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INHALANT ABUSE AMONG PRE UNIVERSITY COLLEGE STUDENTS, MANGALURU: A DESCRIPTIVE STUDY

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Abstract

Introduction: Cheap price, readily available, peer pressure and curiosity are some of the reasons to misuse the inhalants. The inhalant abuse is a major issue that affects the health and future of the youth but this issue is not considered as serious and that can be due to the lack of knowledge about the social effects and health problems caused by this behaviour or due to the imbalanced attitude towards this habit.

Aim: The study aims to find the level of knowledge and attitude on inhalant abuse among pre university college students.

Materials and Methods: Quantitative non-experimental descriptive study conducted among pre-university students of MMDRS PU College, Mangaluru on December 2021. 120 students were selected by non-probability purposive sampling technique. The data was stockpiled by using inhalant abuse knowledge test questionnaire and inhalant abuse attitude scale.

Result: It was found that majority 54(45.0%) of the students had good knowledge whereas, 45(37.5%) of them had very good knowledge, 14(11.7%) of them had average knowledge and 7(5.8%) of them had poor knowledge regarding inhalant abuse. Most of the 120 (100%) of the students were shown positive attitude towards inhalant abuse. Study showed positive correlation between knowledge and attitude ($r = 0.243$, $n = 120$, $p>0.05$). There is a significant association between level of knowledge and demographic variable such as age, religion and family income.

Conclusion: Students have a positive attitude towards inhalant abuse as evidenced by the 100% positive response rate in the surveyed sample. The results highlight the need for increased awareness and education regarding the risks and dangers associated with inhalant abuse among students.

Key words: Knowledge, Attitude, Inhalant abuse, Pre university college students.

INTRODUCTION

Inhalants are easily bought or found in the home or workplace such as gasoline, spray paints, markers, glues, whitener and cleaning fluids. They contain dangerous substances which alters mind when inhaled. These substances are used for getting high and mostly used by young kids and teens. The one who use inhalants breathe them through nose or mouth. Slurred or distorted speech, lack of coordination, euphoria, dizziness, liver and kidney damage, hearing loss, bone marrow damage, loss of coordination and limb spasms, delayed behavioural development and brain damage are the effects on health resulting prolong use of inhalants.1

Understanding the extent of inhalant abuse among pre-university students is crucial in addressing this public health concern. Student's awareness of inhalants and their associated risks is a pivotal factor in preventing inhalant abuse. Adolescents may have limited knowledge of the potential dangers associated with these substances, including their chemical composition and the adverse effects they can produce. Petrol inhalant abuse is become common among citizens of Australia. Sniffing petrol is lethal to health and leads to death. It depresses central nervous system as it contains lead which leads to hallucinations. The effects of smelling petrol can easily affect the brain as the fumes travel in less than a minute's time and the effect does not take more than 5 minutes to act upon. This leads to the slowing of reactions from the brain and this can be hazardous to life. The effects of sniffing petrol can last up to an hour. There have a been a few incidences around the world where people have smelled petrol and exercised after have died due to lack of oxygen reaching the brain.2

National institute of drug abuse reported use of inhalants in 2021 in US that is, among people aged 12 or older about 2.2 million reported using inhalants in the past 12 months and 335,000 of them had an inhalant use disorder in the past 12 months. In 2022, an estimated 3.6% of 8th graders, 2.4% of 10th graders, and 1.8% of 12th graders reported using inhalants in the past 12 months.3 According to National Institute of Social Defence, 1.18 crore (1.08%) are current users of sedatives (non-medical use) and 1.7% of children and adolescents are inhalant users as compared to adults of 0.58%. Nearly 18 lakh children need help for inhalant use.4 According to Gasoline case report study inhalant use in India has been a problem for the last several decades. Use of inhalants such as volatile petroleum products, correcting fluids and adhesives has been reported in India.5

