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An Experimental Study to Evaluate the Effectiveness of PTP on Attitude of Adolescents Regarding Effects of Smoking and Smokeless Tobacco Use and it's Health Hazards Among Students in Selected High School in Dewas

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Abstract	Original Research Article

Adolescence represents a period of substantial growth and potential, yet it is simultaneously a phase of considerable vulnerability. Many young people during this stage encounter temptations to engage in behaviors such as alcohol and drug use, smoking, and early sexual activity, which can lead to a higher likelihood of intentional harm and sexually transmitted infections. In the university setting, a deeper understanding and observation of the impact of tobacco-related illnesses, combined with exposure to more rigorous anti-smoking environments, can gradually lead to behavioral shifts regarding tobacco consumption among young people. This study was conducted to assess the attitude level of adolescent regarding effect of smoking and Smokeless Tobacco use and it's Health Hazards and find out the association between attitudes level of adolescents with selected demographic variable. *Method*: The sample was selected for the study includes 60 college students. Evaluate approach and simple random sampling method was used to select the sample. The reliability of the tool was established and the data was collected by using structured knowledge questionnaire, based on demographic data, 20 items on attitude scale. Likert scale was used to assess the attitude score. *Result*: Adolescents showed that 18.3% of Adolescents had a positive attitude in the pre-test. And 65.0% of them have a moderately favorable Attitude and 16.7% has an Un-favorable attitude. In the post-test, 73.30% of students had an adequate favorable attitude, and 26.7% of them had a moderately favorable attitude and none of them have an unfavorable attitude. The contrast between pre-test and post-test attitude was computed by utilizing student paired t-test and the value is t=17.56 with the degree of freedom df=58 at p<0.05 level of significance. *Conclusion*: Planned teaching Programme was found to be a very effective method of enhancing favourable attitude regarding effects of smoking and smokeless tobacco use and it's health hazards among students in selected high school in Dewas.

Keywords: Experimental study, smoking and smokeless tobacco, Indore MP, Attitude, Student, Planned Teaching Programme (PTP).

INTRODUCTION

Tobacco use is widely recognized as a major public health challenge, with its consumption being a leading factor in the incidence of lung and oral cancers. The habit often starts in adolescence, a critical period marked by observation, understanding, struggles, challenges, and psychological growth. In India, the use of tobacco is on the rise, with variations in consumption methods. The World Health Organization (WHO) has reported that around 194 million men and 45 million women in India use tobacco in either smoked or smokeless forms. Studies indicate significant regional differences in tobacco use, influenced by social customs, gender, and the form of tobacco. Globally, tobacco is a primary cause of mortality, and the WHO has identified the surge in tobacco consumption, particularly in developing nations, as an epidemic. The death toll from tobacco is projected to increase to about 10 million by 2025 from the current estimate of 5 million deaths annually. Every 6.5 seconds, a tobacco-related death occurs, predominantly in developing countries like India.

This exacerbates challenges related to health, poverty, and economic burdens in these nations [1].

Tobacco use is a significant contributor to global chronic disease-related fatalities. The world has around 1.3 billion smokers, with the majority, about 80%, residing in developing countries. Annual deaths due to tobacco usage are currently at 5 million globally, but projections indicate this number could double to 10 million by 2025, with a worrying 7 million of these deaths likely occurring in developing countries. The economic impact of tobacco-related mortality and morbidity is substantial, costing approximately US$ 200 billion each year. Data from the World Health Organization (WHO) suggests that globally, 47% of men and 12% of women are smokers [2].

The Global Youth Tobacco Survey, which covered countries and included about 750,000 students aged 13-15 years, revealed that around 9% of these students were active smokers, and 11% used tobacco products other than cigarettes. India ranks as the world's second-largest consumer of tobacco, following China. In India, the deaths attributable to tobacco use are estimated to be between 800,000 and 900,000 annually. Approximately half of all cancer cases in Indian men and 20% in women are linked to tobacco usage, contributing to around 0.7 million tobacco-related deaths each year. Tobacco use leads to more fatalities than AIDS, alcohol, drug abuse, car accidents, homicides, suicides, and fires combined, according to the Centers for Disease Control and Prevention (CDC). The financial burden of diseases associated with tobacco use, including cancer, heart, and lung diseases, is estimated to be around Rs 308.33 billion annually in India [3].

