Effectiveness of Planned Teaching Program Regarding Ill Effects of Tobacco Chewing on Knowledge Among High School Students

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Abstract

Tobacco chewing is a significant public health problem among adolescents, especially in developing countries where smokeless tobacco products are easily accessible and socially accepted. Early initiation of tobacco can lead to lifelong addiction and serious health consequences, including oral cancer, gum disease, tooth loss, and cardiovascular disorders. Inadequate knowledge regarding the harmful effects of tobacco chewing is one of the major factors contributing to its continued use among young people. School-based health education programs can play an important role in increasing awareness and promoting healthy behaviors among students. Therefore, the present study was undertaken to assess the effectiveness of a planned teaching program on knowledge regarding the ill effects of tobacco chewing among high school students.

Materials and Methods

A quasi-experimental one-group pre-test and post-test design was adopted for the study. A total of 100 high school students were selected through simple random sampling from selected schools in the Sangli-Miraj-Kupwad Municipal Corporation area, Maharashtra, India. Baseline knowledge regarding the harmful effects of tobacco chewing was assessed using a structured knowledge questionnaire. Following the pre-test assessment, a planned teaching program was conducted using charts and posters as educational aids. The post-test was administered on the eighth day after the intervention using the same questionnaire. Data were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation, and inferential statistics using the paired t-test to evaluate the effectiveness of the intervention

Results

The pre-test findings showed that 51% of students had average knowledge and 49% had poor knowledge regarding the harmful effects of tobacco chewing, while none demonstrated good knowledge. Following the planned teaching program, 59% of students achieved good knowledge and 41% had average knowledge, with no students remaining in the poor knowledge category. The mean knowledge score increased from 6.47 ± 1.37 in the pre-test to 13.78 ± 1.05 in the post-test. The difference between pre-test and post-test scores was found to be statistically significant ($p < 0.001$), indicating a substantial improvement in students' knowledge following the educational intervention.

Conclusion

The findings of the study demonstrate that the planned teaching program was effective in improving knowledge regarding the harmful effects of tobacco chewing among high school students. Educational interventions delivered in school settings can significantly enhance awareness and contribute to tobacco prevention efforts among adolescents. Regular implementation of such programs may help reduce tobacco use and promote healthier lifestyles among school-going children.

Keywords: *Tobacco Chewing, Smokeless Tobacco, Health Education, School-Based Intervention, Adolescent Health, Knowledge Assessment, Tobacco Prevention, High School Students.*

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INTRODUCTION

Background of the Study:

One of the top eight global causes of death is tobacco usage. With over seven million deaths annually, or one death every two seconds, tobacco smoking is not just one of the biggest preventable causes of mortality worldwide. Together with lost productivity, the worldwide economic cost of it is

projected to be over 1.4 trillion US dollars (WHO).Over 1.1 billion individuals worldwide smoked in 2015. Of those who are 15 years of age or older, 29.2% are reported to be current tobacco addicts, with men typically consuming more than women (WHO 2015). Presently, 14.1% of pupils (17.3% boys and 9.8% girls) and 29.2% of school staff (35.0 % men and 13.7% females) reported using tobacco products. The frequency was highest among male students in 2.80 million (10.0%) middle and high school students reported current use of tobacco products. Nearly 267 million adults (15 years and above) In India (29% of all adults are users of tobacco. Nicotine has been consumed in many forms; chewing (e.g.; khaini, pan, Gutkha) and lately nicotine Patches lozenges or chewing gums as replacement therapy [(1)] chewing tobacco is a smokeless tobacco product chewing is one of the oldest ways of consuming tobacco leaves. Tobacco contains 28 cancer causing agents (carcinogens) It is known cause of human cancer and it increases risk of developing cancer of the oral cavity [(2)]. Oral health problems strongly associated with tobacco use are leucoplakia (a lesion of the soft tissue that consists of a white patch or plaque that cannot be scraped off) and recession of the gums .Tobacco consumption causes many health problems like cancer of Lungs, larynx, oesophagus, peptic ulcer, kidney, pancreas , heart diseases like atherosclerosis heart attack , angina pectoris peripheral vascular diseases stroke allergy including even T.B also more than 1 million die each year due to tobacco in India. More than 85% lung cancer is attributing to inhalation of carcinogenic chemicals the risk of lung cancer disease as the duration of tobacco increase.

Need For Study:

Tobacco chewing poses serious health risks, including oral cancer, gum disease, and cardiovascular problems. High school students may not fully grasp these risks, making them more vulnerable to its harmful effects. Providing targeted education on the ill effects of tobacco chewing can empower students to make informed decisions about their health and avoid risky behaviours. Tobacco use is a significant public health concern globally and addressing it at the high school level can contribute to broader efforts in tobacco control and prevention.

