

Cross-Sectional Study of Epidemiological Determinants of Substance Abuse among Male Substance Abusers Attending a De-Addiction Centre in Bangalore City

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ABSTRACT

BACKGROUND

Substance abuse is a cause of deaths, global burden of disease and injury. Increasing trends of underage substance abuse have shown to be associated with future substance dependency. Understanding various factors associated with it will help mitigate the severity and extent of use. In this study, we wanted to find out the pattern of substance abuse in patients at a de-addiction centre in Bangalore.

METHODS

This cross-sectional study was conducted on 500 male patients admitted to a de-addiction centre in Bangalore. Information was collected using pre-tested and structured questionnaire forms and the collected data was analyzed using statistical package for social sciences (SPSS) v 16.0 software.

RESULTS

The majority of the participants abused alcohol (92.4 %) and nicotine (74.2 %). 40.5 % of the participants initiated alcohol abuse in age groups of 12 – 18 (Years). Peer pressure (40.4 %) and curiosity (19 %) were observed as the most common reason for substance abuse. The common reason to seek de-addiction services was family pressure (22.4 %), physical health problems (14.2 %), family responsibility (12.4 %) fear of being a social outcast in the community (12 %) and psychiatric problems (10.6 %). Among the participants, 39.4 % had a family history of substance abuse and 41 % had a history of psychiatric illness. 47.4 % reported a history of child abuse.

CONCLUSIONS

Most participants initiated abuse before age of 25 mainly due to peer pressure. Proper enforcement of rules concerning under-aged substance abuse, proper peer and familial support, addressing concerns of psychiatric comorbidity and child abuse can decrease the chances of future dependency and thus lessen the burden of the problem.

KEYWORDS

De-Addiction Centre, Under-Aged Substance Abuse, Family History, Psychiatric Illness

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BACKGROUND

Substance abuse harms public health and is a major cause of morbidity and mortality among young people around the world. It is known to be one of the main reasons for premature loss of life, preventable causes of disease and as a significant disruptor of one's social and familial functioning. Substance abuse threatens their peaceful life, smooth functioning of societies and violent behaviours which leads to homicides and suicides.¹

Studies also observed underage alcohol consumption to be associated with school drop-out² and unsafe sex,³ which in turn led to poor health and alcohol dependence later in their life.⁴

Psychoactive substances include licit, illicit, and prescribed psychoactive medications. The use of substances in underage and adolescents is associated with socio-economic factors, such as gender, age, race, ethnicity, lifestyle activities, family welfare and social behaviours.⁵

Thus, substance abuse arises from a complex multidimensional interaction between the subject, the substance and society at large. Substance abuse often follows a relapsing and remitting chronic course. Hence, proper therapeutic approach involves a thorough multidisciplinary endeavour.

India traditionally has seen the use of opium, charas, bhang and ganja either as a part of leisurely consumption or in religious ceremonies without inviting negative sanctions from the local community.⁶ Advances in both pharmacotherapeutic or psychotherapeutic approaches of treatment have been instrumental in decreasing morbidity and mortality associated with substance abuse significantly. Despite this, the treatment-seeking behaviour is still low and late in the life cycle of addiction. This has led to poor utilization and poor development of de-addiction services in the country.

An Indian study on de-addiction centre patients found positive outcome (55 %) and negative outcome (35 %) at the end of one year follow up.⁷ The main predictors for negative outcome were younger age of onset of substance abuse, which was associated with a lower average age of problem drinking, early-onset and diagnosis of dependence pattern to the substance.

The negative outcome was also associated with increased psychosocial stressors one was experiencing, familial substance abuse and dependence history and increased number of days in follow up under mental health treatment.

The current dimension of the extent and pattern of psychoactive substance use and the problems associated with their use are not well documented due to a smaller number of study participants and the non-availability of a properly structured questionnaire.

Also understanding the socio-demographic features of patients attending a deaddiction centre catering to the local population will give us better insight regarding more appropriate treatment and policy needs in combating the epidemic of substance abuse. Therefore, the present study aimed to address the problems faced by the substance abused participants in Bangalore, Karnataka in South India.