Tobacco is a major global health hazard and is currently the second leading cause of death worldwide. It claims the lives of about 5 million people annually on a global scale. The problem of tobacco use is escalating, resembling an advancing pandemic. Research from the early 1950s onwards has linked tobacco use to more than 25 diseases. If current trends continue, tobacco is projected to cause 10 million deaths per year by the 2020-2030 decade, with a staggering 70% of these fatalities occurring in developing countries [4].

Problem Statement
An Experimental Study to Evaluate the Effectiveness of PTP on Attitude of adolescents regarding effects of smoking and smokeless tobacco use and it's health hazards among students in selected high school in Dewas, M. P.

Purpose of the Study
To assess and evaluate the attitude of students regarding effects of smoking and smokeless tobacco use and it's health hazards before and after the administration of PTP.

OBJECTIVES
1. To assess the attitude level of adolescent regarding effect of smoking and Smokeless Tobacco use and it's Health Hazards.
2. To evaluate the effectiveness of STP on effect of smoking and Smokeless Tobacco use and it's Health Hazards by comparing pre and post test attitude score.
3. To find out the association between post-test attitudes level of adolescents with selected demographic variable.

Hypothesis
H_1: There will be significant difference between Pretest and Posttest attitude scores of high school studentsregarding effects of smoking and smokeless tobacco use and it's health hazards.
H_2: There will be a significant association between post-test attitude level of students on Effect of smoking and Smokeless Tobacco use and it's Health Hazards with selected demographic variables.

OPERATIONAL DEFINITIONS
Evaluate: In this study evaluate refers to the organized systematic methods of collection of data regarding the effects of smoking and smokeless tobacco use and its health hazards.

Effectiveness: In this study it refers to the significant increase in knowledge level on smoking hazards as determined by the differences between pre and post test scores.

Planned Teaching Programme (PTP): Indicated to material used to teaching knowledge of effects of smoking and smokeless tobacco use and its health hazards which prepared by researcher and content validated by experts. It is intended to provide information (or) knowledge.

Attitude: It refers to the expressed feelings, opinion, beliefs and values of students regarding effects of smoking and smokeless tobacco use and its health hazards, which was measured by using attitude scale.

Adolescents: It refers to the adolescents between the age group of 13-15 years who were studying in 8th to 10th standards.

Smoking Tobacco: Is the practice where tobacco is burned and the vapors either tasted or inhaled.

Smokeless Tobacco: Smokeless tobacco is a product consisting of tobacco or a tobacco blend that is chewed, inhaled or sucked on, rather than smoking.

Hazards: In this study it refers to knowledge on harmful health effects of smoking and smokeless tobacco among school children.

REVIEW OF LITERATURE

(Pednekar MS, 2004) In a study conducted in Goa focusing on tobacco use among school students, data was collected from around 50 selected schools. A significant participation rate of over 94% was noted, with the participants comprising 56% boys and 44% girls. The study revealed that 13.5% of these students reported using tobacco, with over 40% of them starting as early as 10 years of age or younger. The prevalence of smokeless tobacco use stood at 2.8%, while smoking tobacco was reported at 3.0%. Among the genders, 3.5% of boys and 2.2% of girls were involved in smoking. The study also found that students who did not use tobacco were more likely to be aware of its harmful effects, reporting this knowledge two to three times more than tobacco users. Over half of the students indicated they had received education in school about the dangers of tobacco use. Furthermore, tobacco use among parents and close friends was found to have a positive correlation with students' attitudes towards tobacco use [5].

(Raj N, Sarita S, 2011) a cross-sectional survey using questionnaires was conducted among school children in Noida, India, to understand the age of initiation and prevalence of tobacco use. The study involved 4786 students from classes 7 to 12, ranging in age from 11 to 19 years, and included participants from both private and government schools in the city of Noida. The findings indicated that 11.2% of the students used some form of tobacco. Among these, 8.8% were identified as 'ever smokers' (which includes current smokers), and 4.6% as 'ever tobacco chewers' (including current chewers). The survey also found that 3.7% were exclusive smokers, and 2.5% were exclusive tobacco chewers. The average age at which these habits began was approximately 12.4 years. Notably, a high percentage of both boys (70%) and girls (80%) started using tobacco before the age of 11. An interesting observation from the study was the higher early initiation of tobacco chewing among students from private schools compared to those in government schools [6].

