

# Evaluating the Efficacy of a Planned Teaching Program on Enhancing Knowledge about the Adverse Effects of Alcoholism among Adolescents (13–19 years) in a Senior Secondary School in Bhiwani: A Quasi-Experimental Research Study

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## Abstract

**Background:** Health is a precious gift bestowed upon us by God, and it is our responsibility to safeguard it for a wholesome life. Personal choices and behaviors play a pivotal role in determining one's health, emphasizing that well-being is often a result of controllable individual actions rather than mere chance. The term 'alcohol' carries varied meanings within our society and has been in common use since ancient times. The European Charter on Alcohol by the World Health Organization asserts the right of all children and adolescents to grow up in an environment shielded from the adverse effects of alcohol dependence, minimizing the promotion of alcoholic beverages as much as possible. According to Erikson's theory, adolescents find themselves in the identity versus role confusion phase, marked by the challenges of navigating through their teenage years with evolving thoughts and experiences. Lacking full maturity, adolescents may be unaware of proper conduct and are susceptible to veering off the right path. Engaging in risky behaviors without understanding the long-term health implications is common among young individuals. The focus of the current study is to evaluate the effectiveness of a planned teaching program on enhancing knowledge about the adverse effects of alcoholism among adolescents aged 13 to 19 years. **Objectives of the study:** (1) Evaluate adolescents' understanding of the negative consequences of alcoholism. (2) Evaluate the impact of a structured teaching program on adolescents' knowledge about the adverse effects of alcoholism. (3) Examine the correlation between pre-test knowledge scores and selected demographic variables among the participants. **Materials and Methods:** The study employed a quantitative

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research approach and utilized a pre-experimental design with a single-group pre- and post-test. Samples were selected through convenience sampling. The research aimed to evaluate the effectiveness of a planned teaching program on enhancing knowledge about the adverse effects of alcoholism among adolescents aged 13 to 19 years. Data analysis involved both descriptive statistics (mean, mean difference, and standard deviation) and inferential statistics (paired t-test). The study findings revealed that among 100 adolescents pre-tested on a structured knowledge questionnaire, the majority (18%) had poor knowledge, 65% had average knowledge, and 17% had adequate knowledge regarding the adverse effects of alcoholism. Whereas in the post-test, 3% adolescents had poor knowledge, 28% had average

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knowledge, and 69% had adequate knowledge regarding the adverse effects of alcoholism. **Conclusion:** Based on the results of the data analysis, it can be inferred that the structured teaching program on alcoholism and its adverse effects proved to be an effective approach to imparting sufficient knowledge to adolescents.

**Keywords:** Adolescents, alcoholism and its adverse effect, knowledge, planned teaching program

## INTRODUCTION

Alcohol has an extensive history of both utilization and abuse throughout documented human history. Historical records from sources such as the Bible, Egyptian writings, and Babylonian texts document instances of alcohol misuse and dependency. Various ancient cultures either revered alcohol or denounced its addictive nature. The negative effects of excessive alcohol consumption and intoxication were acknowledged as problematic thousands of years ago. Nevertheless, there was not a well-established medical understanding of habitual drunkenness and its associated adverse consequences during that historical period [1].

The Indian Constitution underscores the effort to enforce the prohibition of the production of intoxicating drinks and drugs except for medical purposes, recognizing them as harmful to health. Substance abuse, including alcohol and tobacco, presents a significant social issue in India, with approximately 25% of current users classified as dependent. Among the current users, the proportion of dependency is 17% for alcohol, 26% for cannabis, and 22% for opiates [2].

Alcoholism, also referred to as alcohol dependence, is a debilitating and addictive disorder marked by uncontrollable and compulsive alcohol consumption, despite its detrimental impact on the individual's health, relationships, and social standing. Similar to other substance addictions, alcoholism is recognized as a treatable medical condition. According to contemporary perspectives, alcoholism is classified as a disease, with alcohol identified as a "disease agent" causing both acute and chronic effects such as intoxication, liver cirrhosis, toxic psychosis, gastritis, pancreatitis, cardiomyopathy, peripheral neuropathy, and gastrointestinal cancers. Furthermore, alcoholism significantly contributes to issues such as suicide, automobile accidents, injuries, violence-related deaths, family disorganization, crime, and diminished productivity within society [3].

## MATERIALS AND METHODS

This study adopted one group pre-test post-test pre-experimental design. Data collection was from March 2023 to April 2023. The sample for the study was selected from a government senior secondary school, Bhiwani. 100 adolescents studying in the school with age group of 13–19 years were selected through a convenient sampling technique. In this study, data collection was carried out using a self-administered structured questionnaire.

*Data collection tool and procedure:* Data will be gathered by distributing the questionnaires among adolescents. The questionnaire will be converted into Hindi and English for easy interpretation by participants. Analysis of the data will involve both descriptive and inferential statistics, utilizing statistical tools like the Statistical Package for Social Science (SPSS). Each question in both questionnaires is associated with a set of responses, where a correct answer is scored as 1 and an incorrect answer is scored as 0.