A descriptive study was conducted to identify the inhalant abuse and dependence among adolescents in 2000-2001 in United States. The study was conducted among the adolescents between 12- 17 years of age and assessed by using DSM-IV criteria and the method to find the characteristics associated with progression to inhalant abuse and dependence is Multinomial logistic regression. Computer assisted self-interviewing method is used to find the response of sample. The result revealed that 9% reported that they haven't use any inhalants in their life and 70% started their first use before the age of 15 years and 4% past year inhalant users met DSM-IV criteria. There is no association between gender, age, race/ethnicity and family income with inhalant abuse. The study concluded that inhalant abuse depends on first, weekly and multiple use of inhalant.6

According to the Canadian addiction survey in the year of 2004 around 1.3+/-0.3% Canadians around 15 years of age and older reported life time use of inhalants. The legal availability and inexpensiveness are the main reasons for abuse among the young children. This survey showed that the number of inhalant abusers increasing day by day. If this continues it will lead to severe problem to the individuals and to the growth and welfare of the nation. It badly affects the physical and mental health of the human being. The truth is that the people are still not aware about the harmful effect of inhalant abuse.

According to the survey conducted by the United States of America in the year of 2007 1.1% of youth aged 12-13 years of age had used inhalants in the past month. Around 10.7 % reported inhalant as their first drug of abuse. This survey concludes that the adolescent’s starts inhalants as their first choice and gradually it leads to drug abusers and they will burden to their family and society.7

A US survey, combining data from 2002 to 2006, found that an annual average of 593,000 teens aged 12 to 17 had used inhalants for the first time. One state in the US averaged more than 3,800 emergency room visits and 450 hospitalizations a year due to inhalant poisonings, according to statistics released in 2008. By the time students in the US reach the eighth grade; one in five will have used inhalants. In 2007, inhalants were the substance most frequently abused by youth aged 12 or 13. 22% of inhalant abusers who died of Sudden Sniffing Death Syndrome had no history of previous inhalant abuse- they were first- time users. In the Pakistani city of Karachi there are an estimated 14,000 street kids, of whom 80% to 90% sniff glue or solvents. In the US, the 2006

National Survey on Drug Use and Health found that 1.1 million youths aged 12 to 17 had used inhalants in the past year.8

Investigating the level of awareness among pre-university students can shed light on the effectiveness of educational initiatives and the need for further interventions. The attitudes of pre-university students towards inhalants play a pivotal role in determining their susceptibility to abuse. Positive attitudes or misconceptions about inhalant substances can contribute to experimentation and continued use. Conversely, negative attitudes and awareness of the risks associated with inhalants can act as protective factors. Therefore, assessing the attitudes of pre-university students towards inhalants is critical in designing targeted prevention and intervention programs. This research endeavours to delve into the world of inhalant abuse among pre-university students, unravelling their knowledge, attitudes, and perceptions surrounding these substances. By examining these aspects comprehensively, we aim to contribute valuable insights to the development of evidence-based strategies and interventions aimed at preventing inhalant abuse and safeguarding the health and well-being of our youth.

MATERIALS AND METHODS

Study Design and Setting

This was a quantitative non-experimental descriptive study conducted among college students of MMDRS PU College, Deralakatte, Mangaluru. The data was collected in the month of December 2021 through offline method.

Study Participants and Sampling

In this study 15-20 years of Pre university students were selected by non-probability purposive sampling technique. The Exclusion criteria stated were students those not available during the period of data collection, not willing to participate in the study and the one who already undergone an awareness programme on inhalant abuse. Based on a preliminary study by Brogen Singh Akoijam and team in Northeast India, the inhalant abuse among school children showed the proportion of usage of inhalant abuse among younger population with age below 18 found to be 18.8% (0.188). Considering level of significance at 5% the study prevision will be at 7%. Sample size for the present study will be 120 college students.

