



Epidemiology of Substance use Among the University Students in South India: an Exploratory Study

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Keywords

Substance use; university students; prevalence; South India

Abstract

Aim: Substance use among students has been recognized as an important public health concern in recent years. Particularly, its increasing use among university students and associated outcomes have gained much attention and highlighted the importance of the topic for policymakers. Given this, the main aim of this study was to explore the trend and pattern of substance abuse among students in three public universities in South India. **Subjects and Methods:** This was an exploratory study conducted at three main universities in Hyderabad, Telangana. For this study, 300 respondents were selected through snowball and purposive sampling techniques. The interview schedule and questionnaire were used as the main tools to collect the data from respondents. **Results:** The major findings revealed a high prevalence rate of substance abuse among male students (78.76 %), arts-related backgrounds (38 %), and students living in university hostels (64.67 %). Further, high proportion of students (67 %) started using substances for the first time on university campuses. Alcohol (39 %), cigarettes or tobacco (32 %), and opioids (18 %) were found common substances. Peer group influence (31 %), relief from psychological pressure (17 %), and curiosity (12 %) were identified as the main associ-

ated factors of substance abuse. In addition, the main adverse effects reported were behavioral problems (21 %), poor academic performance (19 %), and health issues (17 %). **Conclusion:** This study concluded that substance use among university students is widespread, irrespective of socio-demographic and academic backgrounds. Therefore, universities should set up various programs to create awareness and prevent the use of substances in high-learning institutions.

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Introduction

Substance use has been recognized as an important public health issue in many nations across the globe. It refers to the use of any illicit substances, drugs, or misappropriation of prescribed or over-the-counter medications that have negative impacts [1,2]. Over the past few decades, substance abuse has become widespread among many sections of society. Among the general public, the use of illicit substances among university students has increased rapidly and has become a matter of great concern [3,4]. The latest world drug report revealed that the prevalence of substance and drug abuse is high and more prevalent among the student community than the general population [5]. Many research studies have also shown a significant rise in substance abuse among uni-

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versity students [6-8]. Findings of such studies reported that different types of illicit substances and drugs have been widely used throughout the world. Alcohol, cigarettes, tobacco, cannabis, opioids, morphine, codeine, marijuana, stimulants, anti-depressants, and psychoactive substances have been found to be the most commonly abused substances among students worldwide [9-12]. Intuitively, this leads to disastrous consequences and poses several threats to their health, education, family, and society at large [13-15]. Available literature also reveals that illicit substances adversely affect the academic careers of college and university students, resulting in poor academic performance and limiting the chances of future success in life [16,17]. Not only this, but it also affects their physical and mental health, leaving them incapable of achieving their goals and academic ambitions [18,19]. The use of illicit substances and drugs has infiltrated society, with young people, including students, being the most affected and vulnerable groups [20].

Research studies have suggested that university students are more prone to the use of substances, owing to the social environment conditions of the university campuses [21]. With the growing stress, peer group influence, first-hand experience, curiosity, and academic pressure to fit in, they are more likely to experiment with drugs and other substances [22,23]. Besides, they often experience an entirely different and exclusive degree of autonomy, as when they move from high schools to universities. They are exposed to a diverse range of fresh experiences and options, including self-decision-making, sharing hostels with strangers, making new social groups, and fitting in with youth culture and friends [24]. These variables and perceived norms contribute to an increased risk of substance abuse among university students [25]. Additionally, some research studies have reported that the university period is marked by transition, serious academic expectations, intense pressure, freedom, and absence from family supervision [26]. Hence, during this period, the choices and possibilities for seeking substances and illicit drugs increase more [27]. Thus, the new environmental conditions of the universities facilitate the risk of substance and drug abuse behaviour and lead to unintended consequences.

