ORIGINAL RESEARCH ARTICLE

Prevalence, Pattern and Determinants of Substance Abuse Among Adolescents in Bagalkot, Karnataka, India

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ABSTRACT

Background: Adolescence is the age of curiosity, experimentation and new roles. This is the age children start to explore the world and test everything around them. Substance abuse is an alarming problem among adolescents in India. The objective is to assess the prevalence, pattern and determinants of substance abuse among adolescents of Bagalkot.

Methods: A cross sectional study with a sample of 384 adolescents, selected by disproportional stratified random sampling. WHO ASSIST was used to assess the prevalence and pattern of substance abuse. The data was entered in MS excel sheet and transferred to SPSS 18 for analysis.

Results: the mean age of the sample was 16.4 ± 2.44 years. 71.9% were males and 28% were females. Among 384 adolescents 20.3% used to consume tobacco and 21.4% consumed alcohol, 2.6% consumed cannabis, 15.6% had consumed inhalants. Among Tobacco users 53.85% were 18 to19 years of age.

Conclusion: The overall substance abuse among adolescents is about 21%. Age, Gender, and Peer pressure, increase the risk of substance abuse. The substance abuse prohibitor strategies must be strengthened to reduce the prevalence of substance abuse among adolescents.

Key words: adolescents, substance abuse, alcohol, tobacco, prevalence and pattern

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INTRODUCTION

Adolescence is the age in which children start to explore the world and test everything around them.[1] One with committed goal get a particular direction to fulfil their aim but many are misdirected towards menace like substance abuse.[2] Substance abuse is an alarming problem among adolescents in India.[3] Substance abuse is a threat, not only to health of the user but also to his/her family, community and Nation. According to the World Health Organisation Report 2022 (WHO), 8 million people die every year due to tobacco consumption. In 2020 around 22.3% of world's population consumed tobacco.[4] Adolescence is a time of exploration and identity forming. Incidence of substance abuse is reported more among adolescents compared any other age group. This is the age of experimentation. According to a report by UNICEF, self-harm is among the leading causes of death among adolescents. Around 70% of the premature deaths are associated with smoking and binge alcohol drinking. Adolescent age is most crucial period of setting goals and exploring the world around them but it has also been noted that many mental disorders have their onset during adolescence.[5]

There are 130 crore adolescents in the world, making around 16% of the world's population. Adolescence is a transition period from childhood to adulthood. There needs and challenges differ from both children and adults.[6] As per United nations 2021 'world drug report, 271 million people used drugs worldwide in a year and more over 36 million people suffered with drug use disorders. More shocking condition is there is 40% drop in perception of adolescents considering drug use as harmful for health.[7] There is 26% increase in the drug users in 2020.[8]

India has largest population of adolescents in the world.[9] India has around 253 million adolescents are there in the age group of 10 to 19 years.[10] Every 5th person is India is adolescent.[9] As per a study conducted in Surendra Nagar district Gujarat, the prevalence of substance abuse was found among 37.67% adolescents in urban community and 30.17% adolescents of rural community. Prevalence was higher among male adolescents compared to females.[11] Adolescents being the most crucial man power resource for every country, it is utmost important to determine the level of substance abuse in them that can be disturbing their future achievements and contribution in appropriate growth of the country.

METHODOLOGY

It was a cross sectional study with an aim to assess the prevalence and pattern of substance abuse among adolescents studying in high schools and Preuniversity colleges of Urban Bagalkot. A sample of 400 adolescents was selected by disproportional stratified random sampling. five strata were prepared considering the standard of education of subjects, from 8th standard to 12th standard. 16 adolescents had submitted incomplete information, hence the data obtained from 384 adolescents was considered for final analysis.

Study participants: The study participants were adolescents of Bagalkot, between 13 to 19 years of age and studying in 8th to 12th standard (8th to 10th standard in high school and 11th and 12th standard in Preuniversity college). The sampling criteria included the adolescents studying in Highschool or Preuniversity colleges, who are available and willing to participate and whose parents give consent for participation of their children. The adolescents absent to Highschool/college, feeling sick and not able to provide data were excluded from enrolment in study sample.