Parents play a crucial role in shaping their children's attitude and behaviors towards tobacco use. Assessing the effectiveness of a teaching program can highlight the importance of involving parents in tobacco prevention. Schools play a critical role in creating a supportive environment for tobacco prevention efforts. Assessing the effectiveness of teaching programs can inform the development and implementation of school policies that promote tobacco-free environments and support students in making healthy choices. With limited resources available for educational programs, it's essential to assess the impact of interventions to ensure resources are allocated effectively. This study can provide insights into the cost-effectiveness of implementing such programs in high schools.

Materials and Methods

The present study employed a quantitative research approach with a quasi-experimental one-group pre-test and post-test design to evaluate the effectiveness of a planned teaching program regarding the ill effects of tobacco chewing among high school students. The study was conducted in selected high schools within the Sangli-Miraj-Kupwad Municipal Corporation area, Maharashtra, India. A total of 100 high school students were selected through simple random sampling. Students who were willing to participate, whose parents provided informed consent, who provided assent, and who could understand English, Marathi, or Hindi were included in the study. Students who were absent during the data collection period or unwilling to participate were excluded. The independent variable was the planned teaching program regarding the ill effects of tobacco chewing, while the dependent variable was the level of knowledge of high school students regarding the harmful effects of tobacco chewing. Data were collected using a self-structured knowledge questionnaire developed after an extensive review of the literature and consultation with experts in nursing and health education. The questionnaire included items related to tobacco chewing, its health hazards, associated risk factors, preventive measures, and long-term consequences. The content validity of the tool was established through expert evaluation. Reliability of the questionnaire was assessed using the test-retest method among students who were not included in the final study, and the reliability coefficient was found to be $r = 0.70$, indicating acceptable reliability and consistency of the instrument.

Prior to the main study, a pilot study was conducted among 10 adolescent students to assess the feasibility and practicality of the research methodology and data collection procedures. The pilot study demonstrated that the research process was feasible and acceptable, and no modifications were required in the research tool or study protocol. Ethical approval for the study was obtained from the Institutional Ethics Committee before the commencement of data collection. Permission to conduct the study was secured from the respective school authorities. Written informed consent was obtained from parents or guardians, and assent was obtained from the participating students. Participants were informed about the purpose of the study, assured of confidentiality and anonymity, and informed that their participation was voluntary

and that they could withdraw from the study at any stage without any penalty.

Data collection was carried out in April 2024. On 19 April 2024, the researcher visited the selected schools, established rapport with the students, and administered the pre-test using the structured knowledge questionnaire to assess baseline knowledge regarding the ill effects of tobacco chewing. Immediately after the pre-test, a planned teaching program was delivered using charts, posters, and interactive teaching methods. The educational content focused on the harmful effects of tobacco chewing, associated health risks, preventive measures, and the importance of avoiding tobacco use. The post-test was conducted on the eighth day following the intervention using the same structured knowledge questionnaire to assess changes in the students' knowledge levels.

The collected data were coded, tabulated, and analyzed using descriptive and inferential statistics. Frequency, percentage, mean, and standard deviation were used to describe the data, while the paired t-test was employed to compare pre-test and post-test knowledge scores. A p-value of less than 0.05 was considered statistically significant.

Result

The findings of the study are presented according to the study objectives and are organized into four sections. Section I describes the frequency and percentage distribution of participants according to their selected demographic characteristics. Section II presents the analysis of pre-test knowledge levels regarding the ill effects of tobacco chewing among high school students before the implementation of the planned teaching program. Section III describes the post-test knowledge levels following the educational intervention. Section IV presents the comparison of pre-test and post-test knowledge scores to determine the effectiveness of the planned teaching program regarding the ill effects of tobacco chewing among high school students.

SECTION – I
Distribution of Participants According to Demographic Characteristics
Table No. 1
Frequency and percentage distribution of samples with the selected demographical variables.

n=100

Sr. No.	Demographic Variables		Frequency	Percentage
1.	Age in years	15	20	20%
		16	80	80%
2.	Gender	Male	60	60%
		Female	40	40%
3.	Type of family	Nuclear	69	69%
		Joint	31	31%
4.	Residence	Rural	19	19%
		Urban	81	81%
5.	Do you have any pervious knowledge about tobacco?	Yes	20	20%
		No	80	80%

Table 1 presents the demographic characteristics of the study participants. Regarding age, the majority of students, 80 (80%), were 16 years old, while 20 (20%) were 15 years old. With respect to gender, 60 (60%) participants were male and 40 (40%) were female. Concerning family type, most of the students, 69 (69%), belonged to nuclear families, whereas 31 (31%) belonged to joint families. In terms of residence, a large majority of participants, 81 (81%), resided in urban areas, while 19 (19%) were from rural areas. Regarding previous knowledge about tobacco chewing, 20 (20%) students reported having prior knowledge, whereas the majority, 80 (80%), had no previous knowledge about tobacco chewing and its harmful effects.

