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**Maitra BM**  
Department of Psychiatric  
Nursing, RS College of  
Nursing, Bangalore, Rajiv  
Gandhi University of Health  
Sciences, Bangalore,  
Karnataka, India

## A study to assess the effectiveness of structured teaching program on knowledge, motivation and practice of smokers regarding smoking in a rural population at Bangalore District

**Maitra BM**

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### Abstract

Tobacco consumption remains a major public health concern worldwide. Smoking is associated with severe health risks, including cardiovascular diseases, respiratory disorders, and cancer. Rural populations often have limited awareness and access to smoking cessation programs, necessitating structured interventions to improve knowledge and motivation to quit smoking.

**Objective:** This study assesses the effectiveness of a structured teaching program (STP) on the knowledge, motivation, and smoking practice of individuals in a rural area in Bangalore.

**Methodology:** This study followed a structured approach to evaluate the effectiveness of a teaching program for smoking cessation. A quasi-experimental one-group pre-test and post-test design was used. A total of 35 smokers participated, and data were collected using structured questionnaires.

**Results:** The results showed a significant improvement in knowledge (pre-test mean: 6.71±1.628; post-test mean: 10.62±1.73;  $p<0.005$ ), motivation (pre-test mean: 3.285±1.61; post-test mean: 5.028±1.69;  $p<0.005$ ), and smoking behavior (pre-test mean: 4.2±0.521; post-test mean: 3.685±0.497;  $p<0.005$ ). The findings suggest that STP is an effective intervention for smoking cessation.

**Keywords:** Smoking, structured teaching program, rural population, knowledge, motivation, practice

### Introduction

Tobacco smoking is one of the leading causes of preventable deaths globally. Studies indicate that smoking-related diseases contribute significantly to mortality, particularly in rural populations where awareness about smoking hazards is low. The present study evaluates the impact of a structured teaching program (STP) in enhancing knowledge, motivation, and practice changes among smokers.

Tobacco smoking is a leading cause of preventable deaths globally, responsible for over 8 million fatalities each year [1]. Studies indicate that smoking-related diseases contribute significantly to mortality, particularly in rural populations where awareness about smoking hazards is low [2]. For instance, adults residing in rural communities have a smoking rate of 15.4%, compared to 10.1% among urban adults [3]. The present study evaluates the impact of a structured teaching program (STP) in enhancing knowledge, motivation, and practice changes among smokers.

Tobacco consumption remains a significant public health concern globally, leading to substantial morbidity and mortality. Smoking is a primary cause of preventable deaths, associated with various adverse health effects, including respiratory diseases, cardiovascular complications, and cancer [4]. Despite ongoing efforts to reduce tobacco use, rural populations often have limited awareness of its dangers and lack access to structured smoking cessation interventions [5].

The World Health Organization (WHO) has emphasized the necessity of targeted educational programs to improve smoking cessation rates [4]. Studies suggest that knowledge about smoking hazards and motivation to quit play crucial roles in modifying smoking behaviors [6]. However, in rural settings, such interventions remain scarce [7].

A structured teaching program (STP) can bridge this gap by educating smokers on the health risks associated with tobacco use and equipping them with effective cessation strategies [8]. Evaluating the effectiveness of STP in improving knowledge, motivation, and behavioral

**Corresponding Author:**  
**Maitra BM**  
Department of Psychiatric  
Nursing, RS College of  
Nursing, Bangalore, Rajiv  
Gandhi University of Health  
Sciences, Bangalore,  
Karnataka, India

changes is essential for implementing similar interventions in other communities [6, 7]. This study aims to assess whether an STP can positively impact smokers in a rural population, contributing to better health outcomes and enhanced psychiatric nursing interventions [5, 8].

### Objectives

1. To assess the knowledge of smokers regarding smoking.
2. To assess the motivation of smokers regarding smoking.
3. To assess the practice of smokers regarding smoking.
4. To determine the effectiveness of structured teaching program on knowledge of smokers regarding smoking.
5. To determine the effectiveness of structured teaching program on motivation of smokers regarding smoking.
6. To determine the effectiveness of structured teaching program on practice of smokers regarding smoking.
7. To identify an association between pre-test knowledge of smokers regarding smoking with selected demographical variables.

### Methodology

#### Research Approach

Quantitative research approach.

#### Research Design

A pre-experimental one-group pre-test and post-test design was used.

#### Study Setting

The study was conducted in a rural village in Bangalore, involving 35 smokers selected through convenience sampling.

#### Target Population

Smokers residing in the rural community.

#### Sample Size

A total of 35 smokers participated in the study.

#### Sampling Technique

Convenience sampling method was used to select participants.

