

# Psychiatric comorbidity among the patients with substance use disorders in Bangladesh

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## Abstract

**Background:** Substance use disorders cost more than 11 million lives per year and the relationship between substance use and comorbid mental illness has been evaluated in different contexts. The relationship is influenced by multiple factors including sociocultural and economic factors of the community. However, there is dearth in the existing literature on the psychiatric comorbidity among the substance users in Bangladesh.

**Objectives:** To explore the prevalence and pattern of comorbid mental illnesses among the patients with substance use disorders in Bangladesh.

**Methods:** This is a cross-sectional study where patients were included from Inpatient Department (IPD) and Outpatient Department (OPD) of psychiatric settings of 13 selected hospitals from Bangladesh, where psychiatric consultations were available. Sociodemographic information of the participants was collected by a pretested questionnaire and the diagnosis of mental health disorders were done by psychiatrists according to DSM-5 criteria of mental disorders.

**Results:** Among the patients with substance use disorders, 11% had comorbid mental disorders and depression (32%) was the most common comorbid mental disorder. Among other mental disorders, somatic symptom disorders (16%), anxiety disorders (15.7%), schizophrenia spectrum and other psychotic disorders (6.0%) and bipolar and related disorders (5.1%) were prevalent. Comorbid mental disorders were most frequently (36.6%) found in patients with cocaine use disorder.

**Conclusions:** Comorbid mental disorders were common in patients with different types of substance use disorders. Proper identification of different comorbid disorders will help to minimize overall treatment cost.

**Declaration of interest:** None

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**Keywords:** Substance use disorders; comorbidity; Bangladesh

## Introduction

Over 2% of the world population are suffering from different types of substance related disorders that cost death of 11 million people every year.<sup>1,2</sup> Substance abuse has reached epidemic levels across the globe with approximately 247 million drug users worldwide.<sup>3</sup> Among the global population aged 15 years and older, the annual prevalence rate for alcohol use is 42%, for tobacco use is 25% and for illicit drug use is 5%.<sup>4</sup> While rigorous data are lacking, available evidence

suggests that about 2.5-7.0 million people are using different types of substances in Bangladesh.<sup>5,6</sup> According to the National Institute of Mental Health (NIMH), Dhaka, around 34.4 lakh people are taking drugs in the country. According to a report published by NIMH, around 3.3% youths of Bangladesh who fall in the age group of 18 and above are taking drugs. Male substance users outnumbered female substance users as the male and female percentages are 4.8 % and 0.6%, respectively. There are different substances

available in Bangladesh and their impacts also vary. These are cannabis, heroin, codeine (phensedyl), amphetamine, etc.<sup>7</sup> Among the earliest psychiatry clinic-based studies published by the Department of Narcotics control in 2018, apart from nicotine, cannabis was the most commonly used substance, amphetamine along with phensedyl and heroin also took a major role in substance abuse.<sup>8</sup> The impact of substance use multiplies if there are presence of any comorbid mental health issues. Comorbidity is the presence of two or more medical conditions simultaneously regardless of their causal relationship.<sup>9</sup> Overlapping of medical conditions with psychiatric conditions put a greater challenge to the healthcare system by creating additional cost.<sup>10</sup> There are different psychiatric disorders commonly found as comorbid mental health problems in association with drug addiction. The estimated U.S. population, lifetime prevalence of comorbid alcohol and drug disorder for adults with a mental disorder was 29%.<sup>11</sup> Another study revealed that 57 to 84% of the alcohol-dependent patients encountered other psychiatric comorbidities,<sup>12</sup> where mood disorder was reported most commonly. According to a study conducted in India, the most common disorders found co-occurring with substance abuse were the depressive disorders, major depressive disorder and depressive disorder not otherwise specified. Among other comorbid disorders there were bipolar and related disorders (16%), adjustment disorders (13%), schizophrenia (11%), anxiety disorders (6%) and personality disorders (9%).<sup>13</sup> In Bangladesh, one study revealed that 55% of the drug abusers had moderate depression, 23% borderline clinical depression, 15% mild mood disturbance, 4% severe depression and 3% had extreme depression.<sup>14</sup> The study also found significant associations between the duration of taking drugs, the number of drugs and the age of first use of drugs with depression. Different substances showed different effects and also linked to different comorbid illnesses. Though research is going on in different aspects of substance use disorders, we are yet to have evidence of the comorbid psychiatric disorders among the substance users visiting in different hospitals in the country. The prevalence and pattern of the comorbid mental illness among the substance users are important to increase awareness, point out the different

types of gaps, for further service designing and policy implication in the country. This study was aimed to fill this gap in current knowledge in Bangladesh.