Recent studies have reported that the use of illicit substances has increased dramatically worldwide, particularly in Asian countries like India [28]. Numerous studies have recorded that substance abuse is common among students and is becoming widespread in many parts of India [29,30]. Particularly, the use of substances has been found more prevalent among college and university students [31]. In addition, many surveys and epidemiological studies have highlighted the prevalence of substances among students in India [32,33]. It is also reported that different types of substances and drugs,

ranging from soft, hard, and psychoactive pharmaceuticals to narcotics, are commonly used by students in India [34-36]. However, most of the studies have focused on substance and drug abuse problems among schools and medical college students only. Besides, these studies have been conducted mainly in the northern, central, and north-eastern parts of India. Therefore, few studies have demonstrated the trend and prevalence of substance abuse among university students, especially in South India, like Hyderabad, Telangana. In view of this, the study felt it was more important to explore the pattern of substance abuse, including socio-demographic variables, consequences, and possible factors associated with substance abuse among university students.

The main aim of this study is to explore the prevalence, consequences, and related factors of substance abuse among university students in Hyderabad, Telangana. The specific objectives of the study include:

- To study the socio-demographic profile and academic background of the university students.
- To find out the dimensions and patterns of substance abuse among university students.
- To identify the associated factors and consequences of substance abuse among the students.

Subjects and Methods

This piece of research work was carried out to explore and gain a better understanding of the prevalence and pattern of substance abuse among university students. The study was conducted at three government public universities located in the metropolitan city of Hyderabad, Telangana. The total sample size of this study consists of 300 respondents selected from three universities, i.e., 100 from each university. The sampling frame comprised students from the age group of 16 to 35 years old, including both males and females. The respondents selected in this study come from diverse backgrounds, including subjects, courses, programs, years of study, and fields, as well as socio-economic backgrounds. The sample for the study was selected by adopting non-probability sampling techniques, including snowball and purposive sampling. The researcher, who himself was a part of the university, first contacted his friends and students who were using illicit substances, and later they introduced the researcher to other substance abusers. So, the snowball sample technique helped a lot of investigators obtain access to the object of the study. Thus, the snowball and purposive sampling techniques were adopted due to the sensitive nature of the problem. Given this, the present study employed a mixed-methods approach comprising both quantitative and qualitative research methods. The questionnaire, field observation, and group discussion were used as the main research tools for the collection of data. The questionnaire was formulated after a review of relevant literature. The questionnaire was de-

signed to gather information about student socio-economic status, demographic profile, and academic characteristics, as well as patterns, types, associated factors, and consequences of substance abuse. The researcher himself developed a proper rapport and friendly atmosphere with the respondents. The collected data was carefully analyzed, coded, interpreted, and tabulated scientifically.

The participant in the study was voluntary and informed consent was obtained from all the participants after discussed the purposes and objectives of the study. The participants were assured that their shared personal information will be kept confidential and anonymous during the whole procedure of the study.

Results

The total sample of the present study was 320 respondents; out of that, 300 respondents (response rate 93.75 %) were found valid and correct for data analysis. Therefore, the analysis of the study begins with the demographic profile of the 300 respondents, as displayed in Table 1. In our study, out of the 300 respondents, 78.67 % were males and 21.33 % were females. The maximum number of respondents (84 %) was unmar-

ried, followed by 13.67 % married and 2.33 % divorced and separated. The age group of the respondents was divided into four age groups, ranging from 16–20 and above 30 years. And a large number of respondents fall into two age groups, i.e., 21 - 25 years and 26 - 30 years, which constitute 29.33 % and 35 %, respectively. Further, 18.67 % belong to the age group of 16 - 20 years, and 17 % are above 30 years. With respect to the type of family, a high proportion of respondents, i.e., 72.67 % belong to nuclear family backgrounds, while a small number (27.33 %) are from joint families. The data from the table also shows that a large number of respondents, i.e., 69.33 %, are coming from urban areas, whereas 30.67 % of respondents are from rural areas. Therefore, the study clearly reveals that sociodemographic characteristics such as age, sex, marital status, and family and residence type play a substantial role in influencing an individual's behaviour toward substance abuse.

