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Call for a new orientation in psychiatry in Bangladesh

Bidhan Ranjan Roy Poddar

Abstract

The Covid-19 pandemic has alarming implications for individual and collective health and emotional and social functioning. This pandemic has reemphasized the role of mental health care providers in delivering psychosocial support to their patients, health care providers, and the public with renewed focus on the need to remove stigma surrounding mental health.

Declaration of interest: None

COVID-19 pandemic is an unprecedented medical condition where antibody testing is just one measurement of the physical effects. Apart from physical sufferings, the consequences of COVID-19 on the mental health and well-being at personal and population levels are many folds.[1]

Much harder to quantify?

The impact of isolation and uncertainty caused by the deadly virus, creating indication of an upcoming greater crisis in mental health for all countries of the world. From doctors and nurses to managers dealing with anxiety in their workforce, and students of all ages suddenly are in a state of despair because the COVD-19 crisis has had an undeniable impact- not only on the front line, but on everyone.

The stigmatization of mental health issues and lack of access to qualified care has magnified since the pandemic emerged. One significant study claimed that nearly half of the US adults self-report decline in mental health, while worry and stress have increased number of calls to national helpline by eight-fold.[2]

What rest of the world including Bangladesh is experiencing is a similar mental health impact- a global mental health challenge waiting ahead.

As we all focus on reassuming some sense of normality in our lives, for many others, the psychological effects of the pandemic will remain an unbearable burden for months and years to come. To build the ridge, it is imperative that we all fill the gap- talk openly with friends, family and colleagues who may be experiencing increasing levels of stress, anxiety and depression. And once and for all, remove the stigma surrounding the conversation about mental health.

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Different types of hallucinations in schizophrenia and mood disorders: a narrative review

Mohammad Tariqul Alam, Md. Sultan-E-Monzur, Niaz Mohammad Khan, Ahsan Aziz Sarkar, Rubina Hossain, Shafinaz Mehzabin

Abstract

Background: Hallucination is one of the most important features of schizophrenia as well as other psychotic disorders. It is alsocommon in patients with mood disorders. Currently, there is a call for more research on the phenomenology of different forms of hallucinations, for both theoretical knowledge and clinical utility.

Objectives: To explore different types of hallucinations in schizophrenia and mood disorders and to review their longitudinal trajectory.

Methods: A search was carried out in Google Scholar, PubMed, Medline, Health and Internetwork Access to Research Initiative (HINARI) for English-language articles and book chapters containing the following keywords- hallucination, schizophrenia and mood disorders without date restrictions. Exclusion criteria were as follows: single case studies and reviews and publication in languages other than English.

Results: Auditory, visual, and olfactory hallucinations at index hospitalization, episodes were present inpatients with schizophrenia, schizoaffective disorder, bipolar disorder and unipolar depression. For index hospitalization, data showed that schizophrenia and schizoaffective disorder patients had more auditory and visual hallucinations than bipolar and depressive disorder patients. However, over the longitudinal trajectory of their disease, a higher percentage of schizophrenic patients had auditory and visual hallucinations than schizoaffective patients, as well as bipolar and depression patients. Also, in contrast to the initial period, schizoaffective patients did not differentiate themselves over the follow-up period from the bipolar patients. Bipolar and depression patients did not significantly differ at index hospitalization or follow-up. Study result also found that visual hallucinations differentiated the groups to a greater degree over a long period follow up course than did auditory hallucinations. These findings suggest that longitudinal course is more critical for differentiating schizophrenia and schizoaffective disorder, whereas the initial years may be more useful to differentiate schizoaffective disorder from bipolar disorder. Furthermore, studies also showed that the early presence of auditory hallucinations was associated with a reduced likelihood for a future period of recovery. No olfactory hallucinations were present at the index hospitalization in any patients.

Conclusions: Auditory and visual hallucinations occur in both psychotic and mood disorders; however, they occur at different rates, and both the early years and the longitudinal trajectory provide important information to both understand and differentiate the disorders.

Declaration of interest: None

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Keywords: Hallucination; schizophrenia; mood disorders; narrative review

Introduction

Hallucinations are a core feature of psychotic disorders and are also present frequently in mood disorders.[1] Despite the diagnostic value of hallucinations, there is currently limited information on different forms of hallucinations and their prominence in different psychotic and mood disorders. Furthermore, the longitudinal course of different forms of hallucinations is mostly unavailable. As hallucinations are one of the most commonly endorsed psychotic symptoms and can be reliably assessed, a more fulsome understanding of the presence and persistence of different types

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The longitudinal trajectory of auditory hallucinations

A generalized estimating equation model evaluated for differences in the rate of auditory hallucinations between the four patient groups over the six follow-up periods after the index hospitalization phase. The model demonstrated that schizophrenia patients had a greater rate of auditory hallucinations than schizoaffective, bipolar and depression patients. Schizoaffective patients did not differ significantly from bipolar patients but had more hallucinatory activity than depression patients. Bipolar patients did not differ from depression patients.[12,13]

The longitudinal trajectory of visual hallucinations

A generalized estimating equation model evaluated for differences in the rate of visual hallucinations between the four patient groups over the six follow-up periods after index hospitalization. The model demonstrated that schizophrenia patients had more visual hallucinatory activity than schizoaffective, bipolar and depression patients. Schizoaffective patients did not differ from bipolar or depression patients. Bipolar patients did not differ from depression patients.The generalized estimating equation model also demonstrated that the schizophrenia group had a more significant number of patients with visual hallucinations compared to schizoaffective patients. Schizoaffective patients did not differ from bipolar or depression patients. Bipolar patients did not differ from depression patients at any of the follow-ups.[14,15]

The longitudinal trajectory of olfactory hallucinations

Schizophrenia patients were most likely to report olfactory hallucinations. Only 5% of the schizoaffective patients reported hallucinations at 7.5 year follow-up and only 4% of the bipolar patients reported hallucinations, which was only at 10 year follow-up period. Depressive patients reported no olfactory hallucinations at any of the follow-ups. Schizoaffective and bipolar patients reported minimal amount of olfactory hallucinationsand depressive disorder patients reported none over along time (20 years) follow-up. This suggests olfactory hallucinations are primarily a phenomenon that occurs in schizophrenia patients and to a lesser degree in schizoaffective and bipolar patients. Similar to our findings, olfactory hallucinations were also present in 13% of the schizophrenic patients in the World Health Organization 10 County dataset, consisting of approximately 1000 patients. Other studies have found rates of olfactory hallucinations ranging from 7 to 35% in their schizophrenia-spectrum samples.[16,17]

Relationship between antipsychotic medication and hallucinations

The percentage of patients in the four groups who were on antipsychotic medications were presented at 2 year and 20 year follow-up periods. At the 2 year follow-up, 64% of the schizophrenic patients, 58% of the schizoaffective patients, 22% of the bipolar patients, and 8% of the depressive patients were on antipsychotic medications. The figures remained relatively consistent over the next 18 years. At the 20 year follow-up, 45% of the schizophrenic patients, 54% of the schizoaffective patients, 25% of the bipolar patients and 9% of the depressive patients were on antipsychotic medications.