METHODS

The present cross-sectional study included 500 male participants who visited the de-addiction clinic as out-patient attached to the department of psychiatry, at a medical college hospital in Bangalore from January 2019 to February 2020. A convenient sampling method was used to recruit patients. Using power and sample size calculation program software (version 2.1.31) the sample size was calculated. Presuming that the expected prevalence of substance use is 1.0 % and allowing for 10 % error, the sample size was calculated to be 500 respondents which yielded 80 % of the power. The inclusion criteria for the study were patients with a history of substance between the age of 18 and 65 years. Patients with complicated substance-related withdrawal symptoms, medical and psychiatric symptoms impeding a proper clinical interview were excluded from the study.

The study was approved by the institutional ethics committee (IEC no. RRMCH – IEC / 13 / 2017 - 18 dated 11 / 06 / 2018). Written informed consent was obtained from all the study patients before enrolling on this study. Using the pre-tested, semi-structured questionnaire the socio-demographic characteristics viz., gender, age, individual annual income, educational status and other characteristics like age of onset of substance abuse, reasons for drug abuse and types of drug users were assessed. It also accessed past and family history of substance abuse. A history of abuse in childhood was noted.

This included all forms of abuse like verbal, physical, emotional, sexual and child neglect. M.I.N.I. english version 5.0.0 plus was used for the assessment of psychiatric comorbidity for all the participants.⁸

The diagnosis was made using the international classification of diseases (ICD) 10 criteria by a psychiatrist. Descriptive statistics were calculated using SPSS software version 16.0. Qualitative data were presented as a percentage.

Analysis of variance (ANOVA) was used to compare quantitative data between the different age groups. P - value of < 0.05 was considered to be statistically significant.

RESULTS

The present study was conducted with 500 male participants. Their age ranged between 18 to 55 years with the mean age of 32.9 years and SD \pm 9.6. It was observed that 46.6 % of participants were in the age group of 26 to 35 years, 23.8 % were in the age group of 36 to 45 years, 19.4 % were in the age group of 18 to 25 years and 10.2 % were in the age group of 46 to 55 years (Table 1). However, the age of onset of substance abuse was predominant in 12 to 18 years (43.6 %) age group participants followed by 35.6 % in the age group 19 to 25 and 20.8 % in 26 to 35. All polysubstance abusers and subjects who abused cannabis, opioids, sedatives, cocaine and inhalants started using substance before age of 25 and the majority began before age of 18.

The onset of initiation of substance and types of substance abuse by the studied participants were shown with a significant association for alcohol, nicotine, sedatives and poly-substance abuse between the different age group studied (Table 2). In the present study, greater proportion of the patients were from urban area (75.6 %). Most subjects came from a nuclear family (75.6 %). The majority of the patients were Hindus (84 %), coming from a low socio-economical background (58 %). 68.8 % of overall substances users were married but only 18.2 % of the poly-substance abuser were in a marital relationship.

In addition, most of the subjects had formal education up to 10th standard (64 %) and were currently self-employed (32 %).

Peer pressure (40.4%), curiosity (19.4 %), mental stress (13.2 %) and just for fun (10.6 %) were observed to be the most common reasons for substance abuse. Financial problem (7 %), familial problems (6.6 %) and availability of substance (2.8 %) were the least pronounced reasons for initiation of substance abuse by participants (Figure 1).

Most of the patients were referred to de-addiction services of the medical college hospital by family members (42 %), while 28 % came on their own accord and 26 % were referred by medical health professionals. The common reason to seek de-addiction services was family pressure (22.4 %), physical health problems (14.2 %), family responsibility (12.4 %) fear of being a social outcast in the community (12 %) and psychiatric problems (10.6 %). 23 % of the overall substance abusers had a history of previous treatment in a de-addiction centre while this increased to 83 % among poly substances abusers.