(M Rani *et al.*, 2003) a comprehensive cross-sectional study aimed to assess the prevalence and identify the socio-economic and demographic factors linked to tobacco use in India. This research, which utilized data from the National Family Health Survey-2 conducted in 1998-99, involved a large sample size of 315,598 individuals aged 15 years and above, from 91,196 households. Information on tobacco consumption was gathered from individuals in these households. The study revealed that 30% of the Indian population aged 15 and older, comprising 47% of men and 14% of women, either smoked or chewed tobacco. This demographic equates to nearly 195 million individuals—154 million men and 41 million women across the nation. A notable finding was that tobacco consumption was significantly more prevalent among the economically disadvantaged, those with lower education levels, and individuals belonging to scheduled castes and scheduled tribes. The study also observed that the prevalence of tobacco use increased with age, peaking around 50 years, and then either stabilized or declined thereafter. Furthermore, the incidence of smoking and chewing tobacco varied considerably between different states in India and was closely associated with individual sociocultural characteristics [7].

(Mohan S, 2006) in a cross-sectional study conducted among high school students in Kannur district, Kerala, the focus was on determining the prevalence and patterns of smokeless tobacco use. The study involved 1200 children and utilized a self-administered questionnaire to collect data. The average age of the students was 14.4 years, and 8.5% of the participants reported using tobacco. Notably, 2% of the participants used smokeless tobacco, and none of the female students reported using any tobacco products. Among tobacco users, the average age at the onset of tobacco use was 12.8 years. The study found that more than half of the smokeless tobacco users began their habit at 12 years of age, 38.5% started at 13 years, and the rest at 14 years. It was also observed that 84.6% of smokeless tobacco users consumed it 2-3 times a week, and 39% reported purchasing tobacco products from shops near their schools. The study concluded that there is a significant need to educate children about the dangers associated with tobacco consumption [8].

METHODOLOGY

The research approach adopted for this study was evaluative in nature. The target population of the study is made up of students who are studying in the selected high school of Dewas, MP. A pre-experimental single group pre-test post-test design was used to assess the effectiveness of PTP on the attitude of students regarding effects of smoking and smokeless tobacco use and it's health hazards. The sample consists of 60 high school Students of Dewas, MP. In this study non probability purposive sampling technique was used for selection of samples. The instrument for the data collection was a structured questionnaire and had two parts: A: Socio-demographic data, B: 5 point likerts scale to assess the attitude of students regarding smoking and smokeless tobacco use and it's health hazards. The data obtained was analyzed by using descriptive and inferential statistics in terms of frequency, percentage, mean, standard deviation, paired t'test and Chi-square test. The anonymity and confidentiality of the study subjects was maintained throughout the study.

RESULTS & DATA ANALYSIS

Table 1: Distribution of adolescent students according to their demographic variables, N=60

Demographic variables		Frequency(n)	Percentage %
Age	11 Year	15	25.0%
	12 Year	18	30.0%
	13 Year	12	20.0%
	14 Year	15	25.0%
Occupation of the parents	Private Employed	13	21.7%
	Govt. Employed	9	15.0%
	Own Business	22	36.7%
	Agriculture	16	26.7%
Family Income	> 10000	10	16.7%
	10001 – 20000	39	65.0%
	Above 20000	11	18.3%
Type of family	Nuclear family	37	61.7%
	Joint family	13	21.7%
	Extended family	10	16.7%
Religion	Hindu	42	70.0%
	Muslim	12	20.0%
	Christian	6	10.0%
	Others	0	0.0%
Food Habits	Vegetarian	38	63.3%
	Non vegetarian	22	36.7%
Area of Residence	Urban	17	28.3%
	Rural	10	16.7%
	Semi-Urban	21	35.0%
	Semi-Rural	12	20.0%
Family history consumption of tobacco	Father	19	31.7%
	Brother	6	10.0%
	Grandfather	26	43.3%
	Other-Specify	0	0.0%
	No History	9	15.0%
Source of information	Attended awareness prgramme	0	0.0%
	News paper, Magazine	15	25.0%
	Television, Social Media, Internet	31	51.7%
	Other, Specify	14	23.3%

The findings are summarized as follows

The majority of respondents 18 (30.0 percent) were in the age group of 12 years, 22 (36 percent) of patents have own business, 39 (65 percent) having family income between 10001-20000, 37(61.7%) samples belong to nuclear family, 42(70%) sample belong to hindu family, 38 (63.0 percent) adolescent were vagitarian,21(35.0%) subjects living in semi-urban areaing the family history of using tobacco, 31(51.0%) subjects were getting information from Social media/Internet.

