Sociodemographic characteristics and pattern of drug use among substance use disorder patients of northeast region, Bangladesh

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Abstract

Background: Substance use is one of the major public health issues throughout the world. It is not only impairing public health but also corrupting institutions, retarding socioeconomic development, threatening political stability and in some cases, impacting state security.

Objectives: To explore sociodemographic characteristics and pattern of substance use in patients with substance use disorders and to compare sociodemographic characteristics of patients with age and sex matched normal individuals.

Methods: It was a cross-sectional comparative study, carried out in the Department of Psychiatry, Sylhet MAG Osmani Medical College Hospital, Sylhet during the period of 1st January 2017 to 31st July 2018. We purposively selected 50 substance use disorder patients as cases and 50 age and sex matched normal individuals as controls.

Results: The results showed that substance use was largely a problem of the young males. There were significant differences between male and female substance users. Majority of the substance use disorder patients were from urban areas (76%), unmarried (52%), worked in service industries (34%), came from joint families (43%) and had completed secondary level education (68%). Most of the substance users started taking substances around the age of 16-25 years (70%) and started with multiple substances (32%). Cannabis was the primary drug (58%) and smoking was the main route of administration (66%) of substances.

Conclusions: Knowing the pattern of substance use and sociodemographic characteristics of substance use disorder patients, this may help the policy makers and planners of the government and non-government organizations to take appropriate initiatives to prevent substance use in the society.

Declaration of interest: None

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Keywords: Substance use; substance use disorder; sociodemographic variables; pattern of drug use

Introduction

Substance use disorder is a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems.[1] Most substances of abuse directly or indirectly target the brain's reward system by flooding the circuit with dopamine which is related to emotion and feelings of pleasure. When activated at normal levels, this system rewards our natural behaviors.[2]

The health of a man is rooted in his sociocultural environment, which affects his psychophysical development and his well-being. It is the same socio-environmental factors which determine his lifestyle and behavior. We learned from history that man has always sought respite, from trials and tribulations of daily life in certain drugs, herbs and potions which have the capacity of relieving tension, anxiety, fatigue, frustration and indeed transformation of reality into trance or ecstatic states.[3] The choice of substance depended on various factors such as age, sex, social customs, educational level, economic status, peer usage, popularity andeasy availability.[4] Drugs once concentrated in densely populated urban societies of big cities are now spreading over rural areas. Drugs have been shifted from upper to middle and lower middle class of population. Less education and youths are the major victims of drugs in Bangladesh. Women

and children are also becoming victims of trafficking, peddling and consuming drugs.[5]

An estimated 0.6% of the global adult population suffer from substance use disorders. A study conducted in National Institute of Mental Health (NIMH), Dhaka in collaboration with World Health Organization (WHO) found that 0.63% of the adult population (18 years and above) in Bangladesh had substance dependence disorder.[6] In Sylhet, the northeast division of Bangladesh, 95.2% of the dependent individuals used cannabis as the principal drug followed by amphetamine (61.9%). Around 50.0% of the drug dependent individuals were using heroin, 47.6% were using alcohol, 42.3% were using-phensedyl and 19.0% were taking pethidine/ morphine injections. Cocaine and opium were taken by 7.1% and 2.3% of the substance dependents, respectively. According to 'Green Sylhet', a non-government organization, more than 5,000 men and women have been using substances in the district. There are more than 10 rehabilitation centers in Sylhet region. Majority of the patients who were taking treatment in these rehabilitation centers were of 16 to 40 years of age.[7]

Methods

It was a cross-sectional comparative study, carried out in the Department of Psychiatry, Sylhet MAG Osmani Medical College Hospital, Sylhet during the period from 1st January 2017 to 31st July 2018. 50 substance use disorder patients who fulfilled inclusion and exclusion criteria were taken as cases. Inclusion criteria were age of 18 years and above and adequate clinical improvement after intoxication or withdrawal state, if the participant was in that state. 50 age and sex matched normal individuals who had no history of substance use were enrolled purposively from the attendees of other patients as controls. The sociodemographic information was documented by using a structured questionnaire to identify the sociodemographic characteristics and it was collected from the patients and also from their caregivers when needed. Diagnosis of substance use disorder was done by consultant psychiatrists using DSM-5.[12] sociodemographic characteristics were examined and compared between substance users and normal individuals. They were age, sex, religion, marital status, habitat, educational status, occupation, family income, family history of psychiatry illness, household composition, monthly self-income and history of substance use among family members. Information on 9 substance using patterns were collected from the cases and controls which included age of onset of taking substance, type of starter substance, type of substance currently being used, principle substance, duration of substance use, route of substance use, treatment received or not, history of hospital admission and daily expenditure on substance. Data were processed manually and analyzed with the help of SPSS 22.0. General characteristics of the patients were presented in terms of percentage, mean and standard deviation. Comparison and association were tested using the independent t-test and Chi-square test. A p value of ≤0.05 was considered statistically significant.