#### Tools Used

##### Structured Knowledge Questionnaire

Assessed participants' knowledge of smoking and its health risks. The total score ranged from 0 to 15, with higher scores indicating better knowledge.

**Readiness to Quit Ladder:** Measured motivation levels for smoking cessation. Scores ranged from 1 (not thinking about quitting) to 10 (actively making changes to quit).

**Fagerstrom Test for Nicotine Dependence:** Evaluated participants' level of nicotine addiction. Scores ranged from 0 to 10, where 0-2 indicated very low dependence, 3-4 low dependence, 5 moderate dependence, 6-7 high dependence, and 8-10 very high dependence.

**Results:** The collected data is analysed and presented in the following sections.

**Section A:** Analysis of baseline characteristics of smokers.

**Section B:** Analysis of knowledge and practice score regarding smoking.

**Section C:** Analysis of effectiveness of structured teaching program regarding smoking.

**Section D:** Analysis of association between pre interventional knowledge level and selected baseline variables.

**Section A:** Analysis of baseline characteristics of smokers.

**Table 1:** Analysis of baseline characteristics of smokers.

Sl. No.	Baseline variables	Frequency	Percentage %
1	<b>Age of the subjects</b>		
	20-30	10	28.57
	31-40	16	45.71
	41-50	5	14.28
	50 and above	4	11.42
2	<b>Type of family</b>		
	Joint	22	62.85
	Nuclear	13	37.14
3	<b>Monthly income</b>		
	Less than 10000	24	71.42
	More than 10000	10	28.56
4	<b>Education of subjects</b>		
	Illiterate	5	14.28
	Below SSLC	18	51.42
	SSLC & above	12	34.28
5	<b>Occupation</b>		
	Un skilled	26	74.29
	Skilled	9	25.71

The majority of participants (45.71%) were aged 31-40 years. Most of them (62.85%) belonged to joint families, and 71.42% had a monthly income of less than 10,000 INR. A significant portion (74.29%) were unskilled workers. This table presents the demographic details of the participants, including age, family type, monthly income, education, and occupation.

**Section B:** Analysis of knowledge and practice score regarding smoking.

**Table 2:** Analysis of pre-test and post-test knowledge score regarding smoking.

Level of knowledge	Pre test		Post test	
	Frequency	Percentage	Frequency	Percentage
Poor (below 15)	8	22.85%	0	0%
Average (15-30)	20	57.14%	10	28.57%
Good (Above 30)	7	20%	25	71.42%
Total	35	100%	35	100%

Post-intervention, the percentage of participants with good knowledge increased from 20% to 71.42%, while those with poor knowledge (below 15) dropped to 0%. This table compares the pre-test and post-test knowledge scores of smokers, categorizing them into poor, average, and good levels.

**Table 3:** Analysis of area wise pre-test and post-test knowledge score regarding smoking.

Knowledge aspects	Maximum score	Pre test			Post test		
		Mean	SD	Mean %	Mean	SD	Mean %
Causes	7	0.268	0.188	3.82	0.420	0.864	6
Effects	4	0.10	0.135	2.5	0.435	0.485	10.875
Signs & symptoms	3	0.304	0.279	0.86	0.428	0.246	14.26
Complication	3	0.295	0.247	0.84	0.385	0.277	12.66
Management	7	0.2	0.285	0.814	0.346	0.94	4.94
Prevention	3	0.27	0.569	0.77	0.399	0.324	13.32

The most significant improvement was seen in knowledge about the effects of smoking, where mean scores increased from 2.5% to 10.87%. This table provides a breakdown of

knowledge scores based on specific aspects such as causes, effects, symptoms, complications, management, and prevention of smoking.

**Table 4:** Analysis of pre-test and post-test practice score regarding smoking.

level of dependence	Pre test		Post test	
	Frequency	Percentage %	Frequency	Percentage %
Very low dependence	111	31.42	12	34.28
Low dependence	9	25.71	10	28.57
Medium dependence	4	11.42	2	5.71
High dependence	4	11.42	7	20
Very high dependence	7	20	4	11.42
Total	35	100	35	100

Post-test results showed an increase in participants with low dependence (28.57%) and a reduction in those with very high dependence (from 20% to 11.42%). This table shows the level of dependence on smoking before and after the

intervention, highlighting changes in smoking habits.

**Section C:** Analysis of effectiveness of structured teaching program regarding smoking

**Table 5:** Comparison of pre-test knowledge scores with post test scores by using the paired 't' test.

	Mean+SD	Mean difference	df	Paired t test value	p value
Pre test	6.71+1.628	3.91	34	14.541	0.005*
Post test	10.62+1.73				

A significant increase in mean knowledge scores was observed (p=0.005), confirming the effectiveness of the structured teaching program. This table evaluates the

statistical significance of changes in knowledge scores before and after the structured teaching program.