The age at onset of substance abuse and types of substance users were documented in Table 2. Majority of the participants abused alcohol at 12 – 18 years of age (40.5 %); 19 - 25 (37 %); 26 - 35 (22.4 %) and nicotine 12 - 18 (42.8 %); 19 - 25 (39.8 %); 26 - 35 (17.2 %) which was observed in all age groups (Table 2). The history of substance withdrawal (68 %) and history of child abuse (47.4 %) were expressed by the participants. This included the history of any kind of abuse, be it verbal, physical, emotional, sexual and child neglect.

Participants also reported a family history of substance abuse (39.4 %) and a family history of psychiatric illness (18 %). Furthermore, the legal problems (30 %) and history of psychiatric illness (41 %) were present among substance abusers. Depressive disorders (21 %) anxiety disorders (18.8 %) and psychosis (5.6 %) were the most common psychiatric co-morbidity among users (Table 3). Suicidal behaviour and ideation were noted in 16.8 % of participants.

Characteristics	N	%
Age group (Years)	18 - 25	19.4
	26 - 35	46.6
	36 - 45	23.8
	46 - 55	10.2
Age of onset substance abuse (Years)	12 - 18	43.6
	19 - 25	35.6
	26 - 35	20.8
	Self	28
Referred to de-addiction centre	Relatives	42
	Medical professions	26
	Others	4

Table 1. Socio-Demographic Characteristics of Studied Participants (N = 500)

Substance	12 – 18 (Years) N (%)	19 -25 (Years) N (%)	26 – 35 (Years) N (%)	P - Value *
Alcohol (N = 464)	188 (40.5)	172 (37)	104 (22.4)	0.0001
Nicotine (N = 371)	159 (42.8)	148 (39.8)	64 (17.2)	0.0001
Opioids (N = 27)	23 (85.1)	4 (14.8)	0 (0)	NA
Cannabis (N = 68)	67 (98.5)	1 (1.5)	0 (0)	NA
Inhalants (N = 31)	30 (96.7)	1 (3.2)	0 (0)	NA
Sedatives (N = 43)	34 (79)	9 (20.9)	0 (0)	0.0001
Cocaine (N = 22)	20 (90.9)	2 (9.1)	0 (0)	NA
Polysubstance abuse (N = 65)	52 (80)	13 (20)	0 (0)	0.0001

Table 2. Age at Onset of Initiation of Substance and Types of Substance Abused by the Studied Participants (N = 500)

*One - Way ANOVA P value

Psychiatric Comorbidity	N	%
Depression	105	21
Anxiety	94	18.8
Psychosis	28	5.6
Suicidality	84	16.8

Table 3. Psychiatric Comorbidity among the Participants (N = 500)

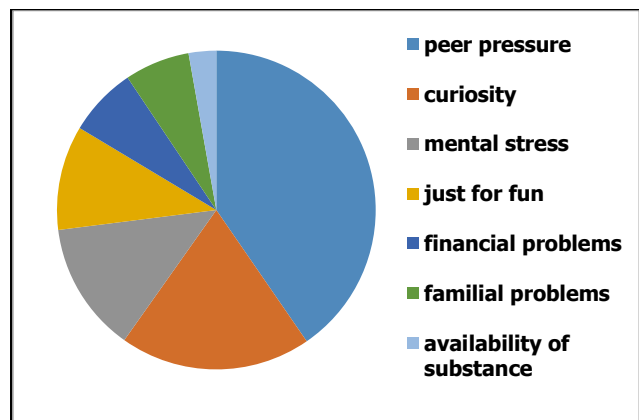


Figure 1. Reasons for Initiating Substance Use among Participants

DISCUSSION

Drug abuse is a global problem and the pattern of use and consequences of individual and socio-cultural aspects are specific. In the present study, the data on socio-demographic and types of substance abuse details were collected from individuals from a de-addiction centre associated with a medical college in Bangalore, Karnataka. The data revealed that the substance abuse by the younger age group population and alcohol consumption was predominantly due to peer pressure, curiosity and mental stress. Several studies were conducted on the effect of alcohol consumption which is the most abused drug today.⁹ The use of alcohol and cigarettes is legally permitted for adults and this tends to proceed and increase the risk of initiating the use of illicit drugs.¹⁰ A very recent study found the prevalence of alcohol use among ≥ 18 years of age as 9.7 % and exclusively among the male population it was 17.1 %. The highest prevalence (17.1 %) was among 46 – 55 years age group and the residents of joint families (37.0 %).¹¹