Over the 20 years, schizophrenic and schizoaffective patients who were not on any antipsychotic medications had less auditory hallucinatory activity than patients on antipsychotic medications at all follow-ups. The percentage of schizophrenic and schizoaffective patients not on antipsychotic medications had auditory hallucinations ranging from 7 to 23% over the 20 years, whereas the percentage of patients on antipsychotic medications had auditory hallucinations ranged from 27 to 48%. Additionally, schizophrenia and schizoaffective patients not on any antipsychotic medications had less visual hallucinatory activity than patients on antipsychotic medications at the 4.5-year follow-up. The percentage of schizophrenic and schizoaffective patients not on antipsychotic medicationswho had visual hallucinations was 11%, whereas the percentage of patients on antipsychotic medications who had visual hallucinations was 33%.[12,13]

Hallucinations in other population

Hallucinations commonly occur in normal people. A recent meta-analysis found a prevalence of 6% hallucinations in the general population.[12] In another review of the average adult population using interviews, found that hallucinations were endorsed by 8–25% of the general population.[13] Furthermore, similar rates of auditory, visual and tactile hallucinations were found.

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Lastly, hallucinations that did not cause distress or impairment were substantially more common in the normal population. In this review, the baseline prevalence of hallucinatory experiences ranged from 5 to 9% and 60–95% of individuals who no longer had hallucinations over time. However, two out of three studies focusing on clinical samples of children and adolescents with hallucinations found an increased

likelihood ratio (2.5– 6.6) for transition to psychosis.14 These results are similar to our results of reduced frequency of patients with auditory and visual hallucinations after the early years of the disorder. Lastly, patients and non-patients with auditory hallucinations have synergized to form a "Hearing Voice Movement" and regional peer support group.[4] Inclusion of these groups of individuals in research will help us better understand the nature of hallucinations in its many forms.

Conclusions

From the above discussion, it can be concluded that auditory and visual hallucinations occur in both psychotic and mood disorders. However, they occur at different rates and both the early years and the longitudinal trajectory provide important information to both understand and differentiate the disorders. Secondly, it also indicates that auditory and visual hallucinations have different longitudinal trajectories and provide additional unique information for differentiating the different psychotic and mood disorders. Lastly, study results provide further evidence that auditory hallucinations are associated with lower long-term recovery for patients with psychosis. Knowledge of the longitudinal course of symptoms in different disorders is critical as this information is used for diagnosis, differentiate disorders, predict prognosis and develop a reatment plan.

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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 peopleevery year.[1,2] Substance abuse has reached epidemic levels across the globe with approximately 247 million drug users worldwide.[3] 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%.[4] While rigorous data are lacking, available evidence suggests that about 2.5-7.0 million people are using different types of substances in Bangladesh.[5,6] 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 percentagesare 4.8 % and 0.6%, respectively. There are different substances

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available in Bangladesh and their impacts also vary. These are cannabis, heroin, codeine (phensedyl), amphetamine, etc.[7] 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.[8] 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.[9] Overlapping of medical conditions with psychiatric conditions put a greater challenge to the healthcare system by creating additional cost.[10] 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%.[11] Another study revealed that 57 to 84% of the alcohol-dependent patients encountered other psychiatric comorbidities,[12] 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%).[13] 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.[14] 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 serviceswere 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[15] 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[16] 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.[17]

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 andresearch 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 socioeconomic, 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).

Table1: 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
Education	Illiterate	2831	31.0
	Attended Institutional education	5727	62.6
	No Institutional education	585	6.4
	Married and living together	7608	83.2
	Unmarried	907	9.9
Marital status	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
Adjustmentdisorders	13	1.3
Premature (Early)	22	2.2
Obsessive-compulsive disorders	33	3.3
Antisocial personalitydisorder	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
Total	**1007**	**100**

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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 patents using different subtances.

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 disorders	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
Total	**1001**	**100**

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
Total	**42**	**100**

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

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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
Total	**40**	**100**

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
Total	**12**	**100**

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 and other psychotic disorders	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
Total	**9**	**100.0**

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.[14,18] Researchers reported that half of the heavy alcohol users present with an additional psychiatric diagnosis.[13,19] 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.

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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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Duration of caregiving and psychiatric disorders among the caregivers of schizophrenia patients

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Abstract

Background: Chronic mental illness like schizophrenia has far-reaching consequences for both patients and caregivers and they also experience lots of distress and disorders like depression and anxiety. Caregivers' burden and stressors cause functional impairment and hinder the caregiving of their patients. These stressors and burdensare also related with the duration of caregiving.

Objectives: To assess the duration of caregiving and the psychiatric disorders among the caregivers of schizophrenia patients.

Methods: A cross-sectional study was conducted in National Institute of Mental Health (NIMH), Dhaka, Bangladesh during the period of June 2016 to January 2017 among the caregivers of schizophrenia patients. Socio-demographic characteristics were collected by using a semi-structured questionnaire and psychiatric diagnoses were made using the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) diagnostic criteria. The data were analyzed with SPSS version 20. Ethical issues were addressed appropriately.

Results: There were 272 caregivers of schizophrenia patients in this study. Among the caregivers, most of them were female (86.0%), married (88.2%) and housewives (72.4%) of lower or lower-middle class social status. In this study, 22.4% of the caregivers were suffering from different types of mental disorders. Among them depressive disorders were the most prevalent (11.8%) and generalized anxiety disorder was the second most (4.8%) common disorder. Mean (SD) duration of caregiving in depressive disorders was found 70.3 (39.9) months, generalized anxiety disorder 58.2 (21.3) months, panic disorder was 96 months, social anxiety disorder 24.0 months and adjustment disorders 6.0 months. The mean time spent daily on feeding and medicine intake was 1.0 (0.1) hours, cleaning was 1.1 (0.2) hours and gossiping/other tasks were found 1.3 (0.6) hours.

Conclusions: Study revealed that significant proportion of the caregivers of schizophrenia patients were suffering from psychiatric disorders and the proportion increased with the increase in duration of caregiving. Findings of the present study will encourage the service providers, policy makers and planners to address the issue carefully.

