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Effect of Structured Teaching Programme on Knowledge Regarding Anti-Tobacco Measures among Adolescent Boys

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Abstract: ***Adolescent tobacco use and subsequent health problems are a major concern today.The increasing burden of tobacco use can be to a greater extend of being unaware of its ill effects. Therefore this study was conducted to assess the effect of structured teaching programme on knowledge regarding anti-tobacco measures among adolescent boys.Methods: Quasi-experimental research design was used for the study. Two hundred adolescent boys of class VIII and IX were selected using multistage sampling technique. Baseline variables and knowledge score of adolescent boys on anti-tobacco measures were assessed using baseline proforma and structured knowledge questionnaire. Results: The calculated paired t-test value was found to be 17.643 with a df 199, which is highly significant at p<0.001, thus indicating the effectiveness of structured teaching programme. The findings also revealed that there is a significant association between pre-test knowledge scores and type of tobacco use among the family member having the habit of tobacco use at p <0.05.Conclusion:The study found that there is improvement in the knowledge score of adolescent boys following the structured teaching programme. The study suggests that more efforts should be taken to conduct similar awareness programmes in the schools and also in the community settings.***

Keywords: anti-tobacco measures, adolescent problems, smoking, tobacco use

1. Introduction

World Health Organization (WHO) identifies adolescence as the period in human growth and development that occurs after childhood and before adulthood, from ages 10 to19. It represents one of the critical transitions in the life span of a person. Adolescence is a crucial period for the development of a number of health related behaviors. Some of these behaviors lead to the major causes of mortality and morbidity among adolescents and some other contribute to adult non-communicable diseases (NCDS). Adolescents might have a variety of reasons for adopting these unhealthy behaviors like enjoying the behavior, having formed a habit that is now difficult to break and peer pressure.[1]

Adolescent tobacco use and the subsequent health problems are a major concern today. Even though the harmful effects of tobacco chewing and smoking are widely known, many young people start smoking during adolescence as they believe that smoking will boost their social acceptability and image. Studies showed that family influences also play a major role for adolescent tobacco use. Adolescents whose parents or siblings smoke are more likely to use tobacco.[2]

Tobacco use is a serious public health problem. Tobacco is a risk factor for six of the eight leading causes of deaths in the world.[3]Adolescents are more liable for tobacco use. Studies revealed that tobacco abuse is rising in this age group in India.[4]Tobacco use is a risk factor for many of the NCDS like cardiovascular diseases, cancer, chronic lung diseases and diabetes which imposes much health burden on human life.[5]

According to WHO, tobacco use continues to be the leading global cause of preventable death which kills 5.4 million people every year. If current trend continues by 2030, the number of tobacco related deaths will increase to 8 million worldwide each year.[3]

The increasing burden of tobacco poses a particular challenge to economic and public health advances in developing countries. Premature death generally follows several years or more of excess disease and disability in tobacco users. So it is essential for the health care providers to provide information to the general public regarding the health hazards of tobacco use especially to the adolescents who are the vulnerable targets of the tobacco industry.

Objectives

1) To assess the knowledge regarding anti-tobacco measures among adolescent boys.
2) To evaluate the effect of structured teaching programme.
3) To find out the association between pre-test knowledge scores and selected baseline variables.

2. Literature Survey

A cross sectional study was conducted among 1471 students from 15 randomly selected high schools of an educational sub-district in Kerala to assess the prevalence of tobacco use and the awareness regarding health hazards of tobacco use. Results showed a prevalence of 8% of tobacco users. The awareness regarding the hazards associated with tobacco use revealed that 41.5% of the students knew about the link between oral cancer and tobacco, with the awareness being greater among females than among males.[6]

A narrative review carried out on the studies conducted on tobacco use among the school-going children in India showed a high risk of major health-related illness and several forms of cancers associated with tobacco use. This has become a persistent issue that is usually carried over to their adulthood. This indicates there is a stringent need for awareness creating oral health education programs in the school and college premises.[7]

3. Research Methodology / Approach

The research approach used for this study was quantitative approach and the research design was Quasi-experimental. The study was conducted in Selected Aided, Unaided and Government schools under the Deputy Directorate of Education, Pathanamthitta district. 200 adolescent boys who were studying in 8th& 9th standards of selected schools under Deputy Directorate of Education, Pathanamthitta district were selected using multistage sampling. Multistage sampling for the present study is as follows:

First stage: Selection of Pathanamthitta district from all the districts in Kerala.
Second stage: Stratification of schools as Government, Aided and Unaided schools.
Third stage: Simple random sampling of schools in the three strata until proportionate sample size is achieved from each strata.