With reference to residence, an overwhelming majority, i.e., 64.67 % of the respondents, were living in university hostels, followed by 20.33 % off-campus, 9 % with their parents, and 6 % were living in other places, including rented places, alone, etc. Concerning the field of the study, most of the respondents (i.e., 38 %) were from the arts field, 23.33 % were from engineer-

Table 1. Demographic profile of the respondents

Parameters	N (%)	Parameters	N (%)
Sex		Residence	
Male	236 (78.67)	In campus	194 (64.67)
Female	64 (21.33)	Off campus	61 (20.33)
Marital status		With Parents	27 (9)
Married	41 (13.67)	Other	18 (6)
Unmarried	252 (84)	Field of study	
Divorced/separated	7 (2.33)	Arts	114 (38)
Age group		Science	59 (19.67)
16 - 20	56 (18.67)	Commerce	37 (12.33)
21 - 25	88 (29.33)	Engineering	70 (23.33)
26 - 30	105 (35)	Other	20 (6.67)
Above 30	51 (17)	Courses	
Family type		Bachelors	67 (22.33)
Nuclear	218 (72.67)	Masters	83 (27.67)
Joint	82 (27.33)	Diploma	37 (12.33)
Residence		Ph.D.	52 (17.33)
Rural	92 (30.67)	Other	61 (20.33)
Urban	208 (69.33)		

ing, followed by 19.67 % from science, 12.33 % from commerce, and 6.67 % from other subjects, including law, computer science, and diploma fields. In addition to this, a large number of respondents, i.e., 27.67 % are enrolled in masters degrees, 22.33 % are bachelors, followed by 17.33 % of Ph.D. scholars, 12.33 % of diploma holders, and finally, 20.33 % of respondents are enrolled in various other courses, including professional, medical, health, law, etc.

Prevalence of substance abuse

The prevalence and pattern of substance abuse among the students were important parts of this study, as shown in Table 2. The findings presented in Table 2 show that a large number (i.e., 67 %) of the respondents have started using substances for the first time in uni-

Table 2. Prevalence of substance abuse among university students

Pattern	N (%)
First experienced in substance use	
Schools	16 (5.33)
Colleges	75 (25)
University	201 (67)
Other	8 (2.67)
Duration of substance use	
Up to 1 year	69 (23)
1 - 2 year	92 (30.67)
2 - 3 year	72 (24)
More than 3 years	67 (22.33)
Year of Course/study in which substances started in University	
1st year	88 (29.33)
2nd year	123 (41)
3rd year	56 (18.67)
Above 3rd year	33 (11)
Frequency of using substances	
Daily	202 (67.33)
Sometimes	47 (15.67)
Weekly	41 (13.67)
Once in a month	10 (3.33)
Sources of supply illicit substances	
Friends	147 (49)
Drug peddlers/agents	69 (23)
Medical stores	48 (16)
Any other	36 (12)

versities, and 25 % have started in colleges. Meanwhile, a small number of respondents, i.e., 5.33 %, have started in schools, and 2.67 % have started in other places, such as coaching and tuition centres. With respect to the duration of substance abuse, a large number, i.e., 30.67 % of respondents were using substances in the past 1-2 years, followed by 24 % from 2 - 3 years, 23 % from 1 year, and 22.33 % from more than three years. Further, the study found that high proportion (41 %) of respondents started using substances in the second and first years 29.33 %, followed by the third year (18.67 %), and a small number (11 %) in the third year. Moreover, the frequency of used substances has also been studied, and it was found that a high proportion (67 %) of respondents used substances regularly, 15.67 % were used sometimes, 13.67 % were used weekly, and 3.33 % were used once a month. Concerning the sources of substances, a large number (49 %) of respondents reported that they were getting their supply of substances from their friends. Drug peddlers/agents and medical stores were the next important sources of supply of substances, as reported by 23 and 16 %, respectively. Meanwhile, a small number (12 %) of respondents have reported other sources, such as relatives, teal stalls, hotels, and auto drivers. So the study confirms that drug peddlers, mafias, and medical storekeepers supply illicit substances to the students, which needs the attention of law enforcement and drug control agencies.