Declaration of interest: None

Introduction

Psychiatric patients usually need assistance and supervision in their daily activities and this often cause a major burden on their family members who usually take the caregiving role, thereby placing them at a great risk of mental health problems and burden.[1] Caregiving of schizophrenia patients has far-reaching consequences for both patient and their family members who are the main source of patients'care giving.[2] Families are an integral part of the care system for persons with chronic mental illnesses such as schizophrenia.[3] In Bangladesh prevalence of mental disorders is 16.05% and mentally ill patients mostly live with their families due to societal norms and as they are members of extended families; and these families play a critical role in taking care of the patients.[4] An important determinant of psychological health of an individual is interpersonal relationships. Disturbed relationship could be the cause, effect or even the aggravating factor for mental illness. Rabbani MG also

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found that the caregivers of persons with chronic mental illnesses suffer from a number of stresses and high level of burden and found more than half of those who provided major care for their patients experienced stress and burden.[5] Another study found that 40% of men and 46% of women with long standing mental illnesses lived with their families who provided major-supporting roles.[6] Patients' caregivers and their relatives experience feeling of loss, guilt, shame and anger. They are confronted with uncertainty and they feel stigmatized and socially isolated. Caregivers' burden and stressors cause functional impairment and hamper caregiving of their patients.[7,8,9] The level of a caregiver's distress has been related directly to the stress of the relative's psychosis, disturbed behaviors and comorbidities such as depression, substance abuse, suicidal behavior among patients with psychiatric disorders.[10] Caregivers' distress is also related with the duration of caring and time spent with the schizophrenia patients. There is evidence that a large number of caregivers have rate of depressive symptoms as high as 38 to 68% along with other psychosomatic complaints and symptoms of anxiety.[2] This stress and burden mostly depend on the duration of time spent for caring and duration of illness of the patient. The caregiver burden was found to increase with the duration of psychiatric illness and with the age of caregivers. There is not enough report about duration of caregiving and psychiatric illnesses among the caregivers of schizophrenia patients in Bangladesh. With regard to the importance of these in our country, the aim of the study was to evaluate the duration of caregiving and psychiatric disorders among the caregivers of schizophrenia patients.

Methods

This descriptive cross-sectional hospital-based study was conducted in the outpatient and inpatient departments of National Institute of Mental Health (NIMH), Dhaka during the study period of June 2016 to January 2017 among the caregivers of schizophrenia patients. NIMH is a 200 bed tertiary care specialized psychiatric hospital with emergency service, outpatient and inpatient departments. Patients from all over the country visit here for proper treatment. Different levels of socioeconomic population are represented here. Adult caregivers of schizophrenia patients (e.g.

parents, spouse, offspring, sibling, etc.) aged between 18 to 55 years who were staying for at least six months with the schizophrenia patients and who were the main caregivers of the patients were included in the study. Purposive sampling technique was applied for sample collection. Caregivers of schizophrenia patients with acute physical illnesses, known psychiatric illnesses and who were unwilling to participate in the study were excluded. At first, caregivers of schizophrenia patients were explained about the study and informed written consent were taken and thereafter face to face interviews were done. Socio-demographic characteristics and relevant information were collected from the participants using a semi-structured questionnaire andthe Diagnostic and Statistical Manual of Mental Disorders (DSM-5)[11] was used for the diagnosis of psychiatric disorders. All collected data were checked thoroughly to reduce any inconsistency. The data were analyzed with SPSS version 20. Ethical issues were considered and addressed appropriately.

Results

There were 272 caregivers of schizophrenia patients in this study. Most of them were female (86.0%), married (88.2%) and housewives (72.4%) of lower or lower-middle class social status. Mean (SD) age of the caregivers was 44.9 (10.1). The socio-demographic characteristics are depicted in Table 1.

Table 1: Socio-demographic characteristics of the caregivers of schizophrenia patients (N=272)

Characteristics	Frequency (n)	Percentage (%)
Age group (year)		
≤20	20	7.3
21-30	76	27.9
31-40	75	27.5
41-50	68	25.0
≥51	33	12.1
Sex		
Male	38	13.9
Female	234	86.0
Marital status		
Married	240	88.2
Unmarried	28	10.2
Divorced	4	2.4
Education		
No formal education*	46	16.9
Primary	55	20.2
Secondary	119	43.7
Higher secondary	38	13.9
Graduate and above	14	5.1
Occupation		
Unemployed	15	5.5
Service	23	8.4

Characteristic	Frequency (n)	Percentage (%)
Agriculture	15	5.5
Business	8	2.9
Housewife	197	72.4
Retired	4	1.4
Students	8	2.9
Others	2	0.7
Monthly expenditure-		
≤5000	22	8.0
5001-10000	129	47.4
10001-20000	117	43.0
≥20001	4	1.4

* No institutional background

A total of 61 caregivers (22.43%) were diagnosed with psychiatric disorders out of 272 caregivers of schizophrenia patients. Among them more than 52% were diagnosed with depressive disorders. Other findings are showed in Table 2.

Table 2: Psychiatric disorders among the caregivers of schizophrenia patients (n=61)

Diagnosis*	Frequency (n)	Percentage (%)
Depressive disorders	32	52.5
Generalized anxiety disorder	13	21.3
Panic disorder	8	13.1
Social anxiety disorder	2	3.3
Adjustment disorders	2	3.3
Somatic symptom disorders	2	3.3
Insomnia disorders	2	3.3

*Diagnosis according to DSM-5

In the present study, psychiatric diagnoses were found among caregivers who had been staying and taking care of the schizophrenia patients for prolonged period. Table 3 shows the duration (in months) of caregiving according to psychiatric diagnosis.

Table 3: Duration of caregiving according to diagnosis of the caregivers of schizophrenia patients (n=61)

Diagnosis	Frequency (n)	Min-max (months)	Mean (SD) (months)
Depressive disorders	32	20-80	70.3 (39.9)
Generalized anxiety disorder	13	24-96	58.2 (21.3)
Panic disorder	2	96-96	96.0 (0.0)
Social anxiety disorder	2	24-24	24.0 (0.0)
Adjustment disorders	2	6-6	6.0 (0.0)
Somatic symptom disorders	8	24-84	51.0 (24.6)
Insomnia disorders	2	42-42	42.0 (0.0)

Caregivers spent time taking care of their schizophrenia patients. They spent time for feeding, cleaning/bathing, gossiping with the patients. Table 4 depicts the tasks done by caregivers.

Table 4: Daily tasks and time spent by caregivers of schizophrenia patients (n=61)

Task	Min-max (hours/day)	Mean (SD) (hours/day)
Feeding (food and medicine)	1.0-1.5	1.0(0.1)
Cleaning (bathing, dressing)	1.0-2.0	1.1(0.2)
Gossiping/others	1.0-4.0	1.3 (0.6)

Family members were the usual caregivers of schizophrenia patients. In this study, female members of the family were the main caregivers of the schizophrenia patients. Table 5 shows the relationship of the caregivers with the patients.