Data Collection Tool and Technique

The data collection tools used for the study were 3 and they were Part-A Demographic data which consist of age, gender, religion, course, family income, any habits, family history of substance abuse and family history of inhalant abuse. Part-B Inhalant abuse knowledge test questionnaire which consist of 15 items and it includes introduction, meaning, types, risk factors and methods, effects, diagnosis and management and prevention of inhalant abuse. Interpretation of score Very good knowledge a score of 12-15, Good knowledge a score of 8-11, Average knowledge a score of 4-7 and Poor knowledge a score of less than 4. Part-C Inhalant abuse attitude scale which consists of 20 items and it includes concepts/belief, effects, danger and complications, benefits,

management, and prevention of inhalant abuse. Each item has 5 alternatives such as strongly agree, agree, uncertain, disagree, and strongly disagree. Interpretation of score Negative attitude a score of 1-50 and Positive attitude a score of 50-100. In order to obtain validity of the tool, the draft of the tool was submitted to the five experts from the field of medical surgical nursing, child health nursing, mental health nursing, community health nursing and obstetrics and gynaecology. Based on their suggestions and recommendations, the tools were modified. The tool was pre-tested by administering in 6 samples and it was found to be clear and feasible. The stability of the inhalant abuse knowledge test questionnaire was computed by using split half method employing spearman formula. Cronbach's alpha was used to assess the reliability of the inhalant abuse attitude scale. The Karl Pearson's coefficient correlation was established and "r" value was calculated in which inhalant abuse attitude scale r =0.857 and inhalant abuse knowledge test questionnaire r = 0.76 which is greater than 0.7 and tools were found to be reliable. A pilot study was conducted with 12 samples to know the feasibility. No changes were made after the pilot study. The data was analyzed by using by descriptive and inferential statistics using IBM SPSS 23. A chi-square test at a 5% level of significance was used for statistical analysis. A p-value of <0.05 considered to be statistically significant.

Ethical consideration

Written approval for the study was obtained from the ethical committee of the university (Approval number: YEC2/785 Dated (18/12/2021) and from the authority of the pre-university. Consent from all the students participants were obtained before data collection.

RESULTS

Section I: Description of demographic characteristics of pre-university college students

This section provides information about the Table-1 the characteristics of 120 pre-university college students in terms of frequency and percentage. They are described under the headings of age, gender, religion, course, family income, any habits, family history of substance abuse and family history of inhalant abuse.

Table 1: Frequency and percentage distribution of sample characteristics

n=148

n=148

Sl. No.	Variables	Frequency	Percentage
1.	Age (in years)		
	a. 14-15	3	2.5
	b. 16-17	115	95.8
	c. 18-19	2	1.7
	d. Above 19	-	-
2.	Gender		

	a. Male	-	-
	b. Female	120	100
	c. Other	-	-
3.	Religion		
	a. Hindu	59	49.2
	b. Christian	33	27.5
	c. Muslim	27	22.5
	d. Other	1	8
4.	Year of course		
	a. 1st year PUC	62	51.7
	b. 2nd year PUC	58	48.3
5.	Course		
	a. Science	120	100
	b. Commerce	-	-
	c. Arts	-	-
6.	Family income (per month)		
	a. Less than Rs.10000	57	47.5
	b. Rs.10001-Rs.20000	41	34.2
	c. Rs.20001-Rs.30000	19	15.8
	d. More than Rs.30001	3	2.5
7.	Presence of any habits:		
	a. Nil	120	100
	b. Smoking	-	-
	c. Alcoholism	-	-
	d. Tobacco chewing	-	-
	e. If any other specify	-	-
8.	Family history of substance abuse		
	a. Yes	-	-

Table 1 shows the output of the present study revealed that most of the students, 115 (95.8%) belonged to the age 16-17 years and were female 120 (100%). Majority of them 59(49.2%) were belonged to Hindu religion and most of them 62(51.7%) were in 1st year PUC. Most of them 120 (100%) were science students and majority 57 (47.5%) of them had the monthly income less than Rs 10000. Majority of them, 120 (100%) didn't have any bad habits. Most students120 (100%) didn't had any family history of substance abuse and majority of them 120 (100%) not had any family history of inhalant abuse. Most of the students 120 (100%) didn't have any previous information on inhalants and its sources.