Table-2: Pretest attitude score on different aspects of smoking and smokeless tobacco use and it's health hazards, n=60

Statements	No. of questions	Min –Max score	Pre-test Attitude		SD
			Mean score	%	
Positive statements	17	17 -85	60.22	70.85%	7.51
Negative statements	03	03 -15	10.72	71.47%	2.31
OVER ALL	20	20-100	70.93	70.93%	9.09

Table 2 shows, High school students pre-test percentage of Attitude in each aspects of smoking and smokeless tobacco use and it's health hazards before administration of PTP. In positive statements with a mean score of 60.22 and 70.85 %. In negative statements with a mean score of 10.72 and 71.47 %. Students were having average Attitude on both aspects.

Table-2: Pre-test level of attitude score on smoking and smokeless tobacco use and it's health hazards, N=60

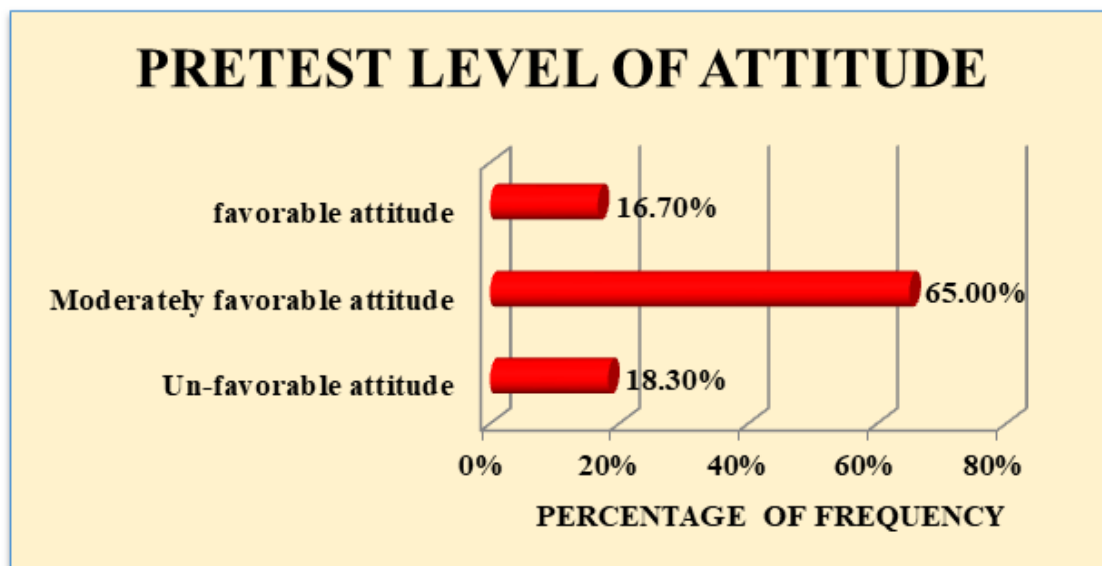| Level of Attitude	Attitude Score	No. of Staff nurses	Percentage %
Unfavorable attitude	20-60	11	18.3%
Moderatjely favorable attitude	61-80	39	65.0%
favorable attitude	81-100	10	16.7%
Total		60	100.0

Fig-1: Horizontal Bar diagram showing pre-test level of attitude among Adolescents towards smoking and smokeless tobacco

Table 2 and Figure 1 An attitude of smoking and smokeless tobacco use and it's health Hazards before structure educational programme, students showed that 18.3% of Adolescents had a positive attitude, 65.0% of them have a moderately favorable Attitude and 16.7% has an favorable attitude.