Table 5: Caregivers' relationship with the schizophrenia patients (N=272)

Relationship	Frequency (n)	Percentage (%)
Father	19	6.9
Mother	123	45.2
Brother	6	2.2
Sister	10	3.6
Son	2	0.7
Daughter	11	4.0
Husband	11	4.0
Wife	90	33.0

Discussion

This descriptive cross-sectional study was done among the caregivers of schizophrenia patients with an aim to assess duration of caregiving and psychiatric disorders among the caregivers of the schizophrenia patients. The study findings were compared with previously published relevant studies. In this study it was observed that the mean age of the caregivers was 44.9 (10.1) years. More than three-fourth of the caregivers (80.5%) were between 20 to 50 years of age. Study conducted by Rammohan et al. found a higher mean age of the caregivers which was 54.4 (7.9) years and Perlicket al. observed a mean of 49.9 (14.6) years which were comparable with the present study.[9,12] In this study, it was observed that 86% of the caregivers were female members of the family which was comparable to study findings by Jenkins and Schumacher where female Latinos were 85% and Euro-Americans 90%,[13] which is consistent with the present study. Similar findings were also observed by other researchers.[9,12] Present study observed that about 44% of the caregivers completed secondary education and a study conducted by Martyns-Yellowe found that majority (68.2%) of the caregivers completed post-primary and higher education.[14] In the present study it was observed that most of the caregivers (72.4%) were housewives but study conducted by Hosseini observed that 44.0% caregivers were housewives which was lower than that of present study findings.[15] The differences may be due to family bonding in our country or there may be other factor(s). A total of 61 (22.43%) out of 272 caregivers of schizo

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phrenia patients were diagnosed with psychiatric disorders. Common psychiatric disorders found were depressive disorders, generalized anxiety disorder, somatic symptom disorders at 11.8%, 4.8% and 2.9% rates, respectively. Among the disorders found, more than 52% were depressive disorders. In a study conducted by Hosseini et al among the caregivers of chronic psychiatric patients 35% had psychiatric disorders whereas Pereira and Almeida found 41% had mental illnesses, both of the findings were higher than the present study.[15,16] Agermeyer et al found 33.5% anxiety disorders and 13.5% depressive symptoms in their study among the caregivers of chronic psychiatric patients.[17] In Bangladesh, a study conducted by Banu found that 23.7% of the caregivers of psychiatric patients had severe stress and another study conducted by Chowdhury found 55% had depression and 18% had anxiety.[18,19] The different findings may be due to difference in tools for evaluation, selection criteria, study periods, study places, number of respondents and also due to cultural variation.

In the present study, it was observed that mean duration of caregiving was 61.2 (33.5) months which ranged from 6 to 180 months. Rammohon et al found that mean duration of care was 73.44 (38.4) months, which was comparable with the current study.[9] Hossenei observed that more than one-third (33.5%) has a duration of 120 months or more, followed by 36 to 60 months (28.0%) and 24 to 36 months (10.05%).[15] In this study it was found that mean duration of time spent for care per dayfor feeding and intake of medicines was 1.0 (0.1) hours with a range of 1 to 1.5 hours, cleaning like bathing and dressing was 1.1 (0.2) hours with a range of 1 to 2 hours, gossiping with patient and other tasks was found 1.3 (0.6) hours with a range of 1 to 4 hours.

Regarding relationship of the caregivers with the schizophrenia patients, patients' mothers were the most common caregivers (45.2%) and second most were wives (33.0%). That means female members of the family were found to be most associated with caregiving of schizophrenia patients. Study conducted by Perlick et al found that 44.3% caregivers were parents, 23.5% were spouses, 7.8% were children, 11.5% were siblings and 12.9% were others.[12] Other study findings showed 80% were parents which support the current study findings.[20] There were few limitations in the present study, out of which small sample size, single center study, no comparison group and purposive sampling were the most important ones.

Conclusions

The present study revealed that significant proportion of the caregivers of schizophrenia patients were suffering from psychiatric disorders, mostly undiagnosed and were found to increase with the duration of caregiving. Findings of the study will help the service providers, policy makers and planners to address the issue carefully so that caregivers can get proper psychiatric services. Further large scale, multicenter, in depth study is recommended in this regard.

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Personality disorders in adult population with deliberate self-harm

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Abstract

Background: Personality disorders (PD) are common among patients with deliberate self-harm (DSH). They are linked as unique contributors to suicide related outcomes and reflect important individual differences in predicting DSH.

Objectives: To evaluate PD in adult population with DSH and in apparently healthy persons.

Methods: This was a cross-sectional, comparative study carried out in Sylhet MAG Osmani Medical College Hospital from 1st September 2016 to 31st August 2018. By purposive sampling technique, 69 patients with history of DSH, aged 18 years and above were enrolled as cases and 69 apparently healthy subjects of similar age, having no history of DSH and no biological relationship with DSH patients were enrolled as controls. Socio-demographic data were collected in a predesigned semi-structured questionnaire and Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) was applied for screening of PD. Data analysis was performed using SPSS version 22.

Results: Mean age of the cases were 21.9 (SD, 4.6) years and controls were 23.0 (SD, 4.2) years. Prevalence of PD was significantly higher in DSH group (37.7%) compared to healthy control group (11.6%); (p=0.001). Borderline personality disorder (BPD) was the most frequent type of PD in DSH group [13 (18.8%) vs. 0 (0.0%), p=0.001].

Conclusions: This study revealed significantly higher frequency of PD among patients with DSH and BPD was the most frequent type of PD. Findings of this study will encourage health professionals to develop adequate psychiatric service for PD patients with DSH to prevent repetition of self-injurious behavior and suicide.

Declaration of interest: None

Keywords: Personality disorders; deliberate self-harm; borderline personality disorder; adult population

Introduction

Deliberate self-harm (DSH) is a major public health problem and one of the important risk factors of committing suicide. Various terms like 'attempted suicide', 'deliberate self-poisoning', 'deliberate self-injury' and 'parasuicide' have been used interchangeably to define subjects who present with self-harm. The most accepted term in recent times to describe such behavior is 'Deliberate Self-Harm', which is defined as self-poisoning or injury, irrespective of the purpose of the act.[1] Approximately 4% adults in the general popu-

lation report a history of DSH and up to 1% report frequent involvement in such behaviors.[2,3] Deliberate self-injuries were found in about 20% of the adults and 40–80% of the adolescents with psychiatric disorders and among them, 74.2% were female and 25.8% were male.[2,4] A study in Bangladesh estimated that more than 10,000 people die every year due to suicide.[5] Both suicidal attempt and death were more common among females reporting 432.[8] suicidal attempts and 183.[1] deaths per 100,000 population.[6] In Bangladesh, Hussain et al carried out a study among patients with

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DSH where 60.6% were in the age range of 17-28 years, 57.5% respondents were females, 89.3% were Muslims, 46.9% were students and 30.3% were housewives. Organophosphorous compound (OPC) poisoning was the most common adopted method of DSH (59.0%) followed by ingestion of drugs (30.3%).[7] Persons who attempt DSH may have various intentions among which manipulation, threats and suicidal intentions are important. A study in Bangladesh detected PD among most of the DSH patients and also found that they were more introvert and hostile than controls.[8] Comorbidities in psychiatric disorders and PD are also frequent in patients with DSH. PD were identified in about 50% of the patients with DSH in two different studies.[9,10] BPD has been reported as the most common type of PD among patients with DSH in several studies.[9,11] One study in clinical population found PD in 40% of the suicide attempters and in 50% of the psychiatric outpatients who died committing suicide. Suicidal attempt was found in 60-70% of the patients with BPD. Antisocial, histrionic, avoidant and dependent PD have also been presented as independent risk factors for DSH.[12] Haw et al found that 92.0% of the DSH patients had at least one psychiatric disorder, 45.9% had PD and 44.1% had both psychiatric disorder and PD.[13] Another study noted 58.0% PD among patients with DSH.[11]