Results

The mean age of the control group (group A) was 29 years, whereas for case group (group B) it was 31 years. Independent t-test showed that there was no significant difference between two groups (p = 0.213). Regarding sex, chi-square test showed that there was no significant difference (p=0.646) between control group and substance user group. Regarding marital status, chi-square test showed that there was no significant difference (p=0.258) between two groups. There were 30 unmarried (60%) and 20 married (40%) respondents in group A whereas in group B, there were 23 married (46%), 26 unmarried (52%) and 1 divorced (2%) respondent. 40 respondents were living in urban (80%) and 10 respondents in rural areas (20%) in group A, while in group B, 38 respondents came from urban areas (76%) and 12 came from rural areas (24%). Regarding educational background, chi-square test showed that there was significant difference (p<0.001) between two groups. In group A, 3 of the respondents completed primary education (6%), 6 respondents completed secondary education(12%) and the rest 41 respondents were graduates (82%). In group B, 3 of the respondents completed primary education (6%), 34 respondents completed secondary education (68%) and 12 respondents completed graduation (24%). In case of occupation, chi-square test showed that there was significant difference (p<0.001) between two groups.

Table 1: Distribution of respondents according to their sociodemographic characteristics

		Group A (n=50)	Group B (n=50)	p value
Age	Mean Age	29	31	0.213
Sex	Male	47 (94)	48 (96)	0.646
	Female	3 (6)	2 (4)	
Religion	Islam	42 (84)	47 (94)	0.110
	Hinduism	8 (16)	3 (6)	
	Unmarried	30 (60)	23 (46)	0.258
Marital status	Married	20 (40)	26 (52)	
	Urban	40 (80)	38 (76)	0.629
Habitat	Rural	10 (20)	12 (24)	
	Primary	3 (6)	3 (6)	0.000
Education	Secondary	6 (12)	34 (68)	
	Graduate	41 (82)	12 (24)	
	Student	25 (50)	3 (6)	0.000
Occupation	Service	20 (40)	17 (34)	
	Business	2 (4)	13 (26)	
	Unemployed	1 (2)	12 (24)	
	Others	2 (4)	5 (10)	

Cell values are expressed in frequency (%)

Regarding family income, chi-square test showed significant difference (p=0.041) between two groups but no significant difference (p=0.355) was seen in case of monthly self-income. It also showed that there were significant differences between two groups, in regards of family history of psychiatric illness (p=0.005) and household composition (p=0.036).

Table 2: Characteristics of respondents

		Group A (n=50)	Group B (n=50)	p value
Family income	<30000	7 (14)	8 (16)	**0.041**
	300,00-500,00	25 (50)	13 (26)	
	500,00-100,000	13 (26)	15 (30)	
	>100,000	5 (10)	14 (28)	
Monthly self-income	<100,00	6 (12)	7 (14)	**0.355**
	100,00-200,00	13 (26)	11 (22)	
	200,00-300,00	9 (18)	3 (6)	
	>300,00	12 (24)	14 (28)	
	No income	10 (20)	15 (30)	
				0.005
Family history of psychiatric illness	Present	6 (12)	18 (36)	
	Absent	44 (88)	32 (64)	**0.036**
Household composition	Nuclear	31 (62)	18 (36)	
	Joint	16 (32)	27 (43)	
	With others	1 (2)	-	
	Alone	2 (4)	5 (10)	

Cell values are expressed in frequency (%)

10 out of 50 respondents (20%) admitted that they have substance users inthe family and the rest 80% did not have any family members using substance.In group A, 14% of the respondents admitted that they started taking drugs at a very early age of 10-15 years. 38%, 32% and 10% of the respondents started taking drugs at the age of 16-20 years, 21-25 years and 26-30 years, respectively and 6% of the respondents started taking drugs after the age of 30 years.