Table-3: Posttest attitude score on different aspects of smoking and smokeless tobacco use and it's health hazards, N=30

Statements	No. of questions	Min –Max score	Posttest Attitude		SD
			Mean score	%	
Positive statements	17	17-85	71.75	84.41%	4.46
Negative statements	03	3 -15	12.63	84.20%	2.03
OVER ALL	20	20 -100	84.38	84.38%	5.37

Table 3 shows, High school students post-test percentage of Attitude in each aspects of smoking and smokeless tobacco use and it's health hazards after administration of STP. In positive statements with a mean score of 71.75, SD 4.46 and mean percentage 84.41 %. In negative statements with a mean score of 12.63 and mean percentage of 84.20 % and SD 2.03. In an overall mean score of 84.38, SD 5.37 and mean percentage 84.38 %. They are having adequate favorable Attitude on both aspects.

Table-4: Posttest level of attitude score on smoking and smokeless tobacco use and it's health hazards, N=60

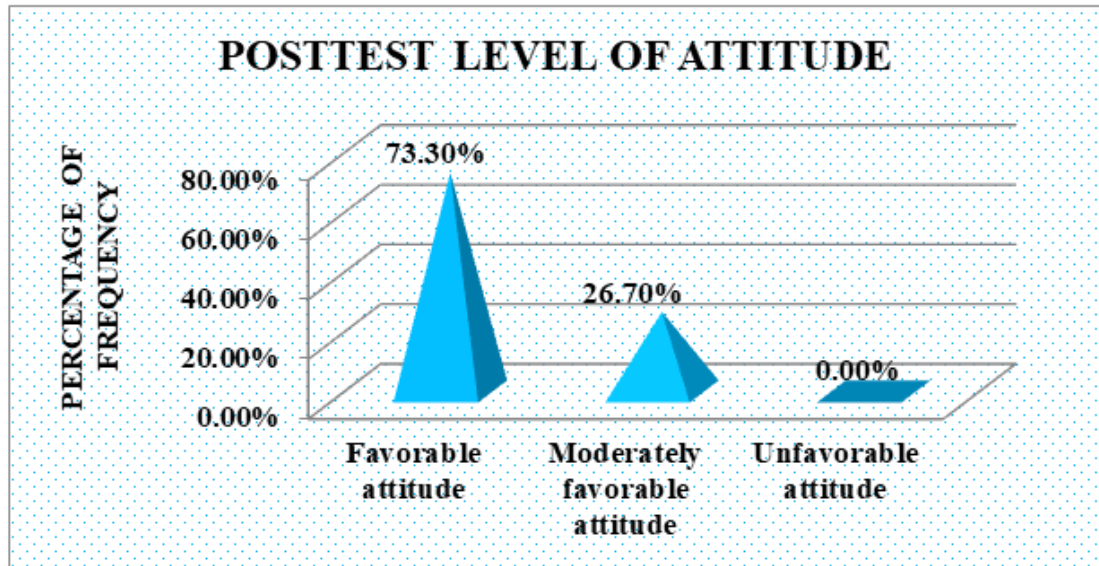| Level of Attitude	No. of Staff nurses	Percentage %
Unfavorable attitude	0	0.0%
Moderately favorable attitude	16	26.7%
favorable attitude	44	73.3%
Total	**3 0**	**100%**

Fig-2: **Pyramid diagram showing post-test attitude level among Adolescents towards Effect of smoking and smokeless tobacco use**

Table -4 and Figure 2 shows the students post-test level of Attitude on Smoking and smokeless tobacco use and it's health Hazards after the Planned Teaching Programme. In post-test 73.30% of the students were having sufficient favorable Attitude, 26.07% of them having a moderately favorable Attitude and no one having an Unfavorable Attitude.

Table 5: Comparison between pre-test and post-test levels of attitude among adolescents towards effect of smoking and smokeless tobacco use, (N=60)