A study in rural Bangladesh found PD in 44.3% of the cases in parasuicide group and 5.3% in control subjects (p=0.001). Most common types of PD included emotionally unstable (impulsive and borderline) (27.5%), followed by hysteric (8.8%) and dependent (6.2%) in the parasuicide group.[14] Cluster BPD were the predominant type in suicide attempters, where BPD were 28.0%, dissocial were 17.0%, and histrionic were 15.0% in a study.[15] Among DSH patients, PD increase the rate of repetition of such behaviors and markedly elevate the risk of suicide.[16] Few studies have been conducted to recognize PD among DSH patients in Bangladesh. So, this study attempted to determine PD in adult population with DSH and encourage health professionals and policy makers to provide adequate psychiatric care to prevent DSH behaviors among this vulnerable group. Therefore, this study was an attempt to fill up the evidence-based knowledge gap in this area.

Methods
This was a cross-sectional, comparative study carried out in the Department of Psychiatry in Sylhet MAG Osmani Medical College Hospital from 1st September 2016 to 31st August 2018. Calculated sample size was 60 for each group. During this study period, 69 adult patients with DSH aged 18 years and above were included as case (Group A) by purposive sampling technique and 69 apparently healthy persons of similar age group, having no history of DSH and no biological relationship with DSH cases were taken as control (Group B). Those who failed to communicate with the researcher or were previously diagnosed with psychotic illness were excluded. Before commencement of this study, ethical approval was taken from the Ethical Review Committee and informed written consent was taken from all the participants. Socio-demographic data were collected in a predesigned semi-structured questionnaire and Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) was administered for screening PD. Ethical aspects were strictly maintained in all procedures. Statistical analysis was performed by using SPSS 22. Quantitative data were summarized as mean and standard deviation and comparisons were made between two groups by unpaired t-test. Qualitative data were summarized as frequency and percentage and comparisons between two groups were done by chi-square (χ2) and Fisher exact test. A probability (p) value of <0.05 was considered statistically significant.

Results
In this study, a total of 138 participants were enrolled (69 participants from each group) and interviewed to find out the predetermined objectives of the study. Age ranged from 18 to 40 years among DSH patients with mean age of 21.9 (SD, 4.6) years and 18 to 38 years in control group with mean age of 23.0 (SD, 4.2) years (p= 0.154). There were 85.5% patients between 18 to 25 years and 63.8% patients were female in DSH group. Most of the patients were Muslims (85.5%), from rural areas (63.8%), completed secondary level of education (40.6%), unmarried (62.3%) and had monthly family income within 5,000–50,000 BDT (79.7%). Regarding occupation, 36.2% DSH patients

were students, 18.8% were unemployed and 15.9% were housewives. 13.0% had positive family history of psychiatric illnesses. The findings regarding socio-demographic data in DSH patients were almost similar with the relevant findings in control group (Table 1).

Table 1: Distribution of respondents according to sociodemographic variables (N=138)

	Group A (n=69) n (%)	Group B (n=69) n (%)	p value
Age group (years)			
18-25	59 (85.5)	56 (81.2)	0.493
26-40	10 (14.5)	13 (18.8)	
Mean (SD)	21.9 (4.6)	23.0 (4.2)	0.154
Sex			
Male	25 (36.2)	26 (37.7)	0.860
Female	44 (63.8)	43 (62.3)	
Religion			
Islam	59 (85.5)	65 (94.2)	0.091
Hinduism	10 (14.5)	4 (5.8)	
Residence		38 (55.1)	0.298
Rural	44 (63.8)	31 (44.9)	
Urban	25 (36.2)		
Educational status		1 (1.4)	0.144
Illiterate	6 (8.7)	16 (23.2)	
Primary	10 (14.5)	20 (29.0)	
Secondary	28 (40.6)	25 (36.2)	
Higher secondary	18 (26.1)	7 (10.1)	
Graduate or above	7 (10.1)		
Marital status			
Unmarried	43 (62.3)	42 (60.9)	0.861
Married	26 (37.7)	27 (39.1)	
Family history of psychiatric illness			
Present	9 (13.0)	8 (11.6)	0.796
Absent	60 (87.0)	61 (88.4)	

PD were identified in 26 (37.7%) of the respondents in the DSH group and 8 (11.6%) of the respondents among control group and this was significantly higher in patients with DSH compared to control group (p=0.001) (Figure 1).

Figure 1: Distribution of respondents with personality disorders

Group A (n=69)   Group B (n=69)
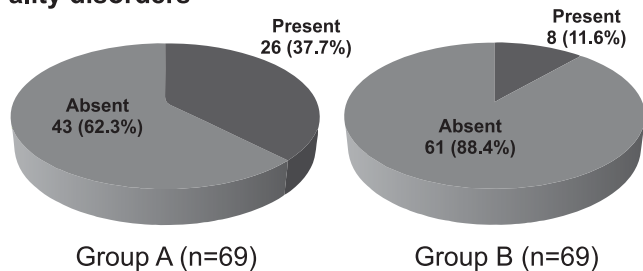
In patients with DSH, BPD was found to be the most common type consisting of 13 (18.8%) individuals; whereas none of the respondents had BPD in control group (p=0.001). Other types of PD did not differ significantly between two groups (Table 2). Two or more PD in the same individual were significantly higher in DSH group compared to control group [13 (18.8%) vs 2 (2.9%), p=0.003] and incidence of having a single PD was almost similar in both groups (Table 3).

Table 2: Distribution of respondents by type of personality disorders (N= 138)

Personality disorder	Group A (n=69) n (%)	Group-B (n=69) n (%)	p value
Avoidant	6 (8.7)	2 (2.9)	0.274
Dependent	3 (4.3)	1 (1.4)	0.690
Obsessive-compulsive	5 (7.2)	2 (2.9)	0.441
Passive-aggressive	5 (7.2)	2 (2.9)	0.441
Depressive	3 (4.3)	1 (1.4)	0.690
Paranoid	3 (4.3)	1 (1.4)	0.690
Histrionic	2 (2.9)	2 (2.9)	
Narcissistic	2 (2.9)	1 (1.4)	1.000
Borderline	13 (18.8)	-	0.001
Antisocial	2 (2.9)	-	0.496

Table 3: Distribution of respondents by number of personality disorders (N= 138)

Number of personality disorders	Group A (n=69) n (%)	Group-B (n=69) n (%)	p value
Single PD	13 (18.8)	6 (8.7)	0.084
Two or more PDs	13 (18.8)	2 (2.9)	0.003

In DSH patients, PD were found among 37.3% of the cases in the age group ranged from 18-25 years and 40.0% of the cases in the age group ranged from 26-40 years, 40.0% were males, 40.0% were Muslims, 52.0% were urban habitants, 39.5% were unmarried individuals and 40.0% were middle income group participants which did not vary significantly in relation to age group, sex, religion, habitant and marrital status of control group. Significantly higher PD were detected in illiterate patients with DSH (83.3%) and in DSH patients with positive family history of psychiatric illness (77.8%) (Table 4).