## Methods

The study followed a cross-sectional design where the data were collected from different hospitals where mental health services were available. The study included 3 specialized psychiatric hospitals; National Institute of Mental Health (NIMH), Dhaka, Mental Hospital, Pabna and Psychiatry Department of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. It also included 1 drug addiction center (Central Drug Addiction Treatment Center, Tejgaon, Dhaka) and 9 medical colleges with fully established psychiatry departments from different divisions of Bangladesh. As a hospital-based study, both the Inpatient Department (IPD) and Outpatient Department (OPD) were included to collect study samples.

The study was conducted with all the psychiatric patients who visited 13 key psychiatric service settings during the period of September 2017 to June 2018. The inclusion criteria were lifetime history of any substance use and being a residence of Bangladesh during the last 12 months. During this period, a total 19,662 patients visited these 13 settings and they were interviewed. Among them 9,143 of them met the inclusion criteria who were seeking treatment for their addiction problems. A customized questionnaire was used to acquire information on gender, age, educational level, employment status, types of family, number of family members and other relevant information. DSM-5<sup>15</sup> criteria for diagnosis was used to diagnose both the substance use disorder and presence of mental disorders. For diagnosis, DSM-5 was used because it serves as the principal authority for psychiatric diagnoses all over the world. DSM-5 was published by the American Psychiatric Association (2013). It is a clinical tool to use for diagnosis of mental disorders. To use the tool, multiple training sessions were held to make the diagnosis similar for all the participants. Mini International Neuropsychiatric Interview (MINI) was used for the screening purpose in the study<sup>16</sup> which is a fully structured diagnostic questionnaire that provides a brief and accurate assess

ment. The MINI is also used to report current and lifetime episodes of different mental disorders. Other than clinical interview, MINI is an effective tool to diagnose different comorbid disorders.<sup>17</sup>

In the first stage, recruitment of research associates, training of them and pre-testing were done. Local coordinators (psychiatrists), medicine specialists, other specialists, research psychiatrists and research officers were recruited according to the research protocol. Before starting the data collection, pretesting of questionnaires were done in two study sites and after that the final questionnaire was developed. Then data collection was made from different settings. At first, research psychiatrists confirmed the diagnosis based on DSM-5 criteria of mental disorders, after taking written informed consent from the samples or from their guardians. Then their detailed socio-economic, related clinical and substance use related information were collected. The consulting psychiatrist was also responsible for confirming the comorbid mental illness.

**Results**

Initially, data were collected from 19,662 patients from both indoor and outdoor settings. Among them, 9,143 patients matched our inclusion criteria of the study and they have been included as sample (N=9143). 64.8% were male and 35.2% were female. The mean age of the participants was 39.2 (SD: 13.9).

**Table 1: Demographic information of the participants with history of substance use (lifetime) (N=9143)**

	Characteristic	Frequency (n)	Percentage (%)
Sex	Female	3222	35.2
	Male	5921	64.8
Family types	Extended	3353	36.7
	Nuclear	5790	63.3
	Illiterate	2831	31.0
Education	Attended Institutional education	5727	62.6
	No Institutional education	585	6.4
	Married and living together	7608	83.2
Marital status	Unmarried	907	9.9
	Living separated	198	2.1

	Characteristic	Frequency (n)	Percentage (%)
Marital status	Divorced	52	0.5
	Others (Death of spouse)	378	4.1
Family history of substance abuse	Yes	3252	35.6
	No	5276	57.7
	No Information Available	615	6.7
Family history of psychiatric illness	Yes	456	5.0
	No	8687	95.0

Out of the 9,143 participants, about 62.6% of the respondents attended institutional education. 3252 respondents (35.6%) had family history of substance abuse.