**Table 6:** Comparison of pre-test and post-test motivation of subjects by using the paired 't' test.

	Mean+ SD	Mean difference	df	Paired t test value	p value
Pre test	3.285+01.61	1.743	34	6.416	0.005*
Post test	5.028+1.69				

The mean motivation score increased from 3.285 to 5.028, showing a statistically significant improvement (p=0.005). This table assesses the effectiveness of the structured

teaching program in improving motivation levels for smoking cessation.

**Table 7:** Comparison of pre-test and post-test practice of subjects by using the paired 't' test.

	Mean+ SD	Mean difference	df	Paired t test value	p value
Pre test	4.2+0.521	0.512	34	3.059	0.005*
Post test	3.685+0.497				

Smoking behavior improved significantly, with the mean practice score reducing from 4.2 to 3.685 (p=0.005). This table examines changes in smoking behavior after the intervention, measuring reductions in smoking frequency.

**Section D**  
Analysis of association between pre-test knowledge level and selected baseline variables.

**Table 8:** Association between pre-test knowledge level and selected baseline variable

SI. No:	Baseline Variables	Knowledge score		$\chi^2$ Value	df	p- value	Inference
		Poor	Good				
		NO (%)					
1	<b>Age of the subjects</b>						
	20-40	6	19	0.480	1	0.489	$p > 0.05$ NS
	41 and above	1	7				
2	<b>Type of family</b>						
	Joint	7	15	1.16	1	0.282	$p > 0.05$ NS
	Nuclear	2	11				
3	<b>Monthly income</b>						
	Less than 10000	5	20	0.405	1	0.524	$p > 0.05$ NS
	More than 10000	3	7				
4	<b>Education of subjects</b>						
	Illiterate	1	4	1.70	2	0.427	$p > 0.05$ NS
	Below SSLC	5	13				
	SSLC & above	1	11				
5	<b>Occupation</b>						
	Un skilled	4	22	1.36	1	0.246	$p > 0.05$ NS
	Skilled	3	6				

NS= Not significant S= Significant

No significant association was found between pre-test knowledge scores and demographic variables, indicating that knowledge improvement was independent of baseline characteristics. This table analyzes the relationship between pre-test knowledge levels and various demographic variables such as age, family type, income, education, and occupation.

**Implications for Psychiatric Nursing**

- Psychiatric nurses should integrate structured educational programs in tobacco cessation initiatives.
- Nurses can act as primary educators in rural settings to promote smoking awareness.
- Further research should focus on personalized interventions for smoking cessation.

**Discussion**

The findings of this study align with previous research demonstrating the effectiveness of structured educational interventions in enhancing knowledge and motivation for smoking cessation.

A study conducted by Sahu *et al.* (2017) assessed the impact of a structured teaching program on the ill effects of tobacco chewing among adults in Patan, India. The study employed a quasi-experimental design with 100 participants and utilized pre- and post-test assessments. The results indicated a significant increase in knowledge scores following the intervention, with pre-test mean scores of 11.5 and post-test mean scores of 44.38 ( $t = 11.38, p < 0.001$ )<sup>[9]</sup> Similarly, our study observed a significant improvement in knowledge scores from a pre-test mean of 6.71±1.628 to a post-test mean of 10.62±1.73 ( $p < 0.005$ ). Both studies highlight the effectiveness of structured teaching programs in increasing awareness about the hazards of tobacco use.

In another study by Vadhel *et al.* (2021), the effectiveness of a structured teaching program on smoking hazards was evaluated among adolescent boys in Rajkot. The study reported a significant enhancement in knowledge levels post-intervention, emphasizing the role of educational initiatives in tobacco use prevention<sup>[10]</sup>. Our findings are consistent with this study, demonstrating that structured educational interventions can effectively improve knowledge and motivation regarding smoking cessation.

Furthermore, a study by Samson *et al.* (2023) assessed the prevalence of tobacco use among adolescents and the effectiveness of a structured teaching program on the ill effects of tobacco use in New Delhi. The study revealed a significant difference between pre-test and post-test knowledge levels, indicating the efficacy of structured teaching programs in enhancing awareness among adolescents<sup>[11]</sup>. This aligns with our study's results, which showed significant improvements in knowledge and motivation scores post-intervention.

**Conclusion**

The structured teaching program proved effective in increasing knowledge and motivation while decreasing smoking behavior. Future studies should focus on long-term behavioral adherence and intervention sustainability.

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**Conflict of Interest**

Not available

**Financial Support**

Not available

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