Table 4: PD according to educational status and family history of psychiatric illness in patients with DSH

	Personality disorder		p value
	Present	Absent	
Educational status			
Illiterate (n=6)	5 (83.3)	1 (16.7)	0.016
Literate (n=63)	21 (33.3)	42 (66.7)	

Family history of psychiatric illness			
Present (n=9)	7 (77.8)	2 (22.2)	0.008
Absent (n=60)	19 (31.7)	41 (68.3)	

OPC poisoning was found to be the most frequent mode of DSH consisting of 33.3% of the cases followed by ingestion of sedatives (24.4%), taking household cleansers (23.2%), self-cutting (7.2%), hanging (7.2%) and by other methods (4.2%).

Discussion

Incidence of PD was significantly higher in group A than in group B [(37.7% vs. 11.6%), p= 0.001] in this study. Several other studies found PD in 45.9%, 44.3%, 52% and 31.3% of the patients with DSH which were similar to the findings of the present study.[13,14,17,18] Another study in Bangladesh reported PD or conduct disorders to be very low (9.1%) in suicide attempters.[19] In this study, BPD was the most frequent type of PD consisting of 13 (18.8%) patients with DSH whereas it was absent among controls (p=0.001). BPD was detected as the most common type of PD in different studies.[9,11,14,15] A study carried out in Malaysia found 56% paranoid PD and 14% BPD in the DSH cases; whereas 24% paranoid PD and no BPD in controls (p=0.001 and p=0.019 respectively).[20] Wide differences in number and types of PD in these studies may be due to variation in study populations and diagnostic tools used. Single PD was 18.8% among self-harmed group and 8.7% among control which did not differ significantly (p= 0.084) but statistically significant difference was noted in subjects having more than one PD among DSH group compared to control group in this study [18.8% vs 2 2.9%, (p= 0.003)]. This finding correlated with the study finding of Haw et al, who observed that 17.1% patients with DSH had single PD and 28.8% patients with DSH had more than one PD.[13] Other types of PD such as avoidant (8.7%), obsessive-compulsive (7.2%), passive-aggressive (7.2%), dependent (4.3%), depressive (4.3%), paranoid (4.3%), histrionic (2.9%), narcissistic (2.9%) and antisocial (2.9%) PD were in patients with DSH and did not vary significantly compared to the corresponding PD in control group and this correlated with the findings of two other studies done by Feroz et al. and Nabi and Ghildiyal.[6,15]

In this study, mean age was 21.9 (SD, 4.6) years in patients with DSH and 23.0 (SD, 4.1) years in controls (p= 0.154). The mean age of DSH patients was found to be 24.5 (SD, 9) years by Nojomi et al. and 26.9 (SD, 10.6) years by Sreelatha et al. which were consistent with the findings of this study.[21,22] Among patients with DSH, 85.5% were in the age range of 18-25 years and 14.5% were 26-40 years. Almost similar findings were reported by Haw et al. where 41.3% patients with DSH were in the age range of 15-24 years and 24.0% in the age range of 25-34 years. Qusar et al found 75.0% of suicide attempters were below the age of 30 years.[13,19] Conclusions can be made that this age group (18-30 years) is highly vulnerable for this type of problems and it markedly affects their productivity of life. PD were detected in 37.3% participants in the 18-25 age group and 40.0% participants in the 26-40 age group among DSH patients in this study, which was consistent with a comparative study of PD among DSH patients, which found 58.5% PD patients were younger (15–24 years) and 62.1% PD patients were older (45–74 years).[23] The higher number of PD in elderly subjects may be due to less number of patients included in the elderly group in that study. On the other hand, no patients with DSH in 45-74 year age group was found in this study.

Among the patients with DSH, 40.0% males and 36.4% females had PD in the present study (p= 0.764). This finding was relavent to the findings of a study that reported 51.3% male and 43.1% female patients with DSH had PD.[13] PD was identified in 37.3% Muslims and 40.0% Hindus (p= 0.870), 48.0% students and 31.8% from other occupations (p= 0.182), 39.5% unmarried and 34.6% married (p= 0.683); 50.0% belonged to high income group, 40.0% middle income group and 20.0% from low income group (p= 0.501) in patients with DSH in this study. This indicates that religion, occupation, marital status and income did not affect the incidence of PD in patients with DSH. Further studies are needed in these areas to make a more justifiable comment.

This study also revealed that, PD were significantly common in illiterate patients (83.3%) with DSH compared to literate patients (p= 0.016). The reason may be that very low number of illiterate patients with DSH were found in this study. Positive family history of psychiatric illness in DSH patients with PD (77.8%) were also significantly high (p= 0.008) in comparison

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to DSH patients who had no family history of psychiatric illness. So it may be concluded that positive family history of psychiatric illness increases vulnerability to self-harm in patients with PD in some way. This study also showed that OPC poisoning was the most frequent way of causing DSH (33.3%), followed by sedative overdose (24.4%), ingestion of household corrosive cleansers (23.2%), self-cutting (7.2%), hanging (7.2%) and other methods (4.2%). These findings correlated with the study findings done by Krishna et al. who found that 37.0% cases of self-harm were OPC poisoning, 21.5% were ingestion of household chemicals, 37.5% consumed tablets and 4% used other methods (drowning, hanging and self cutting). Rao et al. reported that OPC poisoning was the most frequent method of suicidal attempt.[17,24] The reason could be that significantly higher number of subjects with DSH came from rural population and these populations had sufficient stock of insecticides to protect their cultivation. So they had easy access to OPC. Sedative poisoning held second position may be due to the fact that these drugs are easily found from drug sellers as they are over the counter products.

There were some limitations in this study like this was a cross-sectional study so the causal link could not be established, purposive sampling technique was used and a relatively small sample size was taken.

Conclusions

Significantly higher frequency of PD were found among patients with DSH in this study and BPD was the most frequent type of all PD. Due to lack of awareness about the maladaptive symptoms, PD patients do not report it to physicians and as a consequence, PD mostly remain undiagnosed. Medical health professionals, researchers and policy makers should come forward with a view for active assessment and planned interventions for PD among DSH patients to prevent such acts. Further large scale multicenter studies are required to evaluate PD in DSH patients to reach more justifiable conclusions and recommendations. Finally, we hope that findings of this study will encourage health professionals to develop adequate psychiatric services for DSH patients.