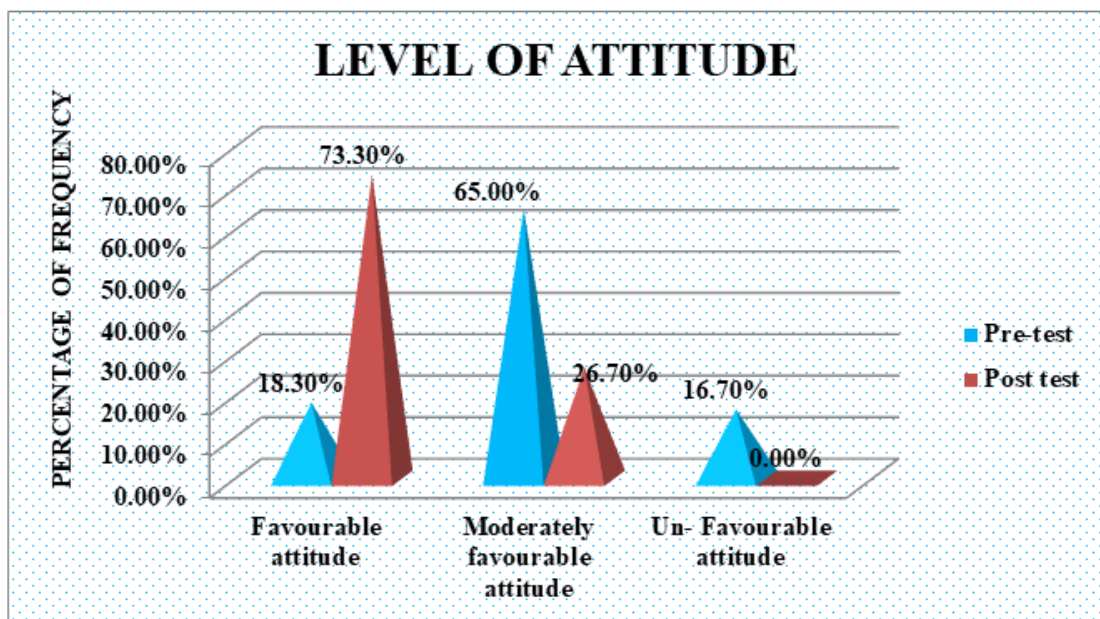| Level of attitude	Attitude scores	No. of study participants.		Percentage of frequency	
		Pre-test	Post test	Pre-test	Post test
Favourable attitude	81-100	11	44	18.3%	73.3%
Moderately favourable attitude	61-80	39	16	65.0%	26.7%
Un- Favourable attitude	20-60	10	0	16.7%	0.0%

Figure 3: Cone diagram showing pre and post-test attitude level among Adolescents towards Smoking and smokeless tobacco use and it's health Hazards

Table 5 and Figure 3 from the study demonstrate the changes in adolescents' attitudes towards smoking and smokeless tobacco use and their awareness of health hazards associated with these habits, measured before and after a structured educational program. Initially, before the educational intervention, 18.3% of adolescents displayed a positive attitude towards these tobacco forms in the pre-test assessment. A majority, 65.0%, had a moderately favorable attitude, while 16.7% exhibited an unfavorable attitude towards tobacco use. However, following the educational program, there was a notable shift in attitudes. In the post-test, a significant 73.30% of students demonstrated an adequate favorable attitude towards the health hazards of smoking and smokeless tobacco. Additionally, 26.7% maintained a moderately favorable attitude, and notably, none of the students held an unfavorable attitude post-intervention.

Table 6: Pre and Post Test Attitude Scores of Students towards The Effects of Smoking and Smokeless Tobacco Use and It's Health Hazards, (N=60)

Aspects	Mean			Mean%			Calculated paired t-test value
	Pre-test	Post test	Enhancement	Pre-test	Post test	Enhancement	
Positive statements	60.22	71.75	11.53	70.85%	84.41%	13.56%	16.57(S) df=59
Negative statements	10.72	12.63	1.91	71.47%	84.20%	12.73%	8.34 (S) df=59
Attitude score from whole test	70.93	84.38	13.45	70.93%	84.38%	13.45%	17.56 (S) df=59