The selection of the study setting was done conveniently, and the principal investigator actively participated in the data collection process. The subjects were informed that their participation was voluntary, and a participant information sheet was provided before completing the questionnaire. After obtaining ethical approval and permission from the concerned authorities, the participants who were able to read and write in Hindi or English were contacted for inclusion in the study. The

participation information sheet with the details of the study, informed consent forms, and structured interview questionnaire forms was distributed to all the subjects. The subjects were encouraged to fill out the forms by themselves, and any difficulty in filling out the form or understanding any question was clarified by the principal investigator [4–7].

### STATISTICAL ANALYSIS

Statistical analysis employed IBM’s Statistical Package for the Social Sciences (SPSS for Windows version 20.0 software). A significance level of 0.05 ( $p < 0.05$ ) was maintained consistently in the study. Continuous variables were summarized using mean and standard deviations, while categorical variables were presented through frequency followed by percentage. Pearson’s correlation coefficient was computed to assess the relationships between the parameters.

### RESULTS

Among 100 subjects, the majority of subjects (50%) belong to the age group of 16–17 years, were adolescents, and 60 (60%) of the subjects were male. The majority {60 (60%)} of the educational status of father belongs to graduates. Education status of mother was as follows: 30 (30%) are illiterate, 30 (30%) had primary education and 30 (30%) had secondary education. The majority (80%) of study subjects belong to the Hindu religion, and 70 (70%) belong to the nuclear families. The majority of study subjects have a monthly income of ₹ 10,000. The majority (60%) of subjects lived in rural residential areas, and about 70 percent were vegetarians.

In the pre-test on the structured knowledge questionnaire, the majority of adolescents aged 0–11 (18%) had poor knowledge, those aged 12–18 (65%) had average knowledge, and those aged 19–30 (17%) had adequate knowledge regarding the adverse effects of alcoholism. Whereas in the post-test, the majority of adolescents aged 3% had poor knowledge, 28% had average knowledge, and 69% had adequate knowledge regarding the adverse effects of alcoholism. The effectiveness of the planned teaching program on knowledge was assessed using a paired t-test, comparing between the mean and standard deviation of the pre-test and post-test scores. The pre-test mean score was 15.04 and the standard deviation was 3.62, and the post-test mean score was 21.82 and the standard deviation was 5.43. The mean difference was 6.78. “t” value was 14.189. The “P” value was 0.001, which was significant at 0.05 levels. This indicates that the structured teaching program successfully enhanced the knowledge level regarding the adverse effects of alcoholism among adolescents (Tables 1–4).

**Table 1.** The frequency and percentage distribution of sociodemographic variables of the samples.

S.N.	Sample characteristics	Frequency	Percentage
1.	<i>Age of child (in years)</i>		
	(a) 13–15	20	20%
	(b) 16–17	50	50%
	(c) 18–19	30	30%
2.	<i>Gender</i>		
	(a) Male	60	60%
	(b) Female	40	40%
3.	<i>Educational status of father</i>		
	(a) Illiterate	0	0%
	(b) Primary education	30	30%
	(c) Secondary education	60	60%
	(d) Graduate	10	10%
4.	<i>Educational status of mother</i>		
	(a) Illiterate	30	30%
	(b) Primary education	30	30%
	(c) Secondary education	30	30%

S.N.	Sample characteristics	Frequency	Percentage
	(d) Graduate/others	10	10%
5.	<i>Occupation of the father</i>		
	(a) Homemaker	50	50%
	(b) Self-employed	40	40%
	(c) Government employee	10	10%
	(d) Private employee	0	0%
6.	<i>Occupation of the mother</i>		
	(a) Homemaker	90	90%
	(b) Self-employed	10	10%
	(c) Government employee	0	0%
	(d) Private employee	0	0%
7.	<i>Religion</i>		
	(a) Hindu	80	80%
	(b) Muslim	20	20%
	(c) Other	0	0%
8.	<i>Type of family</i>		
	(a) Nuclear family	70	70%
	(b) Joint family	30	30%
	(c) Extended family	0	0
	(d) Single parent family	0	0
9.	<i>Family monthly income (₹)</i>		
	(a) 10, 000/	50	50%
	(b) 10, 001–20,000/	20	20%
	(c) 20, 001–30,000/	10	10%
	(d) More than 30,001/	20	20%
10.	<i>Residence</i>		
	(a) Urban	60	60%
	(b) Rural	40	40%
	(c) Slum	0	0%
11.	<i>Dietary pattern</i>		
	(a) Vegetarian	70	70%
	(b) Non-vegetarian	30	30%

**Table 2.** The pre- and post-test knowledge among adolescents regarding the adverse effects of alcoholism (N = 100).

Level of knowledge	Pre-test		Post-test	
	Frequency	Percentage %	Frequency	Percentage %
Poor knowledge	18	18%	3	3%
Average knowledge	65	65%	28	28%
Adequate knowledge	17	17%	69	69%

**Table 3.** Comparison of mean between pre- and post-intervention level of knowledge among adolescents regarding the adverse effects of alcoholism (N = 100).