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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 ofthe 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 multiples ubstances (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

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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 asthe 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 ageof 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.

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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)	
Marital status	Unmarried	30 (60)	23 (46)	0.258
	Married	20 (40)	26 (52)	
Habitat	Urban	40 (80)	38 (76)	0.629
	Rural	10 (20)	12 (24)	
Education	Primary	3 (6)	3 (6)	0.000
	Secondary	6 (12)	34 (68)	
	Graduate	41 (82)	12 (24)	
Occupation	Student	25 (50)	3 (6)	0.000
	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 seenin 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)	
Family history of psychiatric illness	Present	6 (12)	18 (36)	**0.005**
	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
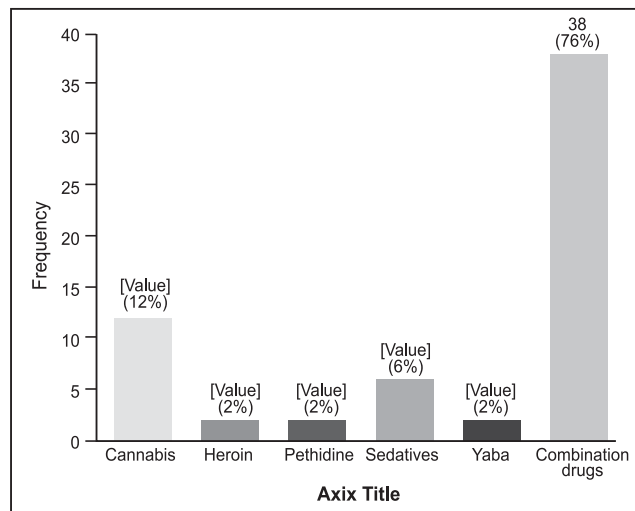
12 respondents (24%) used a single substance as starter, whereas 38 respondents (76%) started with more than one substance (Figure 1). The most common substance was cannabis (38%) followed by combination of at least two or more substances (32%). Amphetamine users made up 10%, sedatives users 8% and heroine 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%), heroine 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%)

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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
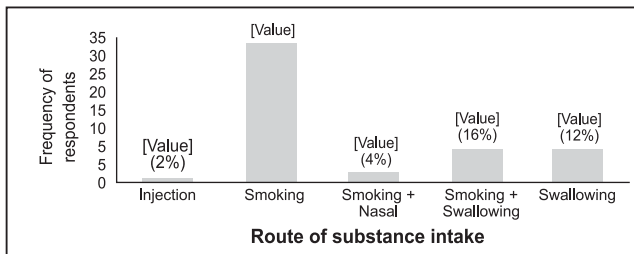
32 respondents (64%) received treatment 1-5 times, 7 respondents (14%) 6-10 times and 2 respondents (4%) more than 10 times. Respondents who had never received treatment made up 18% of the total respondents. 20 respondents (40%) were admitted in the hospital once, 8 respondents (16%) twice and 12 (24%) 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 compositi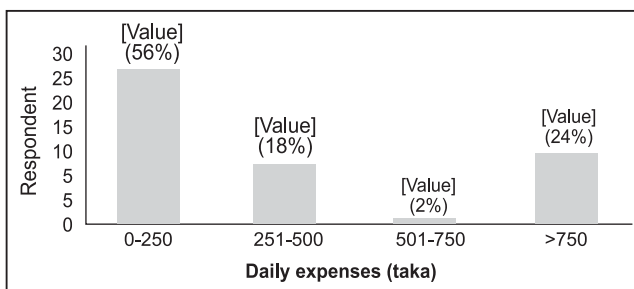on whereas there were no significant differences in their age, sex, religion, marital status, habitat and monthly personal income.Statistical tests showed that there was no significant difference for mean age and sex between groups, both groups matched well for age and sex.There was no significant difference 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 alreported in their study of one-year incidence and associations of DSM-IV substance use disorders, that among 34653 civilians, the oddsratio (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

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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 substancefor 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 numbers 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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Memory status of the adults in various areas of Bangladesh

Muhammad Shamsul Alam, Muhammad Zillur Rahman Khan

Abstract

Background: Despite concerns about cognitive decline with aging, few studies document the types and severity of memory errors adults make in everyday life.

Objectives: To evaluate the everyday memory statuses of adults of various ages in relation to their sociodemographic and other relevant factors.

Methods: It was a cross-sectional study and the sampling was a purposive one. The study period was from August 2018 to July 2019 and it was done in Rajshahi district and some other areas of Bangladesh. The respondents were adults of age ranging from 18 to 80 years. Their memory statuses were assessed by using "Memory Functioning Questionnaire" developed by Gilewski and Zelinski. The questionnaire was supplied to the respondents and later on collected from them along with the answers.

Results: The respondents were 94 in number. It was found that among 94 respondents only 2 (2.1%) had severe memory problems, 43 (45.7%) had mild memory problems and 49 (52.1%) had no memory problem. Retrospective memory was very good among 36 (38.3%) respondents, it was average in 47 (50.0%) and very bad in 11(11.7%) respondents. Forgetfulness was found in severe form among 4 (4.3%) respondents, moderate in 39 (41.5%) and not at all in 51 (54.3%) respondents.

Conclusions: This study showed that memory status was not up to the expected level which was problematic for daily healthy living and functioning.

Declaration of interest: None

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Keywords: Memory status; adults; Bangladesh

Introduction

Memory is the ability to encode, store, retain and subsequently recall information and past experiences in the human brain. It can be thought of in general terms as the use of past experiences to affect or influence current behavior.[1]

Memory represents a "biological process" incorporating a variety of cognitive attribution. Memory is the current knowledge about something that was known previously. Human memory has been examined from a variety of perspectives, ranging from psychology to engineering.[2] Human memory is fallible and unreliable depending upon circumstances. Memory involves two forms of recall: perfect and imperfect. Perfect recall involves a conjunction between memory of previous actions and memory of previous knowledge. Imperfect recall involves some knowledge imperfection within the context of the human ability to process information.[2] Memory and learning are two closely related concepts, although the relation between the two cannot be specified.[2]

Memory allows to remember and share the past events, to function efficiently and intelligently, in the present, and even to predict and prepare for the future.[3] It has been widely investigated in modern societies. Three broad types of memory, short-term memory, long-term memory and sensory memory are essential parts of human cognitive processes and human everyday activities as well.[4] It is truly amazing that human being can relive events that occurred decades in the past. And yet this amazing memory system is also prone to failure, sometimes with embar

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rassing social consequences.[3]

Disturbances of memory is related to many physical, mental and neurological problems. Physical problems may be poor nutrition, dehydration, infection, medication side effects, thyroid imbalance, etc. Among the mental causes it may be anxiety, depression, stress, substance abuse, etc. The neuro-psychiatric causes may be dementia, amnesia, epilepsy, stroke, encephalitis, hydrocephalus, traumatic brain injury, etc. It is also related to everyday life habits such as sleep, exercise, relaxation and other such factors. The objective of the study was to assess the everyday memory status of adults of various ages in relation to their sociodemographic and other relevant factors. We hoped that the study would explore the memory status of the people and thus show the path to improve cognitive abilities of the people.