Sample size calculation: The sample size was calculated using ROASOFT online sample size calculator.

The sample size was calculated considering the following criteria, Z = 1.96 (95% confidence level), margin of error (e) =5% (0.05), Population proportion (P) = 0.5. The population of adolescents in Bagalkot district was considered around 1,80,000. The calculated sample size was 380. The researcher enrolled 400 subjects (80 from each stratum by lottery method). Data was obtained from 400 subjects but 16 subjects' data was not included in analysis due to incomplete information. Hence the data analysis and interpretation included data obtained from 384 subjects.

Setting of the study: the study was conducted in Basaveshwar Highschool, Vidyagiri, Bagalkot and Vaghadevi Pre-university college, Navanagar, Bagalkot. The researcher enrolled 80 subjects from each stratum or standard of education (8th standard to 12th standard).

Data collection Instrument: the data regarding prevalence and pattern of substance abuse was assessed by using WHO ASSIST (Alcohol, smoking and substance involvement screening test).[12] It is developed by WHO. It includes the items to assess data regarding substance abuse in lifetime and substance abuse in past 3 months. Briefly the WHO ASSIST contains 8 questions, probing the use of alcohol, tobacco, cannabis cocaine, amphetamine-type stimulants (ATS), sedatives and sleeping pills (benzodiazepines) hallucinogens inhalants opioids and 'other' drugs

Scoring: total score is obtained by adding the scores of question number 2 to 7. Question number 8 is to determine the level of risk of injections. The scores of uses of each substance are added separately to know the pattern of substance abuse.

Structured Questionnaire: Researcher prepared a structured close ended questionnaire to assess the data regarding baseline factors and determinants of substance abuse among adolescents.

Validity, reliability, and translation of data collection instruments: WHO ASSIST is a self-admi-

nistered, self-reporting tool established by WHO, to screen individual for substance abuse. The content, construct and criterion validity of the tool has been supported by its use in the past 4 decades in various researches, consultation, feedback and revision. The instruments were translated to Kannada language and then retranslated to English language and the similarity between original and translated tool were ascertained by Linguistic experts. The reliability was established by administering the tool to 10 adolescents. Cronbach's alpha was calculated using SPSS package. The alpha coefficient value was 0.912 suggesting the tool was reliable for data collection.

Ethical clearance: Ethical clearance certificate was obtained from Institutional ethical clearance committee, B.V.V.S Sajjalashree Institute of Nursing sciences, Bagalkot (ref No. BVVSSIONS-IEC/2022/92. Dt: 04/01/2022) Written consent of participation was obtained from participants and their parents before data collection.

Statistical analysis: the data was analysed using SPSS version 25. The obtained data was entered in MS excel sheet. The data was edited for accuracy and completeness. The categorical responses were coded with numerical codes. The data was presented with frequency and percentage distribution tables and diagrams. The description of substance abuse was presented with Arithmetic mean, range and standard deviation. Binary logistic regression analysis and Odds ratio were used to associate the determinants with substance abuse among adolescents.

Data collection Procedure: The data was collected in June 2022. Prior permissions were taken from the principals of selected High school and Pre university college. The teachers of respective class were asked to stay out of the class so that the adolescents should feel free to express their experience. All the participants were explained about the purpose of study and that the data or information provided from them will be kept confidential and their identity will not be revealed. They were informed to avoid discussion with other fellow mates. The instruments were given according to their preferred language (English or Kannada). Instructions were given regarding content of data collection instruments. The researcher attained and clarified the doubts of participants during data collection. The filled tools were collected from the participants. On an average adolescents took 20 to 30 minutes to fill the tools and the whole process was completed in 1 hour. Researcher thanked all the participants and concerned teachers and principal.

RESULTS

The mean age of the sample was 16.4 ± 2.44 years. Among 384 adolescents 276 (71.9%) were males and 108 (28.1%) were females. 62% were from nuclear family, 61.45% of adolescents used to receive around Rs 200 as monthly pocket money and 20.31% received Rs 400 to Rs 600 monthly pocket money. 15.1% adolescents had experienced peer pressure for substance abuse, 53.6% were from rural prominence, 30.2% adolescents expressed that their either parent had habit of substance abuse, 34.4% adolescents said that they have noticed substance abuse among their family members.