Section 2: Level of knowledge of pre university college students regarding inhalant abuse

Table 2: Level of knowledge among pre-university college students regarding inhalant abuse

n=120

Level of knowledge	Score	Frequency	Percentage	**n=120**
Very good	12-15	45	37.5	
Good	**8-11**	**54**	**45.0**	

Average	4-7	14	11.7
Poor	Less than 4	7	5.8

Data presented in Table 2 indicates that most of the students that is 54 (45.0%) of them had good knowledge whereas, 45 (37.5%) of them had very good knowledge, 14(11.7%) of them had average knowledge and 7(5.8%) of them had poor knowledge regarding inhalant abuse. This indicates pre university college students have good knowledge regarding inhalant abuse.

Table 3: Knowledge score Mean, Median and SD of pre-university college students on inhalant abuse

n=120

Variable	Mean	Median	SD	Mean%
Knowledge	10.16	10.0	3.173	67.73

Maximum knowledge score: 15

Section 3: Description of level of attitude of pre-university college students towards inhalant abuse

Table 4: Distribution of attitude among pre-university college students regarding inhalant abuse

n=120

Level of attitude	Score	Frequency	Percentage
Negative attitude	1-50	-	-
Positive attitude	**50-100**	**120**	**100**

The tabulated data in Table 4 reveals that all 120 (100%) students exhibited a positive attitude towards inhalant abuse. This indicates that pre-university college students generally hold a positive attitude towards inhalant abuse.

Section 4: The Correlation between knowledge and attitude of inhalant abuse among pre-university college students

Table 5: The Correlation between the knowledge and attitude of inhalant abuse among pre-university college students

n=120

Variable	r value	P value	Remarks
Knowledge and attitude	0.243	0.007	Positive correlation

(r=0.243,n=120,p>0.05)

Tabulated data in Table 6 depicts, positive correlation between knowledge and attitude scores of pre-university college students regarding inhalant abuse (r=0.243, n =120,p>0.05)

Section 5: The association between knowledge scores and attitude scores of inhalant abuse among pre-university college students with selected demographic variables

Table 7: The association between level of knowledge and selected demographic variables

n=120

Sl. No.	Demographic variable	χ^2value	P value	Inference
1.	Age (in years)	6.640	0.036	S
2.	Religion	9.328	0.025	S
3.	Year of course	0.040	.841	NS
4.	Family income per month (Rupees) 9.495	0.023	S	

p≤0.05,(NS)not significant,(S)significant

Tabulated data in Table 7 shows, there were significant association between level of knowledge and demographic variable such as age, religion and family income except year of course. Hence H2 is rejected and H02 is accepted.

Section 6: The association between attitude score and selected demographic variables

Table 8: The association between attitude score and selected demographic variables

Sl No.	Demographic variable	χ^2 value	p value	Inference
	1.Age (in years)	6.976	0.03	S
	2.Religion	4.787	.188	NS
	3.Yearofcourse	.307	.579	NS
	4.Familyincome (per month)	.596	.897	NS

p≤0.05,(NS)not significant,(S)significant

Tabulated data in Table 8 shows there was no significant association between attitude and demographic variables like religion, year of course and family income exceptage.HenceH03 is accepted.

DISCUSSION

Adolescent students in high school and colleges are the most vulnerable group in the society. About 40 million people in the world are estimated to be substance or drug abusers. Peer influence, lack of clear identity, self or intra-familial conflict, easy availability, rapid socio economic and demographic changes are the factors expose the adolescents to inhalant abuse.9 The use of psychoactive substances among adolescents and young adults cause unintentional and intentional injury.10 Most of the students gets easily addicted towards sniffing glue and petrol which was commonly found in India therefore, the study aims to find the knowledge and attitude of inhalant abuse among pre-university college students in a selected college Mangaluru.