Perceived knowledge score	Mean	Standard deviation	Mean difference	paired 't' test	P-value
Pre-test score	15.04	3.629063	6.78	14.189 (df = 99)	0.001
Post-test score	21.82	5.431632			

\*significant at P<0.05

**Table 4.** Association of the pre-test knowledge levels scores with selected socio-demographic variables of samples (N = 100).

Sociodemographic variables		Poor	Average	Adequate	Chi-test	P-value	df	Result
Age (in years)	13–15	4	15	1	4.322	0.364	4	NS
	16–17	10	32	8				
	18–19	4	18	8				
Gender	Male	8	40	12	2.673 <sup>a</sup>	0.263	2	NS
	Female	10	25	5				
Educational status of father	Illiterate				5.349	0.253	4	NS
	Primary education	4	22	4				
	Secondary education	13	38	9				
	Graduate/others	1	5	4				
Educational status of mother	Illiterate	7	16	7	4.913	0.555	6	NS
	Primary education	5	20	5				
	Secondary education	3	23	4				
	Graduate/others	3	6	1				
Occupation status of father	Labourer	11	32	7	4.978	0.290	4	NS
	Self-employed	6	28	6				
	Government employee	1	5	4				
	Private employee							
Occupation status of mother	Homemaker	15	59	16	1.252	0.535	2	NS
	Self-employed	3	6	1				
	Government employee							
	Private employee							
Religion	Hindu	13	53	14	0.836	0.659	2	NS
	Muslim	5	12	3				
	Others							
Type of family	Nuclear family	14	42	14	2.51	0.266	2	NS
	Joint family	4	23	3				
	Extended family							
	Single parent family							
Family monthly income (in ₹)	10,000/	11	32	7	2.843	0.828	6	NS
	10,001–20,000/	3	12	5				
	20,001–30,000/	1	8	1				
	More than 30,001/	3	13	4				
Residence	Urban	10	41	9	0.757	0.685	2	NS
	Rural	8	24	8				
	Slum							
Dietary pattern	Vegetarian	12	48	10	1.564	0.457	2	NS
	Non-vegetarian	6	17	7				

\*Significant at P<0.05, NS: Non-significant

## DISCUSSION

In the pre-test on structured knowledge questionnaire, a significant number of adolescents aged 0–11 (18%) had poor knowledge, 12–18 (65%) had average knowledge, and 19–30 (17%) had adequate knowledge regarding adverse effects of alcoholism. Whereas in the post-test, a significant number of adolescents aged 0–11 (3%) had poor knowledge, those aged 12–18 (28%) had average knowledge, and those aged 19–30 (69%) had adequate knowledge regarding the adverse effects of alcoholism. The pre-test mean score was 15.04 and the standard deviation was 3.62 and post-test mean score was 21.82 and the standard deviation was 5.43.

The findings of the current study are consistent with a previous investigation conducted by Mrs. Dipali U Dumbre, which aimed to evaluate the effectiveness of planned health education on knowledge concerning the adverse effects of alcoholism among adolescents from selected school, chosen through convenient sampling. A self-administered questionnaire was utilized in Mrs. Dumbre's study. The results revealed that in the pre-test, 66.7% of adolescents had average knowledge about the ill effects of alcoholism, 15% exhibited poor knowledge, and 18.3% possessed good knowledge. In the post-test, 60% demonstrated good knowledge, and 40% displayed average knowledge regarding the ill effects of alcoholism. This suggests a significant enhancement in adolescents' knowledge about the adverse effects of alcoholism following planned health education. The researcher employed a paired t-test to compare pre-test and post-test knowledge scores among adolescents. The average knowledge score in pre-test was 16.1 which increased to 21.7 in post-test. The T-value for this comparison was 20 with 59 degrees of freedom. With a corresponding p-value of 0.000, which is below the conventional threshold of 0.05, the null hypothesis is rejected. This indicates that the planned health education significantly contributed to the improvement of adolescents' knowledge concerning the adverse effects of alcoholism. In this study, the data presented from an out-of-100 study sample. A chi-square test was utilized to examine the connection between socio-demographic variables and the pre-test knowledge scores of adolescents. The significance level, denoted by the p-value, was set at 0.05, where values greater than 0.05 indicate non-significance. The study revealed no significant association between demographic variables, including age, gender, religion, education, occupation, monthly income, type of family, residence, dietary pattern, and the pre-test knowledge scores regarding the adverse effects of alcoholism among adolescents in Govt. Sr. Sec. School Bhiwani [8–10].

### Limitations of the Study

The study was conducted in a single setting, the Government Senior Secondary School in Bhiwani. The scope of the study was confined to the school environment exclusively. Additionally, the study was restricted to a one-month duration, recognizing that knowledge improvement typically occurs gradually. A small sample size of only 13–19 years old adolescents was included in the study.

### CONCLUSION

Conclusions derived from the study include the following:

- Students possess sufficient knowledge concerning the adverse effects of alcoholism among adolescents.
- The planned teaching program successfully enhanced adolescents' knowledge regarding the adverse effects of alcoholism.
- No significant correlation was observed between pre-test knowledge scores and selected socio-demographic variables.

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