A study that included 60 patients from the Chennai population¹² and 112 patients from Pune patients¹³ reported that 53.3 % and 66.7 % of patients used exclusively alcohol for consumption. Similarly, our study also found that the majority of the participants (43 %) be alcohol users. In India, certain states have full control of alcohol-related legislation, excise rates and the production, distribution and sale of alcohol, their poor regulation could be the reason for increased alcohol consumption by the majority of the under-aged population. Interestingly, another study from north India in Kashmir population included 125 patients and revealed nicotine (76.8 %) to be the predominantly used substance followed by volatile substances (76.9 %) and cannabis (70.5 %).¹⁴

One study found the negative emotions strongly contributed to drug addiction while peer pressure, self-efficacy and lack of assertiveness contributed moderately.¹⁵ Contradictory to this, the current study found peer pressure to be the major contributor to drug abuse in the studied population. Previous studies have shown similar results concerning peer pressure and also the conflict situation, to be responsible for increased drug use.¹⁶ This emphasizes the role of handling peer pressure effectively through assertiveness training in teenagers and young adults.

It's very important to be aware of the age at which a person begins to use drugs. Various experts have pointed out the link between early use and the development of dependence.¹⁷ The prevalence is high among the young age group (26 - 35 years) 46.6 % followed by (36 - 45 years) 23.8 % and (46 - 55 years) 10.2 %. Similar findings were observed by a previous study conducted by Kadri et al.⁶ Another study by Tufael Baba et al. in 2013,¹⁸ on college students showed a prevalence of 37.5 %, suggesting that the young age at initiation and high prevalence are significantly associated. Similar to our study, another Gujarat based study found most substance abusers started taking substances between the ages of 11 and 20, with the mean age of initiation being 22 years \pm 6 years.¹⁹ Our study also points to the initiation of a substance early in life is linked to increased risk of poly-substance abuse and abuse of other banned substances. The factors that lead to early exposure to substances like poor interpersonal relationships in the family, adverse childhood events, risk-taking and novelty-seeking behaviours and increased prevalence of substance use among peers also become instrumental in pushing the youngsters to try multiple substances and develop dependence pattern early on.

Most substance abusers were married in our study,¹⁹ similar results were seen in another Gujarat based study with 69.9 % of subjects being married. However, low proportions of poly-substance abuse subjects were married, with most of them being single, divorced or separated. This may be due to significant personality deterioration, disturbed interpersonal relationship with family and friends, poor occupational function and financial status. Marital conflicts and spousal high expressed emotions towards substance abuse can become a perpetuating factor, leading to frequent relapses among the patients. This factor underlies the need to engage one's spouse through therapy. Substance abuse

needs to be treated more like a problematic issue in the couple and family rather than a disease of an individual.

The family history of substance use and psychiatric illness, along with interpersonal issues in the family plays a major role in the one abusing a substance. Familial and community factors also were responsible for seeking and being referred for treatment. This underlies the role of the family at different stages of a substance-dependent person which was also noted in a Puducherry based study¹¹ and a Gujarat based study.¹⁹ The family members with a history of substance abuse become role model for youngsters in the family propelling them towards substance use and addiction in the future.

Our study also showed medical health professionals also played a vital role in the treatment-seeking behaviour of the subjects as usually, it's the general practitioners, physicians and surgeons who are the common and first points of contact for the help of problematic substance abuse patients. This should motivate medical health professionals to not only treat the physical health issues associated with substance use but also encourage treatment-seeking for mental health issues associated with substance abuse.