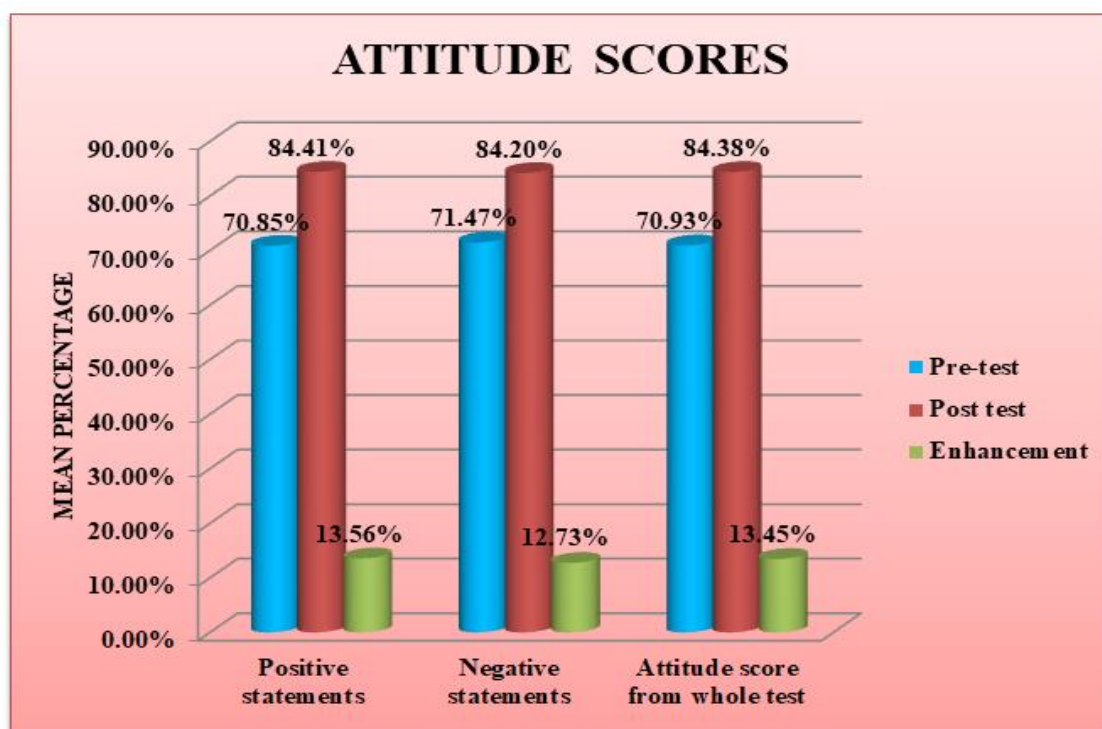**(S)= SIGNIFICANT AT 0.05 LEVEL**

Figure 4: Cylindrical diagram showing pre and post-test attitude scores among students towards Effect of smoking and smokeless tobacco use

Table 6 and Figure 4 shows the comparison of attitude on tobacco smoking before & after the Planned Teaching Programme. Altogether the aspects, Students improved their attitude when the organization of an organized instructing program. The accuracy between attitude score before and after the test is lower and it's significant. Statistical significance turned into determined by way of utilizing a paired 't' test.

Hypothesis H[1]: In every one of the viewpoints, adolescents enhanced their attitude after the organization of a structured education programme. The difference between the attitude score before and after the test is smaller and significant. The contrast between pre-test and post-test attitude was computed by utilizing student paired t-test and the value is t=17.56 with the degree of freedom df=58 at p<0.05 level of significance. So statistically the acquired value t=17.56 is observed to be

significant at 0.05, so null hypothesis H02 is rejected and
naturally, research hypothesis H2 is accepted.

Table 7: Association between post test attitude scores regarding effect of smoking and smokeless tobacco use among adolescents with their selected socio demographic variable, (n=60)

Sl. No	Socio Demographic Variables	Categories	Post Test Level of Knowledge		CALCULATED χ² VALUE	Df
			Moderately favourable attitude	favourable attitude		
1	Age	11 Year	3	12	1.903 (NS)	3
		12 Year	4	14		
		13 Year	3	9		
		14 Year	6	9		
2	Occupation of the parents	Private Employed	6	7	3.303 (NS)	3
		Govt. Employed	2	7		
		Own Business	5	17		
		Agriculture	3	13		
3	Family Income	> 10000	3	7	.843 (NS)	2
		10001 – 20000	9	30		
		Above 20000	4	7		
4	Type of family	Nuclear family	8	29	1.463 (NS)	2
		Joint family	5	8		
		Extended family	3	7		
5	Religion	Hindu	12	30	6.25 (S)	2
		Muslim	3	9		
		Christian	1	5		
		Others	0	0		
6	Food Habits	Vegetarian	9	29	0.471 (NS)	1
		Non vegetarian	7	15		
7	Area of Residents	Urban	2	15	4.308 (NS)	3
		Rural	4	6		
		Semi-Urban	5	16		
		Semi-Rural	5	7		
8	Family history consumption of tobacco	Father	10	9	9.991 (NS)	3
		Brother	1	5		
		Grandfather	3	23		
		Other-Specify	0	0		
		No History	2	7		
10	SOURCE OF INFORMATION	Attended awareness prgramme	0	0	0.456 (NS)	2
		News paper, Magazine	3	12		
		Television, Social Media, Internet	9	22		
		Other, Specify	4	10		