Figure 1: Types of substances used at the beginning of substance use
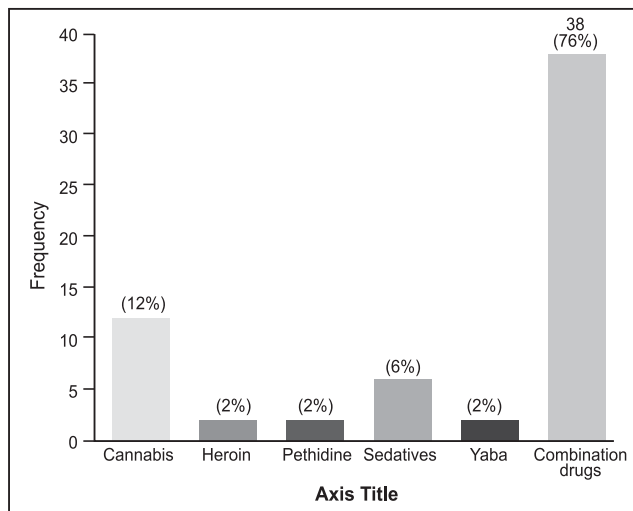
12 respondents (24%) used a single substance as starter, whereas 38 respondents (76%) started with more than one substance (Figure 1). The most common substance was cannabis (38%) followed by combination of at least two or more substances (32%). Amphetamine users made up 10%, sedatives users 8% and heroine and pethidine users 3% of the total users while 6% of the respondents currently did not take any substance. Cannabis(58%) was the highest percentage of the principal drug being used, followed by amphetamine (16%), heroin and sedatives (8%). The percentage of respondents using pethidine and phensedyl as the principal drug were 2% and 4%, respectively. Combination of cannabis and alcohol made up 2% of the users, heroin and cocaine made up 4% (Table 3).

Table 3: Main substance being used by respondents

Substance	Frequency (%)
Cannabis	29 (58%)
Heroin	4 (8%)
Pethidine	1 (2)
Sedative	4 (8%)
Amphetamine	8 (16%)

| Substance	Frequency (%)
Phensedyl	2 (4%)
Cannabis and alcohol	1 (2%)
Heroin + Cocaine	2 (4%)
Total	**50 (100%)**

Duration of use was 1-5 years for 58%, 6-10 years for 6%, 11-15 years for 20% and15-20 years for 6% of the respondents. 10% of the respondents were using substance for more than 20 years. Majority of the respondents (66%) were taking substance through smoking, followed by combination of smoking and swallowing (16%).

Figure 2: Route of substance taking among users
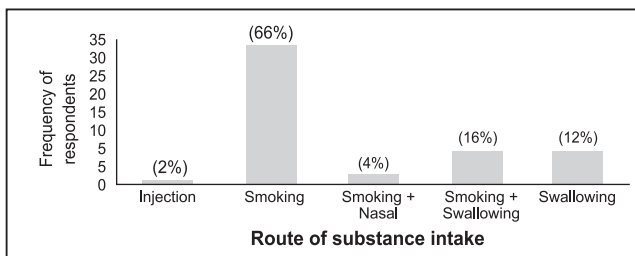
32 respondents (64%) received treatment 1-5 times, 7 respondents (14%) 6-10 times and 2 respondents (4%) more than 10 times. Respondents who had never received treatment made up 18% of the total respondents. 20 respondents (40%) were admitted in the hospital once, 8 respondents (16%) twice and 12 (24%) had never been admitted to the hospital due to substance use. Daily expenditure of substance users to obtain the substance is shown in figure 3.

Figure 3: Daily expenditure for substance using behavior
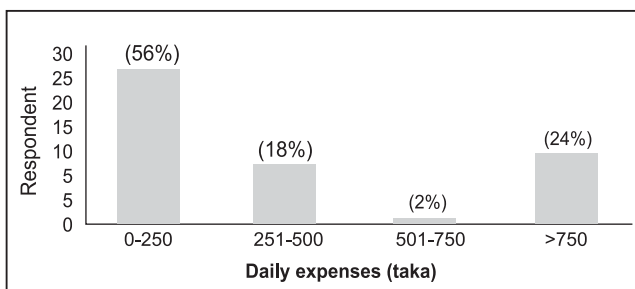
Discussion