The co-occurrence of substance abuse among psychiatrically ill patients can be due to the result of self-medication or increased vulnerability as a result of psychiatric issues. A Chandigarh based study in a de-addiction centre of a tertiary care hospital reported dual diagnosis of substance abuse and psychiatric co-morbidity in 32.4 % of the subjects.²⁰ Similar to our study, affective disorders were the most common psychiatric disorders among the substance users followed by anxiety disorders and psychotic disorders. The high rate of psychiatric morbidity like depression among substance abuser in our study was similar to results from another study Ranchi based study.²¹ The symbiosis created between substance abuse and psychiatric co-morbidity helps both the disorders to thrive. Substance abuse is used as a coping mechanism from the stress caused by mental health issues. Subjects would rather abuse substances than seek proper mental health support mainly due to misinformation and stigma.

A significant likelihood of suicidality in substance abusers was also noted in previous Bangalore based studies.²² The study also found an increased prevalence of substance abuse among male suicide attempters compared to female. Even our study found significant suicidality among the subjects. Substance abuse causes loss of inhibition and poor judgment. This can act as a vital ingredient in pushing a socio occupationally stressed subject towards suicidal ideation and at the end to completed suicide. This emphasizes the role of taking care of the mental health needs of the at-risk population. The suicidal risk inherent with substance use must be made clear to patients and their family members.

The high prevalence (47.4 %) of child abuse among our subjects further emphasizes the role of early life events in one's addictive potential. This is in sync with other studies world over.²³ In a Kenya based study, 93 % of 118 subjects aged over 18 years who reported for treatment for substance abuse had at least one adverse childhood experience.²⁴ This was much higher than that seen in our

study. This could be due to prevalent socio-economic and legal conditions prevalent in that part of the world. Child abuse may be in the form of sexual abuse, physical abuse, emotional and verbal abuse or neglect. Literature regarding the exact extent of abuse in children, its role in substance abuse in India is scant despite it being known to be quite prevalent. While the government and various other non-governmental organizations have been increasingly advocating for protection of children from various abuses in India, this is far from adequate to safeguard the children from future repercussions.

CONCLUSIONS

The prevalence of alcohol use in Bangalore, Karnataka was very high and nicotine consumption was also found at increased levels. Moreover, majority of the participants initiated while under-aged. The propensity to use multiple substances later on in life seems to be related to underage initiation of substances abuse. Peer pressures, familial substance use, early traumatic life events and mental health issues are the main reason for substance abuse. This emphasizes the need to enforce strict rules concerning underage drinking. Proper familial and community support plays a vital role in treatment-seeking behaviour among substance abusers. Family therapy targeting the significant family members with substance abuse will be vital with regards to the patient achieving early and longer remission from substance use. The therapeutic approach to the patient should also focus upon the early childhood adverse events. This will both help in alleviating the psychological trauma and reducing substance abuse. The government needs to make strict policy towards child abuse. Agencies need to be created to provide support to victims of child abuse. However, further studies are warranted with different religion, culture including other socio-demographic characteristics to be collected from a large number of individuals to confirm the current results. Also, to know the trends of substance abuse in vulnerable population over time, repeated cross-sectional studies need to be conducted in the same population.

Limitations

One of the main limitations of the study was that it was done in the outpatient setup of a medical college hospital and involved only male subjects, this can't be extrapolated to the general population. The diagnostic questionnaire used for measuring psychiatric co-morbidity M.I.N.I. does not evaluate for all the personality disorders and substance-induced psychiatric disorders. This study also didn't assess the severity of substance abuse. Despite these limitations, the study examined a large sample of substance abusers visiting a medical college hospital in Bangalore. The psychiatric diagnosis was made using a structured instrument by a psychiatrist. The impact and prospect of the current study will include that it lays the ground for further research which may help to delineate the true extent of the substance abuse problem in India. Larger community-based

studies involving all the genders would better reflect the impact of substance use on the overall population. Further substance abuse can be studied concerning the early and late onset of initiation and dependence and their risk factors. Differences among the genders concerning abuse and dependence also need to be deeply studied. Also, interventions at a young age and impact on future risk of substance abuse and dependency can be studied.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.

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