(S)= SIGNIFICANT AT 0.05 LEVEL; (NS)= NOT SIGNIFICANT

Table 7 shows that post-test attitude of adolescents was having a significant association with the Family history of consumption of tobacco ($χ^2$=9.991 at p> 0.05). Whereas attitude regarding Smoking and smokeless tobacco use and it's health Hazards is non-significant with Age in years, Occupation of the parents, Family Income, Type of family, Religion, Food Habits, Area of Residents, Source of information. These results are obtained by Pearson test/Yates corrected chi-square test and were statistically significant.

Hypothesis-H²: Table 7 Shows that post-test attitude of student's is having a significant association with family history of consumption of tobacco any of the socio-demographic variables like family history of consumption of tobacco etc. So by reading these results statistically Null hypothesis is rejected and the research hypothesis was accepted.

Nursing Implication
The findings of the study will help the investigator in the following ways:
- Developing positive attitude regarding smoking and smokeless tobacco use and it's health hazards Management.
- Encourage the high school students to improve

their favourable attitude regarding smoking and smokeless tobacco use and it's health hazards Management in their working Environment.

The finding of the study can be used in the following areas of nursing profession.

Nursing practice

Nurses play a critical role in the health education of students, particularly in the context of the adverse effects of tobacco use. Their position allows them to be instrumental in identifying the prevalence of tobacco use among students, a task that presents a challenge for health care professionals. In school settings, nursing professionals have the unique opportunity to educate and enhance the knowledge of not only students but also their parents and teachers about the dangers of smoking and smokeless tobacco use. The implementation of regular health education programs is key to keeping this knowledge current. These programs can employ various methods to disseminate health information effectively. These methods include lectures, the use of mass media, distribution of pamphlets, information booklets, and self-instructional modules. Each of these approaches can be tailored to effectively reach and educate the school community about the health hazards associated with tobacco use.

Nursing Education

Nursing education is pivotal in equipping future nurses with the skills necessary to effectively impart health information and aid individuals in developing self-care practices within the community. The nursing curriculum serves as a crucial tool in this preparation, emphasizing the importance of preventive health, particularly in relation to children.

It's important that nursing students are actively involved in community outreach, educating the public about the harmful effects of detrimental habits such as smoking and tobacco chewing. Such involvement is essential for students to hone their skills in effective public communication and organization. By engaging directly with communities, nursing students can better understand and fulfill their role in health promotion and the prevention of harmful habits in school children and the wider community.

Nursing Administration

Nurse administrators play a crucial role in fostering community health, particularly in the realm of raising awareness about the health risks associated with various forms of tobacco use. Their responsibilities in organizing educational programs involve not only a deep understanding of health issues but also effective leadership and organizational skills. Successful program planning requires a strong team spirit and efficient management of resources such as manpower, funds, materials, methods, and time. Additionally, cultivating goodwill is essential for the effective conduct of these education programs.

In their capacity, nurse administrators can also initiate and influence policy-making in schools and community settings. This involves developing public awareness programs focused on the health hazards of smoking and smokeless tobacco use.

Nursing Research

The insights from this study can serve as a foundation for nurse researchers to undertake more comprehensive investigations into the understanding and perspectives of school students on the topics of smoking and smokeless tobacco use, along with the associated health risks. These findings will be instrumental in aiding nurses in designing and implementing educational initiatives about tobacco use and its dangers, targeting students in both school and community environments. The suggested recommendations from this study pave the way for future research endeavors in this field.

CONCLUSION

In the context of the study, 60 high school students participated in a Prevention and Training Program (PTP) aimed at enhancing their understanding and attitudes towards smoking and smokeless tobacco use and its related health hazards. The program was designed to foster a positive shift in attitudes, thereby contributing to a reduction in health risks associated with these habits. The results from the study suggest a notable improvement in the students' attitudes, demonstrating the effectiveness of the PTP in positively influencing the perceptions of high school students towards smoking and smokeless tobacco use. This improvement indicates the potential benefits of such programs in educational settings for health promotion and prevention strategies.

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