**Table 2: Prevalence of mental disorders among all types of patient with substance use (n=1007)**

Type of mental disorder	Frequency (n)	Percentage (%)
Neurodevelopmental disorders	14	1.4
Bipolar and related disorders	51	5.1
Schizophrenia spectrum and other psychotic disorders	60	6.0
Depressive disorders	322	32.0
Delusional disorder	12	1.2
Dementia	13	1.3
Conduct disorder	18	1.8
Anxiety disorders	158	15.7
Somatic symptom disorders	161	16.0
Adjustment disorders	13	1.3
Premature (Early)	22	2.2
Obsessive-compulsive disorders	33	3.3
Antisocial personality disorder	7	0.7
Conversion disorder	7	0.7
Erectile disorder	25	2.5
Panic disorder	28	2.8
Insomnia disorder	36	3.6
Specific/social phobia	2	0.2
Borderline personality disorder	13	1.3
Acute stress disorder	7	0.7
Others	5	0.5
<b>Total</b>	<b>1007</b>	<b>100</b>

Among the patients with different types of substance use disorders, comorbid mental disorders were found in 1007 (11.0%) patients. Among the comorbidities, depressive disorders were 32%, somatic symptom disorders 16% and anxiety disorders 15.7%.

Other than these, schizophrenia spectrum and other psychotic disorders (6.0%) and bipolar and related disorders (5.1%) were also commonly present. In the substance use profile, tobacco was a widely noticeable substance of abuse. Other than tobacco, alcohol, cannabis, amphetamine and opioid were most widely used.

**Table 2: Prevalence of mental disorders among all types of patient with substance use (n=1007)**

Substance	Number of People with comorbid psychiatric disorder	Percentage (%)
Tobacco	1001	11.0
Alcohol	42	12.2
Cannabis	40	12.1
Cocaine	11	36.6
Amphetamine	12	10.7
Inhalant	4	10.8
Sleeping pill	9	15.0
Hallucinogen	1	6.6
Opioid	3	6.3
Other substances	8	13.7

Table 3 shows that the psychiatric comorbidity was higher among the small number of cocaine users. In the following tables we represented the comorbid mental disorders among the patients using different substances.

**Table 4: Prevalence of mental disorders among the lifetime tobacco users (n=1001)**

Mental disorder	Frequency (n)	Percentage (%)
Neurodevelopmental disorders	14	1.4
Bipolar and related disorders	50	5.0
Schizophrenia spectrum	59	5.9
Depressive disorders	322	32.2
Delusional disorder	11	1.1
Dementia	13	1.3
Conduct disorder	18	1.8
Anxiety disorders	158	15.8
Somatic symptom disorders	160	16.0
Adjustment disorders	13	1.3
Premature (Early) ejaculation	22	2.2
Obsessive-compulsive disorders	32	3.2
Antisocial personality disorder	7	0.7
Conversion disorder	7	0.7

Mental disorder	Frequency (n)	Percentage (%)
Erectile dysfunction	25	2.5
Panic disorder	28	2.8
Insomnia disorder	36	3.6
Specific/social phobia	2	0.2
Borderline personality disorder	12	1.2
Acute stress disorder	7	0.7
Others	5	0.5
<b>Total</b>	<b>1001</b>	<b>100</b>

We observed depression was the most common comorbid psychiatric illness (32.2%) among the patients with tobacco use disorders (Table 4). Other than depression, somatic symptom disorders (16.0%) and anxiety disorders (15.8%) were also prevalent.

**Table 5: Prevalence of mental disorders among lifetime alcohol users (n=342)**

Mental disorder	Frequency (n)	Percentage (%)
Bipolar and related disorders	6	14.3
Schizophrenia spectrum and other psychotic disorders	8	19.0
Depressive disorders	9	21.4
Delusional disorder	2	4.8
Anxiety disorders	4	9.5
Somatic symptom disorders	3	7.1
Adjustment disorders	1	2.4
Premature(Early) ejaculation	1	2.4
Antisocial personality disorder	4	9.5
Erectile disorder	1	2.4
Borderline personality disorder	3	7.1
<b>Total</b>	<b>42</b>	<b>100</b>

Among the comorbid disorders of alcohol users, depressive disorders were the most prevalent condition (21.4%); schizophrenia spectrum and other psychotic disorders, bipolar and related disorders, anxiety disorders and antisocial personality disorder were found in 19.0%, 14.3%, 9.5% and 9.5% respondents, respectively (Table 5).

