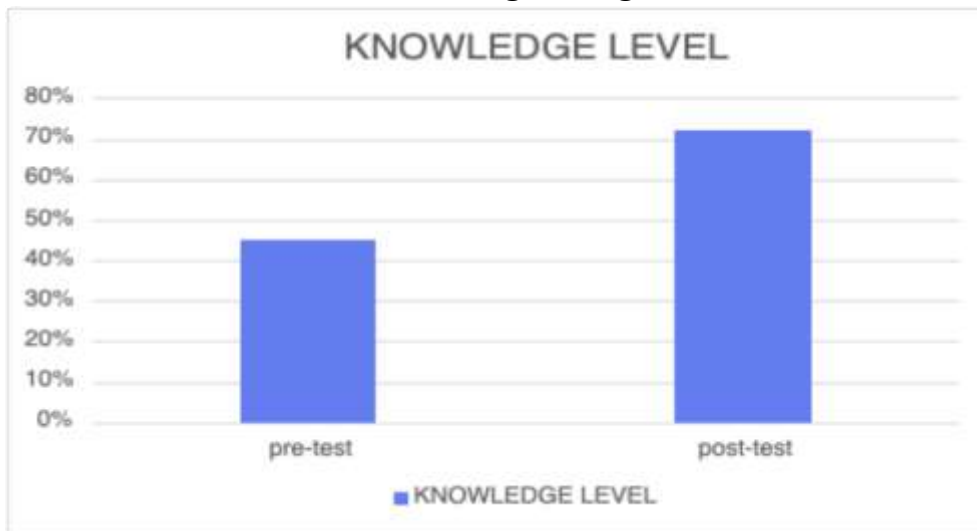


Table-4 Overall pre-test mean knowledge on methods of TB drug administration.

Aspects	Max. Score	Knowledge scores				Paired 't' Test
		Mean	SD	Mean (%)	SD (%)	
Pre-Test	30	13.50	3.70	45	12.33	8.92*
Post-Test	30	21.60	4.55	72	15.17	

*Significant at 5%

Figure-11: Overall Pre-test and Post-test mean knowledge score on methods of TB drug administration among nursing students.



SECTION 4- Association of pre-test knowledge with the selected sociodemographic variables.

TABLE-5 Association between demographics variables and Pre-test knowledge level of respondents on methods of TB drug administration among nursing students.

Demographic variables	Category	Sample	Knowledge Level						χ^2 Value	P Value
			Inadequate		Moderate		Adequate			
			N	%	N	%	N	%		
Age group(years)	18-19	2	1	50	1	50	0	0	4.51 NS	P<0.05 (9.488)
	20-21	31	2	6.45	28	90.3	1	3.22		
	21-22	17	6	35.29	11	64.7	0	0		
Gender	Male	8	3	37.5	5	62.5	0	0	3.97 NS	P<0.05 (5.991)
	Female	42	6	14.28	35	83.3	1	2.38		
Type of Family	Nuclear	47	8	17.02	38	80.8	1	2.12	4.28 NS	P<0.05 (9.488)
	Joint	2	1	50	1	50	0	0		
	Single parent	1	0	0	1	100	0	0		

Religion	Hindu	17	4	23.52	13	76.4	0	0	1.13 NS	P<0.05 (9.488)
	Muslim	7	2	28.57	5	71.4	0	0		
	Christian	26	3	11.53	22	84.6	1	3.84		
Heard of TB	Yes	39	8	20.51	30	76.9	1	2.56	3.12	P<0.05
	No	11	1	9.09	10	90.9	0	0	NS	(5.991)
Source of Information	Academic	36	4	11.11	31	86.1	1	2.77	7.33 NS	P<0.05 (12.592)
	Internet	5	1	20	4	80	0	0		
	Peer	5	3	60	2	40	0	0		
	Others	4	1	25	3	75	0	0		
Combined		50	9	18	40	80	1	2		

*Significant at 5% level,

NS: Non-Significant

CONCLUSION:

The present study was conducted to assess the effectiveness of structured teaching programme on knowledge regarding methods of TB drug administration among nursing students.

The pre-test knowledge level revealed that 18% had inadequate knowledge and 80% had moderate knowledge regarding methods of TB drug administration, whereas the post test knowledge level revealed that 44% had adequate knowledge and 54% had moderate knowledge; indicating the effectiveness of the structured teaching programme on methods of TB drug administration. The pre-test scores of knowledge did not show any significant association with demographic variables such as age, gender, type of family, religion, year of studying, heard of methods of TB drug administration. Thus, it was inferred that nursing students had inadequate knowledge in the pre-test regarding methods of TB drug administration, and the structured teaching programme was an effective method to improve their knowledge.

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