Among 384 adolescents the use of substance in their lifetime shows that, the prevalence of alcohol use was among 82 (21.4%) adolescents, followed by tobacco use (20.3%), Inhalants (15.6%), cannabis (2.6%), Amphetamine type stimulants (1.6%), Hallucinogens (1%), opioids (05%), sedatives (0.5%).

The results on substance abuse by the sample in past three months (Table.1) depicts that, 76 adolescents used tobacco in past three months; among which 4.2 % (16) used it once or twice, whereas 8.3% (32) consumed tobacco every day. 74 adolescents said that in past 3 months they have consumed alcoholic beverages and 54 adolescents consumed inhalants, out of which 21% (8), adolescents said that they consumed alcohol daily or almost every day.

Gender (P< 0.000) and age (P< 0.023) were found to be strong predictors of substance abuse among adolescents. The odds of substance abuse were 1.7 times higher in males as compared to females, OR:1.7 (CI 95%: 1.08-2.68), odds of substance abuse increased by 1.697 times as the age increased among adolescents, OR: 1.697 (CI 95%: 1.30-2.31).

Table 1: Distribution of sample according to their use of Substance in past 3 months (N = 384)

Substance	Never	Once/twice	Monthly	Weekly	Daily/almost daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	308 (80.2)	16 (4.17)	2 (0.52)	26 (6.77)	32 (8.33)
Alcoholic beverages (beer, wine, spirits.)	312 (81.25)	24 (6.25)	28 (7.29)	12 (3.13)	8 (2.08)
Cannabis (marijuana, pot, grass, hash, etc.)	372 (96.9)	6 (1.56)	4 (1.04)	-	2 (0.52)
Cocaine (coke, crack,)	380 (99)	2 (0.52)	-	-	2 (0.52)
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	378 (98.4)	-	4 (1.04)	2 (0.52)	-
Inhalants (Nitrous, glue, petrol, paint thinner, etc.)	330 (85.9)	36 (9.38)	8 (2.08)	6 (1.56)	4 (1.04)
Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	378 (98.4)	4 (1.04)	-	-	2 (0.52)
Hallucinogens (LSD, acid, mushrooms, PCP)	376 (97.9)	4 (1.04)	-	4 (1.04)	-
Opioids (heroin, morphine, methadone, codeine)	382 (99.5)	-	-	2 (0.52)	-
Other	380 (99)	2 (0.52)	2 (0.52)	-	-

Abbreviations: F: Frequency; Figure in parenthesis indicates percentage.

Table 2: Bivariate Logistic analysis to determine the association between Determinants and prevalence of substance abuse (alcohol) among adolescents (N = 384)