Substance users' group and control group differed significantly in their educational background, occupation, family income, family history of psychiatric illness and household composition whereas there were no significant differences in their age, sex, religion, marital status, habitat and monthly personal income.Statistical tests showed that there was no significant difference for mean age and sex between groups, both groups matched well for age and sex.There was no significant difference in frequency regarding religion between two groups, where Muslims were higher in number than Hindus in both groups. It was expected to have higher percentage of Muslim respondents as Bangladesh has 90% Muslims and less than 10% Hindusin the population.[8] There were more unmarried than married respondents in both groups but it was not statistically significant. Grant et al reported in their study of one-year incidence and associations of DSM-IV substance use disorders, that among 34653 civilians, the odds ratio (OR) of drug dependency was higher among unmarried subjects (0.9) compared to married (0.1) and divorced subjects (0.4).[9] The results indicate that there were higher number of respondents from urban areas compared to rural areas among the substance use group. This is in line with a study where they reported that, odds ratio of drug dependency was higher in patients from urban areas (0.3) compared to rural areas (0.2).[9] There was no significant difference in the monthly self-income between the two groups. However, substance users' group had comparatively higher family income compared to control. Department of Narcotic Control Bangladesh also reported that certain substances, such as amphetamineuse was more prevalent among adolescents of aristocratic societies, particularly among the English medium students of Dhaka city and has now become a symbol of smartness, fashion and aristocracy. There were also many reported cases of children of rich people involved in amphetamine trading.[5] Substance users' group also showeda higher percentage of family members having psychiatric illnesses compared to control group. Continuous support for the family members having psychiatric illness can become stressful for a normal person, which ultimately can lead tobeing involved with substance and develop psychiatric disorders like depression.[10] Previous studies have linked depressive disorders with substance abuse and dependency where patients suffering from depression and other mental disorders had higher chances of developing substance use disorders.[11] Educational background and occupation are closely related. There were less percentage of graduates and higher percentage of unemployed respondentsin the substance users' group. Previous researches had linked poor academic achievement and high rate of unemployment with substance use disorder. Findings from a survey conducted by Fergusson and Boden in New Zealand suggested that cannabis use in adolescence and early adulthood is associated with a range of adverse outcomes in later life.[12] Another study reported that

among 189 heroin users, 40.2% of the respondents passed primary level of schooling, 37% passed secondary level and only 22.8% completed graduate level.[13] The social transitions that occur during adolescence and young adulthood (10–24 years of age) are essential for a young person's later life trajectories. A study conducted in Nepal among substance users revealed that, majority (95.0%) of the substance users initiated substance use before they reached 25 years. Furthermore, more than 81.2% substance users had first time experience of substance intake before the age of 20 years and more than 32% of the drug users took substance for the first time in their life as early as 15 years of age. In Bangladesh, about 80% of the 2.5 million of the substance users are youths, aged between 15 to 30 years.[14] The findings of this study were in line with previous ones where most of the substance use respondents started using substances in their young age period (16 to 25 years). Substance use might also be influenced by family members as in this study, where 80% substance users admitted of having family members using substances.

The first used substance, main substance and current substance use pattern respondents showed that cannabis was the major drug used in all the three categories. Data collected for first used substance showed that the respondents often combined cannabis with other substances, such as alcohol, heroin, amphetamine and phensedyl. The results from this study supported a study conducted by Fergusson and Boden where they demonstrated that young people using cannabis were at substantially increased risks of using illicit substances later.[12] They suggested that the increased risk of using other illicit substances among cannabis users involve two processes. In the first process they explained that, since the use of cannabis is illegal in New Zealand (where the study was conducted), those using cannabis will often need to obtain their supplies from drug dealers, thus the contact may also expose the users to greater access and temptations to use other illicit drugs.[12] This scenario is relatable to cannabis users in Bangladesh as cannabis is categorized as illegal in Bangladesh. The second explanation is that the regular use of cannabis may encourage the users to experiment with other illicit drugs in various ways. The findings of this study replicate and extend previous studies of this cohort, that have shown the presence of strong associations between cannabis use and other forms of illicit drug use.[12,15,16] Purposive sampling method was applied in this study which might bias the result of the study. Since this was a cross-sectional study, the causal link could not be established between substance use and various other variables.

Conclusions
In recent years, substance use has significantly increased in the whole world. In South Asian countries like Bangladesh, it is a matter of growing national concern. The problem has threatened the lives of many youths and destroyed the economic and social growth of the country. It is obvious that substance use is strongly correlated with age, education, employment status, psychiatric illness in the family, source of money, types of substance, etc. So in this study, an attempt had been made to identify the sociodemographic characteristics of substance users and their substance seeking behaviors. The trend of substance use was higher in youths between 16 and 25 years of age. The study also revealed that, highest number of respondents were involved in cannabis and amphetamine addiction. Almost all of the respondents were addicted to cannabis, a low-priced drug. Psychiatrists, psychologists and the allied mental health professionals should come forward with a holistic approach to combat the situation, keeping in mind that it has an extreme negative impact not only on the particular patients, but also on the society as a whole. Finally, the identified sociodemographic characteristics and pattern of substance use among substance users may play a logistic support in identifying the reason behind drug addiction among youth. For better understanding of the issues, further multi-centered prospective and population based studies, with appropriate research tools can be carried out.

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