**Table 6: Prevalence of mental disorders among lifetime cannabis users (n=328)**

Mental disorder	Frequency (n)	Percentage (%)
Neurodevelopmental disorders	1	2.5

Mental disorder	Frequency (n)	Percentage (%)
Bipolar and related disorders	7	17.5
Schizophrenia spectrum and other psychotic disorders	6	15.0
Depressive disorders	13	32.5
Anxiety disorders	7	17.5
Somatic symptom disorders	1	2.5
Adjustment disorders	2	5.0
Premature(Early) ejaculation	1	2.5
Antisocial personality disorder	1	2.5
Borderline personality disorder	1	2.5
<b>Total</b>	<b>40</b>	<b>100</b>

Depression was also the most common comorbid diagnosis (32.5%) among the respondents who were using cannabis (Table 6). Anxiety disorders, schizophrenia spectrum and other psychotic disorders were also common amongst them.

**Table 7: Prevalence of mental disorders among lifetime amphetamine users (n=112)**

Mental disorder	Frequency (n)	Percentage (%)
Bipolar and related disorders	1	8.3
Schizophrenia spectrum and other psychotic disorders	1	8.3
Depressive disorders	7	58.3
Anxiety disorders	2	16.7
Borderline personality disorder	1	8.3
<b>Total</b>	<b>12</b>	<b>100</b>

From Table 7, among amphetamine users, depressive disorders were the most common comorbid condition (58.3%).

**Table No 8. Prevalence of mental disorders among lifetime sleeping pill user (n=60)**

Mental disorder	Frequency (n)	Percentage (%)
Bipolar and related disorders	2	22.2
Schizophrenia spectrum	1	11.1
Depressive disorders	1	11.1
Anxiety disorders	3	33.3
Somatic symptom disorders	1	11.1
Borderline personality disorder	1	11.1
<b>Total</b>	<b>9</b>	<b>100.0</b>

Anxiety disorder (33.3%) and bipolar related disorders (22.2%) were the most common comorbid disorders in sleeping pill users' group (Table 8).

**Discussion**

We attempted to estimate the prevalence of co-occurring mental disorders in the patients of lifetime history of substance use disorders in Bangladesh. In this study the most commonly used substance was tobacco. Though officially the DSM-5 considered it as a substance and included in tobacco-related disorder, historically tobacco has gained some sort of acceptance in the community. Among the other form of drugs, alcohol, cannabis, amphetamine and opioid use were most prevailing. These findings were consistent with those of some earlier studies.<sup>14,18</sup> Researchers reported that half of the heavy alcohol users present with an additional psychiatric diagnosis.<sup>13,19</sup> Among the different substance abusers, most of them provided a history of multiple substance abuse. Tobacco, alcohol, cannabis, cocaine, amphetamine, inhalants, sleeping pills, hallucinogens and opioids are the most commonly used substances in Bangladesh. Among other different mental disorders, anxiety disorders and somatic symptom disorders were commonly found. Schizophrenia spectrum and other psychotic disorders were also found in respondents with almost every type of substance abuse. Bipolar and related disorders and borderline personality disorder were also observed in different types of substance users. Positive family history is correlated with more substance abuse and dependence, about 35.6% participants were found to have a positive family history of substance abuse. Substance use and related disorders have already been considered as a major global health problem and gradually it is newly affecting more families, communities and societies. It demands an early identification and holistic management plan to reduce the magnitude of the problem. The authors acknowledged few limitations of the study. First, it was conducted in hospital settings and a large segment of substance abusers avoid seeking help from the hospitals due to social and cultural stigma. Moreover, people become more interested to visit hospitals when they encounter other medical or psychiatric problems.

## Conclusions

Comorbid psychiatric disorders are common among the patients with substance use disorders. Though the comorbid substance use related disorders are increasing, the number of expert professionals is scanty and the scope for formal detailed assessment is still limited. We need to plan appropriate and evidence-based services and conduct more wide spread research to reduce the burden of the substance use and comorbid mental illness.

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