Types of substance used by respondents

Table 3 shows the various types of substances used by the respondents in the universities. Among the various substances given in the below table, alcohol was found to be the most common abused substance, as used by 39 % of respondents, while cigarette smoking

Table 3. Types of substances used by respondents

Type of substances	Frequency (N = 300)	Age (%)
Alcohol	117	39
Cigarette/Tobacco	96	32
Opioids	54	18
Cannabis	42	14
Anti-depressants/Sleeping pills	33	11
Codeine	27	9
Inhalants	9	3
Others	6	2

Note: the percentage of age increased due to the multiple responses of the respondents

or tobacco was found to be the second most commonly used substance, as reported by 32 % of respondents. Meanwhile, opioids, which include substances such as heroin, morphine, and cocaine, were used by 18 %, followed by cannabis at 14 % and codeine at 9 %. Further, anti-depressants, which include sleeping pills, tramadol, spasmoproxyvon, alprax, etc., were used by 11 %, followed by 3 % of inhalants and 2 % of other substances such as stimulants, tranquilizers, nicotine, and tobacco gutkha. However, a large number of respondents have reported that they were used to multiply substances over a given period of time. Due to this, it was found that high proportions of respondents were addicted to multiple substances and were polydrug users. Therefore, this study indicates that university students used different illicit substances ranges from alcohol, cigarettes, opioids, cannabis, codeine, and other substances.

Factors associated with substance abuse

There are various factors associated with substance abuse among individuals. However, the factors associated with substance abuse among students as reported by the respondents are shown in Table 4. The peer group influence was found to be one of the main associated factors of substance abuse, as reported by a large number (31 %) of respondents. Further, to ease psychological stress (17 %), curiosity (12 %), and for fun and pleasure (11 %), were found other significant factors were associated with substance abuse. Further, less commonly presented associated factors were found failure in love affairs (9 %), improving academic performance (7 %), being accepted by others (3.33), easy availability (4 %),

being sociable (3 %) and other factors (2.67 %), which include family problems, remaining awake at night, and financial stress. Therefore, the study clearly confirms that substance abuse among university students is the outcome of multifarious factors, in which peer group influences, psychological stress, curiosity, and pleasure, as well as relationship problems, is the main factors associated with substance abuse.

Implications of substance abuse on university students

Substance abuse has caused many negative impacts on the lives of students. The implications of substance abuse on university students are shown in Table 5. Of the adverse impacts attributed to substance abuse, behavioural problems were reported by 21 % of respondents. The main behavioural problems they have developed include fighting, indiscipline, truancy, and vandalism as well as relationship problems with teachers, friends, and family. Meanwhile, 19 % reported poor academic performance, including low grades, absenteeism, skipping classes, loss of interest, and failure. Further, 17 % of respondents reported physical health issues, such as skin problems, respiratory, cardiovascular, stomach, and physical weakness. Moreover, 16 % reported sleeping and appetite disorders, followed by financial strain (14 %), such as loss of money and valuable items. In addition to this, a small number (8 %) of respondents reported feeling isolated, 3 % reported accidents or injuries, and 2 % reported other issues as the implications of substance abuse. Thus, it is evident from the study that the use of substances has significant negative effects on the life and academic career of the students.

Table 4. Factors associated with the substance abuse among students

Reasons of substance use	Frequency (N = 300)	Age (%)
Peer group influence	93	31
To ease psychological stress	51	17
Curiosity	36	12
For pleasure and fun	33	11
Failure in love affairs	27	9
To improve academic performance	21	7
To be accepted by others	10	3.33
Easy availability	12	4
To be sociable	9	3
Any other reason	8	2.67

Table 5. Effects of substance abuse on students

Effects of substance abuse	Frequency (N = 300)	Age (%)
Physical health issues	51	17
Behavioural problem	63	21
Poor academic performance	57	19
Sleeping and appetite disorder	48	16
Financial strain	42	14
Feeling of isolation	24	8
Accident or injuries	9	3
Other issues	6	2