SECTION - II
Pre-test Knowledge Regarding the Ill Effects of Tobacco Chewing
Table No. 2
Assessment of level of knowledge regarding ill effect of tobacco chewing among high school students according to their pre- test.

n=100

Level of knowledge	Frequency	Percentage
(14 to 20) Good Knowledge	0	0%
(7 to 13) Average Knowledge	51	51%
(0 to 6) Poor Knowledge	49	49%

The above table shows that, most of the students 51 (51%) had average knowledge and 49 (49%) had poor knowledge before giving planned teaching program regarding ill effect of tobacco chewing. None of the students has good knowledge regarding ill effect of tobacco chewing according to pre- test.

SECTION – III

Post-test Knowledge Regarding the Ill Effects of Tobacco Chewing

Table No. 3

Assessment of level of knowledge regarding ill effect of tobacco chewing among high school students according to their post- test.

n=100

Level of knowledge	Frequency	Percentage
(14 to 20) Good Knowledge	59	59%
(7 to 13) Average Knowledge	41	41%
(0 to 6) Poor Knowledge	0	0%

The above table shows that, most of the students 59 (59%) had good knowledge and 41 (41%) had average knowledge after giving planned teaching program regarding ill effect of tobacco chewing. None of the students had poor knowledge regarding ill effect of tobacco chewing. This reveals that after the planned teaching program level of knowledge regarding ill effect of tobacco chewing among students has increased.

SECTION- IV

Comparison of Pre-test and Post-test Knowledge Scores

Table No. 4

Effectiveness of planned teaching program on knowledge regarding ill effect of tobacco chewing among high school students.

n=100

Aspects	Mean	S.D.	d.f.	Paired t-test	p-value	Conclusion
Pre-test	6.47	1.3666	99	47.6095	0.00001 < 0.05	Significant
Post-test	13.78	1.05				

The above table shows that, the mean score of knowledge before giving planned teaching program regarding ill effect of tobacco chewing was 6.47, S.D. was 1.3666 and the mean score of knowledge after giving planned teaching program regarding ill effect of tobacco chewing was 13.78, S.D. was 1.05 and t – value was 47.6095 and p – value is 0.00001 < 0.05 (at 5 % level of significance). Since the test is statistically significant p= 0.00001 at 5 % level of significance with 99 degrees of freedom.

Discussion

The present study was conducted to assess the effectiveness of a planned teaching program regarding the ill effects of tobacco chewing among high school students. Adolescence is a critical period during which individuals may be exposed to unhealthy behaviors, including tobacco use. Therefore, increasing awareness regarding the harmful effects of tobacco chewing is essential for preventing its initiation and promoting healthy lifestyles. The findings of the study revealed that the majority of students had inadequate knowledge regarding the ill effects of tobacco chewing before the educational intervention. Following the implementation of the planned teaching program, a considerable improvement in knowledge was observed among the participants. The mean knowledge score increased from 6.47 ± 1.37 in the pre-test to 13.78 ± 1.05 in the post-test. The calculated t-value (47.61) and p-value (<0.001) indicated a statistically significant difference between pre-test and post-test knowledge scores. These findings demonstrate that the planned teaching program was effective in enhancing students' knowledge regarding the harmful effects of tobacco chewing.

The improvement in knowledge may be attributed to the structured educational content, use of visual teaching aids such as charts and posters, and active participation of students during the teaching session. Educational interventions conducted in school settings provide an effective platform for delivering health-related information and encouraging positive behavioral changes among adolescents.

The findings of the present study are consistent with previous research conducted by Jhajra et al. (2023), who assessed knowledge and attitudes regarding the harmful effects of tobacco among high school students. Their study reported that students initially had limited awareness regarding the adverse effects of tobacco use, and significant improvement in knowledge was observed following an educational intervention. Like the present study, the authors concluded that planned teaching programs are effective in increasing awareness and improving knowledge among adolescents regarding tobacco-related health risks.

Overall, the findings suggest that school-based health education programs can play a vital role in tobacco prevention efforts. Regular educational interventions may help adolescents develop informed attitudes toward tobacco use and reduce the likelihood of adopting harmful tobacco-related behaviors in the future.

Conclusion

The findings of the study demonstrate that the planned teaching program was effective in improving the knowledge of high school students regarding the ill effects of tobacco chewing. A significant increase in post-test knowledge scores compared to pre-test scores indicates that structured educational interventions can successfully enhance awareness about the health

hazards associated with tobacco use. The study highlights the importance of school-based education programs in promoting healthy behaviors and preventing tobacco use among adolescents. Regular implementation of such educational programs may contribute to increased awareness, informed decision-making, and the prevention of tobacco-related health problems among young people.

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