One Government school, one Aided school and one Unaided school were selected out of 155 schools using lottery method so as a sample of 200 were obtained. The study was conducted among the adolescent boys who fulfilled the inclusion criteria and were selected by means of random pick from the school register till the required sample size is obtained from each strata.

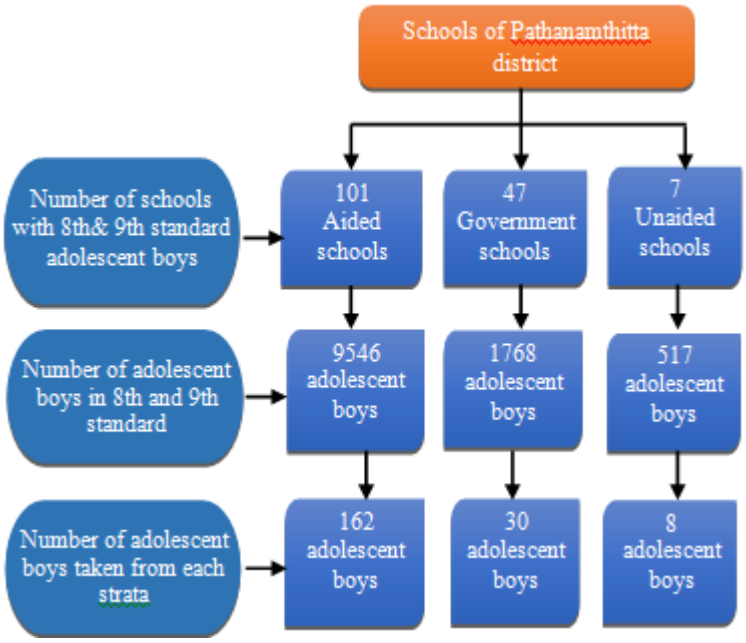

Figure 1: Schematic representation of sample selection

4. Development of Tool

Based on the objectives of the study literature were reviewed from books, journals, periodicals and unpublished dissertations. After a discussion with the subject experts and guide the initial draft of the tool was prepared. The blue print of the lesson plan was prepared and based on that the tool was constructed. Following the approval from the ethical committee for the study the tool was given to 5 experts for content validation. The tool was finalized after modifying it with the expert's suggestions.

Description of the tool

Tool 1: Baseline proforma
Baseline proforma for the present study includes age, class, type of school, place of residence, father's occupation, mother's occupation, family income per month, habit of tobacco use among family members, ever use of tobacco products, ever seen friends using tobacco and any previous knowledge about harmful effect of tobacco use.

Tool 2: Structured knowledge questionnaire
Structured knowledge questionnaire consist of 25 items to assess the knowledge of adolescent boys on anti-tobacco measures. The structured knowledge questionnaire includes 3 questions on general facts of tobacco products, 6 questions on ill effects of tobacco use and 16 questions on various tobacco control measures such as pharmacological measures, non-pharmacological measures and tobacco control policies.

Scoring: Each correct response carries a score of one and incorrect response with zero. The maximum possible score is 25. Based on the score obtained the knowledge of adolescent boys were categorized as:

- Very good: Score >19 (>76%)
- Good: Score of 14-19 (56-75%)
- Poor: Score ≤13 (≤56%)

Structured teaching programme
The structured teaching programme includes the content on general facts on tobacco usage, various tobacco products

and their ingredients, ill effects of tobacco use and the various tobacco control measures. The duration of teaching programme was 30 minutes.

Content validity

The prepared tool, lesson plan, blue print of knowledge questionnaire, along with the objectives of the study and criteria checklist were sent to 5 experts from medical and nursing fields to ensure the content validity. The initial tool consists of 15 items in the baseline proforma and 30 items in the structured knowledge questionnaire. As per the recommendations given by the subject experts, modifications were made in the baseline proforma and structured knowledge questionnaire. Experts suggested reconstruction of some questions and deletion of some questions. The tool was finalized with the suggestion given by the experts and in discussion with the guide. The final tool consists of 11 baseline variables and 25 items in the structured knowledge questionnaire.