Discussion

To the best of my knowledge and efforts, this was the first study exploring the substance abuse problem among students enrolled in three public universities in Hyderabad, Telangana, India. This study highlighted that substance abuse among students is an important concern and has become a debatable issue owing to its adverse impacts on students. The use of illicit substances has increased among all the students, irrespective of their socio-economic background and demographic characteristics. The present study has found that the prevalence of substance abuse is higher among male students (78.67 %) than females (21.33 %). This sex disparity in substance abuse has been globally documented in several cross-sectional and epidemiological research studies [37,38]. Globally, research studies have identified that male population is more vulnerable to the use of substance than female [39,40]. This low prevalence of substance abuse among female students could be associated with social stigma, cultural norms, relationship dynamics, and societal pressure [38]. Meanwhile, the high prevalence of substance abuse among male students is attributed to facilitating roles in social interactions, peer pressure, craving, and higher social acceptability [41,42]. Thus, the use of substances between male and female stems from biological, psychological and socio-cultural differences. Age was identified as another important demographic characteristic associated with the use of substances among the students. In the current study, maximum usage of substance abuse was found in the age group of 20 - 30 years. Studies have identified high prevalence rates of substance abuse between the age groups of 16 - 28 years [43,44]. In addition to sex and age differences, this study recognizes that family background and residence have a great role in the influencing the use of substances. In this study, a high prevalence of substance abuse has been found among university students coming from nuclear families and urban backgrounds. Khafagy and his associates identified more substance abuse among students hailing from nuclear families and urban backgrounds [45]. It is worth pointing out that a nuclear family provides more freedom, opportunities, relaxation, and a minimum of control over its members than a joint family. The greater use of substances among students from urban areas is attributed to the easy availability of substances, a strong drug mafia network, peer groups, heavy pressure, and a complex lifestyle. Additionally, specific characteristics of the urban environment, such as living conditions, culture, fashion, peer pressure, social attitude, and the influence of nuclear family structure and residential segregation, increase the likelihood of substance abuse in urban communities.

Another interesting finding of this study was that substance abuse among university students was significantly associated with their current accommodation status, academic course, and field of study. Results from the study show that large numbers, i.e., 64.67 % of respondents, were staying in university hostels. This was consistent with the findings of many studies that reported a high prevalence of substance abuse among students living away from their families and within university hostels [46,47]. Living with families is strongly related to less use of substances in this study. This also highlights the protective and positive role of the family against any negative peer group influences. Besides, government public universities and its hostels have less strict regulations, more freedom opportunities and thus became the practical of human laboratory [48]. Further, in this study, arts students are using more substances than others. Similar results are presented by many studies that found high substance abuse problems among arts and theoretical students [49]. The greater use of substances among arts students compared to others may be due to the low level of knowledge and awareness regarding the adverse effects of substance use on health. The problem of substance among the students is also associated with their degrees and courses. The students pursuing master's degrees are using more substance, followed by bachelors, researchers, diplomas, and others. However, it is important to point out that no significant difference has been found concerning their pursuit of courses and degrees. Although the socio-cultural environment of the university affects students equally, irrespective of their course and field of study, Another significant finding of this study was that a high proportion (67 %) of students have started using substances after enrolling in a university, followed by colleges. The social milieu of university campuses strongly affects students to engage in numerous deviant behaviours, such as substance use. Studies demonstrate a significant frequency of drug use among students enrolled in universities and colleges [50]. Furthermore, the majority of students reported their initial use of substances during the second year of study, followed by the first year. This may be attributed to academic pressure, feelings of loneliness, separation from families, and social conditions on university campuses. The research also found that a high proportion of students used substances daily. This highlights the significant prevalence and chronic addiction to numerous illicit substances. More importantly, the source of the supply of illicit substances to students was also identified. In addition, it was found that friends, drug peddlers and agents, and medical storekeepers are the main sources of suppliers of substances among students. Relative findings presented by many studies revealed that the sources were mostly peers, local grocery stores, chemists, and tea

stallars [51,52]. However, it is important to know that most of the substance users were consuming hard to soft substances, so local drug agents, mafias and pharmacy stores keepers played a vital role in supplying the illicit substances.

This study finds that different substances, such as cigarettes, alcohol, cannabis, opioids, codeine, anti-depressant tablets, and inhalant substances, were often consumed by the students. Cigarettes, alcohol, and opioids were the most common substances, which were used by 89 %. These findings concur with other findings that revealed smoking, alcohol, and opioids are the most commonly abused substances among university students [53,54]. However, it is important to point out that a large sample of students used not only a particular substance, but multiple substances at a given time and thus became mostly polysubstance users. There is evidence that university students are addicted to multiple substances and are mostly polydrug users [55]. The current study identified multiple factors, such as sociocultural, psychological, environmental, and other personal factors, associated with substance use among university students. However, peer group influence, psychological stress, and curiosity were found to be prominent and increased risk factors attributed to substance abuse among students. Studies have highlighted that peer pressure and the influence of bad company play a primary role in influencing students in substance use behaviour [23,56,57]. It is important to point out that peer groups encourage a person to learn a new behaviour, whether positive or negative, and can impact the way we act or behave in certain situations.