Determinants	Substance abuse		P Value	OR (95% CI)
	Yes (%)	No (%)		
Age in years				
14-15	1 (0.26)	135 (35.2)		Ref
16-17	32 (8.3)	82 (21.4)	0.02*	.148 (.04-.48)
18-19	49 (12.8)	85 (22.1)	0.000*	1.697 (1.30 -2.21)
Gender				
Male	78 (20.3)	198 (51.6)	0.023*	1.7 (1.08 -2.68)
Female	4 (1.04)	104 (27.1)		
Father's Education				
No formal Education	18 (4.69)	56 (14.6)	0.957	1.002 (.89 – 1.13)
Below 10th	22 (4.6)	48 (12.5)	.332	1.432 (.70- 2.96)
SSLC	8 (5.7)	50 (13.02)	.503	.765 (.35-1.68)
PUC	26 (2.1)	50 (13.02)	.001*	3.27 (1.58- 6.77)
Degree	4 (1.04)	48 (12.5)	.342	1.46 (.67- 3.17)
Others	4 (1.04)	50 (13.02)		Ref
Mother's education				
No formal Education	32 (8.33)	82 (21.35)	0.914	1.007 (0.89 – 1.12)
Below 10th	20 (5.2)	58 (15.1)	0.41	.70 (.29-1.66)
SSLC	18 (4.7)	74 (19.2)	0.42	.70 (.31-1.6)
PUC	10 (2.6)	32 (8.3)	0.85	.91(.35-2.37)
Degree	2 (0.52)	28 (7.3)	0.80	1.14 (.41-3.21)
Others	0 (0)	28 (7.3)		Ref
Father's occupation				
Unemployed	2 (0.52)	10 (2.6)	0.76	1.014 (0.93 – 1.11)
Government employee	4 (1.04)	40 (10.4)	.019	.124 (.026-.60)
Private employee	4 (1.04)	28 (7.3)	0.196	.621 (.301- 1.28)
Business	8 2.08()	56 (14.6)	0.25	.621 (.277-1.39)
Labour	2 (0.52)	8 (2.1)	0.49	.798 (.418- 1.52)
Farmer	26 (6.77)	102 (26.6)	.023	.155 (.031- .772)
Others	36 (9.38)	58 (15.1)		Ref
Mother's occupation				
Government employee	10 (2.6)	20 (4.3)	0.999	4.61 (.000)
Private employee	0 (0)	12 (3.1)	0.004	.171 (.052- .57)
Business	2 (0.52)	6 (1.6)	0.059	.29 (.078- 1.05)
HM	2 (0.52)	240 (62.5)	0.108	.29 (.062- 1.32)
Labour	38 (9.9)	2 (0.5)	.000	.18 (.091- .36)
Farmer	0 (0)	4 (1.04)	0.99	4.68 (.000)
Others	0 0()	22 (5.7)		Ref
Family monthly income in Rupees (Rs)				
Up to 10,000	16 (4.2)	116 (30.2)	0.728	1.00 (1 - 1)
11,000 to 25,000	48 (12.5)	96 (25)	.810	.430 (1.52 -.81)
26000 to 40,000	14 (3.7)	32 (8.3)	1.674	.903 (.102 -1.67)
40,000 to 60,000	4 (1.04)	54 (14.1)	2.204	1.00(.854 -2.20)
> 60,000	0 (0)	4 (1.04)		Ref
Place of residence				
Rural	52 (13.5)	154 (40.1)	0.474	1.158 (0.78 – 1.7)
Urban	30 (7.8)	148 (38.5)		Ref
Parent's substance abuse				
Yes	54 (14.1)	62 (16.2)	.000*	0.230 (0.14 – 0.37)
No	28 (7.3)	238 (62.5)		Ref
Type of family				
Nuclear	52 (13.5)	186 (48.44)	0.946	1.014 (0.67 – 1.53)
Joint	30 (7.8)	116 (30.21)		Ref
Peer Pressure				
Yes	40 (10.4)	18 (4.69)	0.000*	0.103 (0.05 – 0.23)
No	42 (10.9)	284 (73.96)		Ref

Abbreviation: F: Frequency, OR: Odds ratio, S.E: Standard error, CI: Confidence interval, P< 0.05*

The adolescents whose mothers were working (P< 0.042) had 1.153 times higher risk of substance abuse as compared to adolescents whose mothers were house makers, OR:1.153 (CI 95%: 1.005-1.323). Adolescents whose either parent used substances had 23% of risk of substance abuse OR:0.23 (CI 95%:0.144 - 0.368). Adolescents who experience peer pressure (P< 0.000) for substance abuse had 10.3% risk of substance abuse OR: 0.103 (CI 95%: 0.047 – 0.225).

Discussion

It was a cross sectional study aimed to determine the prevalence, pattern and determinants of substance abuse among adolescents, selected from high-schools and pre-university colleges. Adolescents were selected from high-schools, in a similar cross sectional study conducted by Dechenla Tsering et al[13] and 1,020 adolescents were selected from government secondary schools in Manipur, to assess prevalence of substance abuse.[14] Similarly the prevalence was assessed among adolescents between 10 to 19 years of age in Gujarath.[11]