Reliability

The tool was administered to 20 adolescent boys to calculate the reliability. Split-half method was used for estimating the reliability and r' was 0.84 which indicates that the tool is reliable

Data collection process

Data collection process involves the following:

- Permission is obtained from the Deputy Director of Education, Pathanamthitta district for conducting the study among the school children.
- Schools were selected randomly from different strata (Aided, Unaided and Government) using lottery method.
- The researcher seeks the permission from the head of the selected schools to conduct the study.
- Based on the date allotted by the school the researcher went to each school.
- The study was conducted among the adolescent boys who fulfilled the inclusion criteria and were selected by means of random pick from the school register till the required sample size is obtained from each strata.
- The researcher explained the purpose of the study to the study participants and the informed consent was obtained.
- The pre-test was conducted using baseline proforma and structured knowledge questionnaire. It took 30 minutes for them to complete it.
- Following the pre-test, the teaching programme was given for 30 minutes.
- Post-test knowledge assessment was done after 7 days.
- The data collected were analyzed by using descriptive and inferential statistics based on the objectives and hypotheses of the study.
- The baseline variables were analyzed using frequency and percentage. The pre-test and post-test scores were analyzed using frequency, percentage, mean and standard deviation.
- Kruskal-Wallis test and Mann-Whitney U test was used to find out the association between pre-test scores and selected baseline variables.
- Paired *t*-test was used to find out the mean difference in pre-test and post-test scores.

5. Results

Table 1(a): Distribution of adolescent boys according to age, class and type of school, N=200

Variables	*Frequency (f)*	*Percentage (%)*
Age in years		
10-12	2	1.0%
>12-14	167	83.5%
>14-16	31	15.5%
Class		
VIII	104	52.0
IX	96	48.0
Type of school		
Aided	162	81.0
Unaided	8	4.0
Government	30	15.0

The above table 1(a) shows that majority of the adolescents boys were in the age group of >12-14 years (83.5%), class VIII (52%) and from the aided schools (81%).

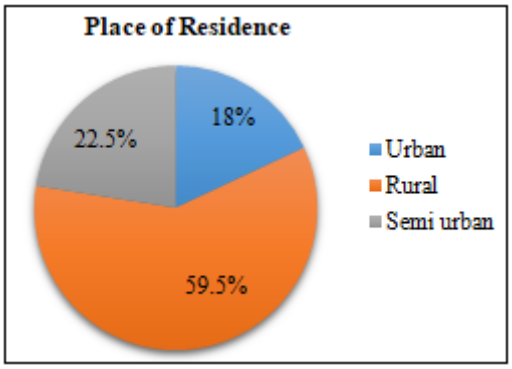

Figure 2: Distribution of adolescent boys based on place of residence, N=200

The above figure shows that majority of the adolescent boys were from rural areas (59.5%).

Table 1(b): Distribution of adolescent boys according to family income, N=200

Variables	*Frequency (f)*	*Percentage (%)*
Family income		
≤1600	16	8.0
1601 - 4809	37	18.5
4810 - 8009	48	24.0
8010 - 12019	30	15.0
12020 - 16019	17	8.5
16020 - 32049	26	13.0
≥32050	26	13.0

The above table 1(b) shows that majority of the adolescent boys were having a family income between Rs.4810-8009 (24%).

Table 1(c): Distribution of adolescent boys based on occupation of parents, N=200

Variables	*Frequency (f)*	*Percentage (%)*
Father's occupation		
Professional	3	1.5
Semiprofessional	11	5.5
Clerical, shop owner, farmer	41	20.5
Skilled worker	76	38.0
Semi skilled	19	9.5

Unskilled	41	20.5
Unemployed	9	4.5
Mother's occupation		
Professional	6	3.0
Semi professional	14	7.0
Clerical, shop owner, farmer	6	3.0
Skilled worker	11	5.5
Semi skilled	8	4.0
Unskilled	11	5.5
Unemployed	144	72.0

The above table1(c) shows that father's occupations of majority of the adolescent boys were skilled workers (38%) and majority of their mothers were unemployed (72%).

Table 1(d): Distribution of adolescent boys based on their family members having the habit of tobacco use, type of tobacco use and their relationship with the samples, N=200

Variables	*Frequency (f)*	*Percentage (%)*
Family member with tobacco use		
Yes	65	32.5
No	135	67.5
If yes, type of tobacco (n=65)		
Cigarette	38	58.5
Bidi	20	30.8
Betel chewing	5	7.7
Hans	1	1.5
Pan masala	1	1.5
If yes, relationship with the sample (n=65)		
Father	47	72.3
Grand father	13	20
Brother	1	1.5
Uncle	2	3.1
Father and brother	2	3.1

The above table 1(d) shows that 32.5% of the family members of the adolescent boys were having the habit of tobacco use and among the users majority of them uses cigarette (58.5%) and were the fathers (72.3%).