In this present study majority of the pre- university college students that is 54 (45.0%) of them had good knowledge whereas 45(37.5%) of them had very good knowledge, 14(11.7%) of them had average knowledge and 7(5.8%) of them had poor knowledge regarding inhalant abuse.

A supportive study conducted by Yadav P, Parajuli R in 2021 to assess the knowledge regarding drug abuse among 106 school students using self administered structured knowledge questionnaire shown that majority 57.5% had poor, 41.5% have adequate and 0.9% had good level knowledge regarding drug abuse.11

In this study 120 (100%) of pre university college students were shown positive attitude towards inhalant abuse.

A supportive study conducted in Western Kinya by Embelton L, Ayuku D and Braitstein P to assess the knowledge, attitude and practice of substance abuse among 151 street children result shown that despite the lack of education, about 98% of responded that using drug is bad for a person's health. Also 67% agreed that they were aware about the harms of using drugs.12

In the present study there is positive correlation between knowledge and attitude scores of pre-university college students about inhalant abuse, as knowledge increases attitude also increases ($r=0.243, n= 120, p>0.05$).

A supportive cross sectional study conducted by Moreiro F, Silveria D and Andreoli S to assess the knowledge and attitudes related to drug abuse and prevention displayed by public school educators in Brazil shown that, there was no correlation between the educators knowledge and characteristics of the schools and the educators professional experience and educational background.13

In the present study result showed that pre university college students had good knowledge and positive attitude towards inhalant abuse and there was significant association between level of knowledge and demographic variable such as age, religion and family income except year of course.

A supportive study conducted by Rattan M and Sumeriya N among 150 adolescent students to assess the knowledge and attitude regarding psychoactive substance abuse and the result shown that there is a significant association between the knowledge score and the father's education. Also there is association between attitude score and sex of the adolescent.14

IMPLICATIONS

The findings of the study have implications in the field of nursing education, nursing administration and nursing research. Education regarding inhalant abuse helps to prevent the inhalant abuse and its complication throughout the life in pre-university college students. It also helps to clear the misconception of pre-university college students as well as public regarding inhalant abuse. Hence it is very necessary to prepare nurses to integrate knowledge regarding inhalant abuse into all the levels of curriculum in nursing education. The nurse administrator should encourage staff nurses to plan and organize educational programmes for college students to improve their knowledge and attitude regarding inhalant abuse. It will also help to get rid of misconceptions regarding inhalant abuse and that will help them to develop a favorable attitude towards prevention of inhalant abuse. They should encourage the nursing staffs to conduct researches regarding inhalant abuse among college students. Develop written protocols on assessment of inhalant abuse. Distribute the educational pamphlets about information regarding inhalant abuse high risk and prevention of inhalant abuse.

LIMITATIONS

The study did not assess the prevalence of inhalant abuse among the students and a structured knowledge questionnaire and attitude questionnaire developed by the investigator was used for data collection, which restricts the amount of information that can be obtained from the respondents.

STRENGTHS

A similar study can conduct to assess the prevalence and behavior of adolescents regarding inhalant abuse. In addition a survey study can be done to explore the addiction among adolescents.

CONCLUSION

In conclusion, this study sheds light on the knowledge and attitudes towards inhalant abuse among students. The findings indicated that a significant number of students have a positive attitude towards inhalant abuse, as evidenced by the 100% positive response rate in the surveyed sample. These results highlighted the need for increased awareness and education regarding the risks and dangers associated with inhalant abuse among students. Efforts should be made to implement preventive measures and interventions to address this issue effectively. By fostering a better understanding of the risks and promoting a negative attitude towards inhalant abuse, we can strive towards creating a healthier and safer environment for students. Further research is warranted to

explore the underlying factors contributing to these attitudes and to evaluate the long-term impact of interventions aimed at reducing inhalant abuse among students.

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