The sociodemographic data and determinants were assessed by using a structured close ended questionnaire prepared by researcher and the prevalence and pattern of substance abuse was assessed using WHO ASSIST V3.0. The same instrument was used in many research studies with similar purpose.[15-16] The adolescents between 14 to 19 years of age were included in the study. A sample of 384 adolescents was selected by stratified random sampling technique, similar sampling technique was used in a cross-sectional study by Syed Kadri and associates.[17]

71.9% of the subjects were males and 20.1%were females. 15.1% adolescents had experienced peer pressure for substance abuse in their life time. 82 (21.4%) adolescents consumed alcohol, 20.3% consumed tobacco and 15.6 consumed inhalants in their lifetime. The prevalence of tobacco consumption (77.05%), inhalants (26.3%) was very high but alcohol consumption was less (11.47%) in a study conducted among adolescent in New Delhi.[18]

The prevalence of substance abuse was high among males compared to females and The prevalence of substance abuse was found higher with increasing age, similarly, in a study by Pratik K et al, the prevalence of substance abuse was high among males (55.33%) compared to females (3%).[14] In another study the prevalence of substance abuse was significantly higher with regard to their age and gender.[18] males had higher prevalence than females and the risk of substance abuse increased with advancing age, in a study conducted by Qadri S S etal.[17]

The Pattern of Substance abuse: The adolescents were asked about substance abuse in past 3 months. Among 10 different substances assessed, tobacco was most used substance among adolescents, 8.3 % (32) of them used it almost every day and 26 (6.8%) consumed tobacco at least once in a week. 8 (2.1%) said that they consume alcoholic beverages almost every day, 28 (7.3%) consumed once in a month and 12 (3.1%) at least once in a week. 36 (9.4%) consumed inhalants at least once in past 3 months. 2 (0.55%) consumed opioids at-least once in a week. Similarly in a study conducted in Manipur to assess the pattern of substance abuse, tobacco consumption (46%) was very high, followed by consumption of alcoholic beverages (29%) and no adolescents used cocaine, Amphetamine, sedatives and Heroin[13]. In the present study also, there were no adolescents consuming cocaine. But about 0.5% consumed sedatives and 0.5% consumed opioids.

In the present study 66 (17.2%) adolescents expressed that they felt strong desire to consume tobacco, among which 44 (11.5%) said that they feel the desire every day. 64 (16.7%) had a strong desire to consume alcohol and 8 (2.1%) had strong desire to consume inhalants. 39 adolescents had experienced financial problems because of tobacco consumption and 41 adolescents had some financial or legal issues because of alcohol consumption. Around 42 (11.2%) adolescents said that they were not to do their usual work due to tobacco consumption and 40 (10.6%) adolescents failed to do their usual work because of alcohol consumption. Family members had shown concern for 60 adolescents (15.6%) consuming tobacco and 54 (14.1%) consuming alcoholic beverages. In a study conducted by Rajbir Kaur et al, health problems because of substance abuse were faced by two adolescents.[16]

The substance abuse among adolescents was significantly associated with substance abuse among parents. Similarly, alcohol and tobacco use were significantly associated with alcohol and tobacco use among their parents/family members in a study conducted by Chetanjit Baruah et al.[19] No significant association was found between substance abuse and type of family but contradictory result was found in a study by Daneil et al where substance abuse was found more among adolescents of nuclear family.[18]

Limitations of the Study: The study included the assessment of substance abuse with broad categories. The substances could have been more specifically assessed considering the locally available products.

Conclusion & Recommendations

The results obtained from the study reflects prevalence of alcohol consumption among 21.4% and tobacco use among 20.3 % adolescents. 34.4% adolescents had noticed substance abuse among their family members and 15.1% experienced peer pressure for substance abuse. Gender and age were found strong predictors of substance abuse with substance abuse 70% higher among males compared to female adolescents.

Adolescents with substance abuse among either parent has 23% higher risk of substance abuse compared to adolescents. The study recommends that the adolescents need consistent guidance on prevention of substance abuse. Male adolescents should be given prime concern and regular substance abuse prevention awareness programmes must be held in high schools and Preuniversity colleges. Student support groups should be formed in the institutions to encourage the students to express their stress and concerns and gaining counselling from appropriate personnel.

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