Table 1(e): Distribution of adolescent boys based on ever use of tobacco products, type of tobacco products used and friends using tobacco, N=200

Variables	*Frequency (f)*	*Percentage (%)*
Ever use of tobacco products		
Yes	3	1.5
No	197	98.5
If yes, type of tobacco products used (n=3)		
Cigarette	3	100
Friends using tobacco		
Yes	38	19.0
No	162	81.0

The above table 1(e) shows that, 1.5% of the adolescent boys were ever used any tobacco products, among the ever users all of them used cigarette and 19% of the friends of the samples were having the habit of tobacco use.

Table 1(f): Distribution of adolescent boys based on previous knowledge on harmful effect of tobacco use and the source of previous knowledge, N=200

Variables	Frequency (f)	Percentage (%)
Previous knowledge on harmful effect of tobacco use		
Yes	108	54.0
No	92	46.0
Source of information (n=108)		
Awareness class	71	65.7
Teachers	4	3.7
TV	23	21.3
Scouts	1	0.9
Studied in biology	7	6.5
Family	2	1.9

The above table 1(f) shows that majority of the adolescent boys were having previous knowledge on harmful effect of tobacco use (54%). Those who had the previous knowledge received the information from awareness classes (65.7%).

N=200

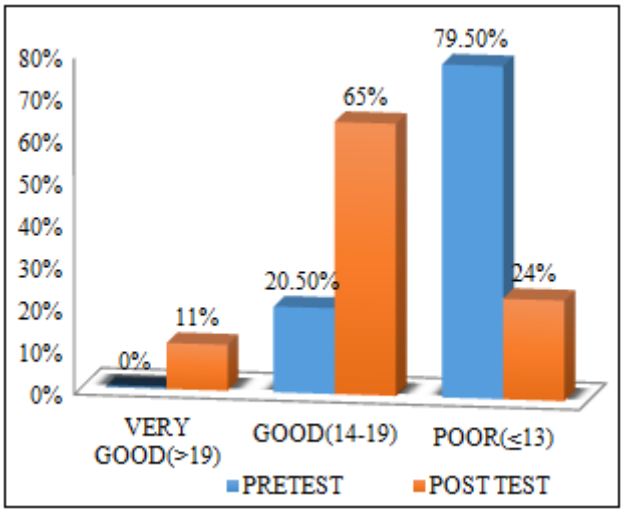

Figure 3: Comparison of knowledge score of adolescent boys based on pre-test and post-test scores

The above figure2 shows that during the pre-test 79.50% of the samples had poor knowledge, 20.50% of them had good knowledge and none of them had very good knowledge. After the implementation of the structured teaching programme, the post-test showed that 24% of them had poor knowledge, 65% had good knowledge and 11% had very good knowledge.

Table 2: Section wise comparison of pre - test and post - test knowledge scores on anti-tobacco measures
N=200

Area of knowledge	Maximum score	Mean		Mean Percentage		Standard Deviation	
		Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
General facts	3	1.72	2.46	57.33%	82%	0.885	0.671
Ill effects of tobacco use	6	2.89	3.88	48.17%	64.67%	0.939	1.093
Tobacco control measures	16	6.50	9.47	40.63%	59.19%	2.295	2.544

The above table 2 shows that majority of the adolescent boys were having more knowledge score on general facts about tobacco on both pre-test (57.33%) and post-test (82%).

Table 3 (a): Comparison of pre-test and post-test mean knowledge of adolescent boys using *t*-test, N=200

Category	Knowledge score			t-value	df	p value
	Mean	Mean Difference	Standard deviation			
Pre Test	11.12	4.69	2.927	17.643	199	0.001**
Post Test	15.81		3.266			

**Highly significant (p≤ 0.001)

The above table 3(a) shows that the knowledge of adolescent boys on anti-tobacco measures is having statistically significant difference in comparison of pre-test and post-test.

Table 3 (b): Section wise comparison of pre-test and post-test mean knowledge of adolescent boys using *t*-test N=200

Area of knowledge	Knowledge score				*t*-value	df	p value
	Mean		Standard deviation				
	Pre-test	Post-test	Pre-test	Post-test			
General facts	1.73	2.46	0.885	0.671	9.607	199	0.001**
Ill effects of tobacco use	2.89	3.88	0.939	1.093	10.343	199	0.001**
Tobacco control measures	6.50	9.47	2.295	2.544	13.615	199	0.001**

**Highly significant (p< 0.001)

The above table 3(b) shows that there is statistically significant difference in the section wise comparison of pre-test and post-test knowledge of adolescent boys on anti-tobacco measures.