In addition, this study observed that stress, curiosity, pleasure, academic pressure, and relationship issues are important factors in substance abuse. This supports the findings of many studies that reported curiosity, first-hand experience, psychological pressure, academic-related tension, broken relationships, and pleasures as the motivating factors that induce substance abuse among students [58-60]. The misconception that substances can reduce tension and increase energy, pleasure, and power also encourages the use of substances among students. Even more, the sensual advertisements in the media, films, and theaters have sparked this desire among youngsters by giving them the impression that using substances is sophisticated.

The present study identified many negative implications of substance abuse on the lives of the students, ranging from behavioural, academic, health, psychological, and financial to personal problems. Behavioural problems such as indiscipline, truancy, physical fights, and aggression were identified as the main adverse effects attributed to substance use among the students. The finding of behavioural problems can be clarified by the fact that alcohol was found to be the most con-

sumed substance among the students. Similarly, poor academic performance, including absenteeism, failure, low grades, and a lack of interest in studies, were noted as the second most common adverse effects of substance abuse. Studies found that substance use is significantly associated with poor academic performance, including dropouts and failures [14,16,17]. Thus, substance use affects the attention, memory, and ability of students and consequently results in low academic performance. Meanwhile, the other negative consequences attributed to substance abuse among the students were in line with those mentioned in other studies. These negative consequences include physical and mental health issues such as skin problems, respiratory disease, cardiovascular disease, physical weakness, appetite disorder, sleeping problems, depressive illness, and financial strain, including loss of money and valuable items, property crime, as well as relationship problems with family, friends, and teachers [61-63]. The use of cannabis, such as charas and ganga, is linked with the development of sleeplessness problems, anxiety, depression, and appetite disorders. The physical health issues were found to be another adverse effect of substance abuse among the students. The reporting of health issues can be explained by the fact that tobacco and smoking were identified as the second most consumed substances. Even more, the reporting of financial strains could be explained by the fact that many students were using costly drugs such as opioids, including heroin, brown sugar, cocaine, and psychoactive and depressant substances. The negative implications of substance use pose a threat to health, education, the economy, families, and society at large [64]. Given this, the phenomenon of substance use among university students is a complex issue and has several dimensions. It emerged as a main concern owing to its negative implications on the health and academic careers of the students. Therefore, there is a need to prevent the use of substances in educational institutions.

In conclusion, this study explored the magnitude and prevalence of substance abuse among university students, their demographic profile and academic background, commonly abused substances, and factors associated with substance abuse. In addition, negative effects resulted from it. Our study has reported that substance use is common among university students irrespective of their socio-economic status, demographic features, and academic backgrounds, including course, field of study, year, and living place. Students from arts and engineering backgrounds, as well as students residing in the hostels of the universities, are using more substances than other students. This study revealed that, like any other section of society, university students are using different types of illicit substances at a high proportion. The commonly abused substances were alcohol, cigarettes and tobacco,

opioids, cannabis, anti-depressant tablets, codeine syrup, and inhalant substances. The main common factors associated with substance use were peer group influence, psychological stress, curiosity, pleasure, academic pressure, and relationship issues. The commonly reported negative consequences were behavioural problems, poor academic performance, physical and mental health issues, as well as financial strains, accidents, injuries, and relationship problems.

Given the prevalence of substance use among the students, there is a need to educate them about the harmful effects of substance use and its consequences on their health, future prospects, and academic performance. Moreover, mass awareness programs; including workshops, campaigns, and seminars, should be conducted regularly on university campuses in order to control the spread of substance use among students. Further, the university authorities should tighten the rules,

banning the use of substances, increasing security presence and surveillance to deter drug-related activities, and setting up various other programs aimed at curbing the use of substances on the campuses. Hence, the present study reveals a need for the development of interventions for substance abuse among university students and the cooperation of parents, civil society, and university administration.

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Conflict of Interest

None to declare.

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