Table 4(a): Association between pre-test knowledge scores with selected baseline variable like age and place of residence.
Kruskal-Wallis test, N=200

Variables	Good f	Poor f	Z value	p value
Age				
10-12 years	0	2	0.597	0.742
>12-14 years	34	133		
>14-16 years	7	24		
Place of residence				
Urban	10	26	1.465	0.481
Rural	22	97		
Semi urban	9	36		

*Level of significance at p< 0.05

The above table 4(a) shows that there is no association between pre-test knowledge scores with age and place of residence at p<0.05

Table 4(b): Association between pre-test knowledge scores and friends using tobacco Mann-Whitney U test, N=200

Variables	Good f	Poor f	U value	p value
Friends using tobacco				
Yes	5	33	-1.243	0.214
No	36	126		

*Level of significance at p< 0.05

The above table 4(b) shows that there is no association between pre-test knowledge scores and friends using tobacco at p<0.05.

Table 4 (c): Association between pre-test knowledge scores with selected baseline variables like relationship of the sample with the family members having the habit of tobacco use and type of tobacco use among the family member
Kruskal-Wallis test, n=65

Variable	*Good f*	*Poor f*	*Z value*	*p value*
Relationship of the sample with the family member having the habit of tobacco use				
Father	7	40	2.358	0.670
Grand father	2	11		
Brother	0	1		
Uncle	0	2		
Father and brother	1	1		
Type of tobacco use among the family member				
Cigarette	2	36	19.414	0.001*
Bidi	4	16		
Betel chewing	4	1		
Hans	0	1		
Pan masala	0	1		

*Level of significance at p< 0.05

The above table 4(c) shows that there is a significant association between pre-test knowledge scores with type of tobacco use among the family members having the habit of tobacco use at p< 0.05.

Table 4(d): Association between pre-test knowledge scores and source of previous knowledge on harmful effects of tobacco use, Kruskal-Wallis test, n=108

Variables	Good f	Poor f	Z value	p value
Source of previous knowledge on harmful effects of tobacco use				
Awareness class	16	55	**3.090**	**0.686**
Teachers	1	3		
TV	6	17		
Scouts	0	1		
Studied in biology	0	7		
Family	0	2		

*Level of significance at p< 0.05

The above table 4(d) shows that there is no association between pre-test knowledge scores with source of previous knowledge on harmful effects of tobacco use at p<0.05.

6. Discussion

The comparison of overall mean of pre-test and post-test knowledge score shows that overall mean score in pre-test is 11.12 whereas in post-test the overall mean score is 15.81 revealing a mean difference of 4.69 which shows that the

knowledge score of adolescent boys have increased on the post-test when compared to the pre-test scores. The standard deviation of the pretest knowledge score was 2.927 and that of post-test was 3.266. The calculated paired *t*-test value was found to be 17.643 and p value < 0.001 with a dfof 199, which shows that it is highly significant.

Therefore the null hypothesis was rejected at p<0.001 and thus the alternative hypotheses H1 can be accepted. Hence it was found that a statistically significant difference existed between the pre-test and post-test knowledge scores regarding anti-tobacco measures among adolescent boys.

A similar study was done to assess the effectiveness of structured teaching programme on knowledge regarding ill effects of smoking among adolescents boys in selected college, Hyderabad. A quasi experimental one group pre-test post-test design was undertaken for the study. Fifty adolescents boys were selected by non-probability purposive sampling and data were collected using structured knowledge questionnaire. Planned teaching programme was given to the students on the same day following pre-test and post-test was conducted after 7 days. The study findings shows that during the pre-test 91.66 % students had inadequate and 8.33 % had moderate knowledge, whereas with post-test 33.33 % students had adequate, 56.66 % had moderate and 10 % had inadequate knowledge scores. Pre-test mean & standard deviation scores were 30.54 & 11.235 and the post-test mean & standard deviation scores were 68.6 & 12.068, which shows an improvement in knowledge score following the teaching programme. The obtained *t*-value was 16.948 at p< 0.001 which indicates a significant difference in pre-test and post-test knowledge scores.[8]

7. Conclusion

The study was aimed to assess the effect of structured teaching programme on knowledge regarding anti-tobacco measures among adolescent boys of selected schools in Pathanamthitta district. The study found that there is improvement in the knowledge score of adolescent boys following the structured teaching programme. The study suggests that more efforts should be taken to conduct similar awareness programmes in the schools and also in the community settings.

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