Methods

It was a cross-sectional study and the sampling technique was a purposive one. The study period was from August 2018 to July 2019. It was done in Rajshahi district and some other areas of Bangladesh. The respondents were adults of age ranging from 18 to 80 years. They were male, female, of various occupations, educations and other sociodemographic background. The memory status was assessed by using "Memory Functioning Questionnaire" (MFQ) which was developed by Gilewski and Zelinski (1990).[5] MFQ is a reliable instrument with high internal consistency and strong validity.[5] The questionnaire was translated into Bangla along with questions regarding sociodemographic data and other relevant conditions. The physical and mental diseases and problems were also searched in the questionnaire. The questionnaire was supplied to the respondents and later on collected from them along with the answers. The respondents were 94 in number. The memory status was evaluated as general rating of memory, reliance of memory, retrospective functioning, frequency of forgetting, frequency of forgetting during reading, remembering past events, seriousness of forgetting and mnemonics usage. These eight components of the questionnaire were scored separately i.e. it was not summed up. General rating of the memory was done by asking whether the overall memory was in severe problem, in mild problem or in no problem. Then the retrograde

memory status was searched by asking what its condition was one year back to twenty years back and at the age of eighteen years of the respondents. Answers were suggested to be given in Likert's scale. It was the same for all the remaining components of the questionnaire.

Data were collected by the researcher and his reliable associates and were checked for consistencies as well as completeness. Data were analyzed by the author himself manually and shown as tables and bar charts in the results section duly. Ethical concerns were maintained throughout the study.

Results

In the study, majority of the respondents were females (55.3%). Among the respondents, nearly half of them (51.0%) were from 18 to 35 years and 17.0% were 56 years and above. Regarding education, most of the respondents (70.2%) were highly educated i.e. graduates and postgraduates. In regard to occupation, majority were service holders (68.0%). Majority of respondents (69.1%) were from Rajshahi district.

Table 1: Characteristics of the respondents (N=94)

	Frequency (n)	Percentage (%)
Gender		
Male	42	44.6
Female	52	55.3
Age range (years)		
18-35	48	51.0
36-55	30	31.9
≥56	16	17.0
Education		
Below SSC	4	4.2
SSC & HSC	24	25.5
Graduate	22	23.4
Postgraduate	44	46.8
Occupation		
Service	64	68.0
Business	4	4.2
Student	15	15.9
Housewife	9	9.5
Retired job holder	2	2.1
Residence		
Rajshahi	65	69.1
Chittagong	29	30.8
Physical disease		
Hypertension	19	20.2
Diabetes	12	12.7
Heart diseases	2	2.1
Stroke	1	1.0
Others	5	5.3
Mental disorder		
Depressive disorders	6	6.3

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The above table shows that 47.8% respondents stated to have some sorts of physical or mental diseases. But none stated to have direct severe memory problem related diseases such as dementia, amnestic disorders, Korsakoff's syndrome, etc. Table 2 shows that among 94 respondents only 2 (2.1%) had severe memory problems, 43 (45.7%) had mild memory problems and 49 (52.1%) had no memory problems. Retrospective memory was very good among 36 (38.3%) respondents, it was good in 47 (50.0%) and very bad in 11 (11.7%) respondents. Forgetfulness was found in severe form among 4 (4.3%) respondents, moderate in 39 (41.4%) and not at all in 51 (54.2%) respondents.

Table 2: Memory status of the respondents (N=94)

	Frequency (n)	Percentage (%)
Memory status		
No problem	49	52.1
Mild problem	43	45.7
Severe problem	2	2.1
Ability to remember past events		
Very good	36	38.3
Good	47	50.0
Very bad	11	11.7
Forgetfulness in everyday affairs		
Don't' forget	51	54.3
Sometimes forget	39	41.4
Severe forgetfulness	4	4.3

The figures also show that memory status was slightly better in women (53.8%) than men (50.0%). Younger age group had more memory problems (52.0%) than the aged persons (44.0%). Highly educated persons had better memory status (57.2%) than those having lower level of education (50.0%). Service holders were found to possess slightly higher status of memory (57.8%) than other professionals (56.6%). Those suffering from hypertension and diabetes mellitus had mild memory problems, 27.9% and 18.6%, respectively. Severe memory problems were found in 2 (2.1%) respondents having depressive illness.

Figure 1: Gender and memory status (N=94)
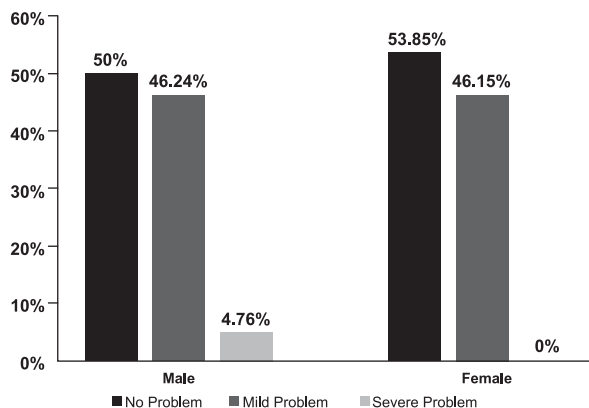
Figure 2: Educational level and memory status (N=94)
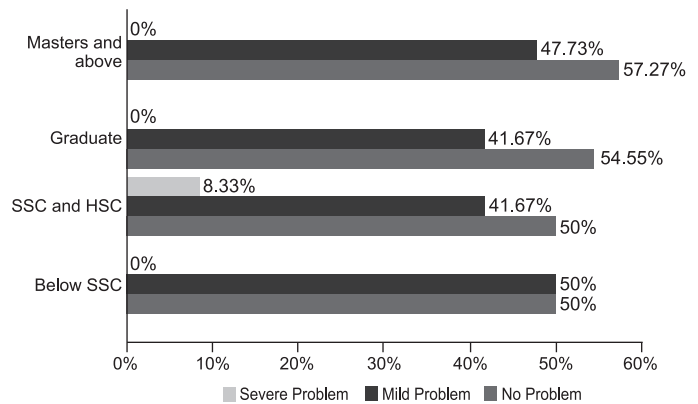
Discussion

Reports of everyday memory problems are common among adults of all ages.[6] In this study regarding memory status, 52.1% respondents had no memory problems. Memory problems were severe in 2.1% respondents and 45.7% respondents had mild memory problems. Memory problems are often found to be related to anxiety and depression.[6] In this study, 2.1% of the respondents having severe memory problems had depressive illnesses. So it was consistent with findings of other studies. Two respondents had strokes but they did not complain about any memory problem. Approximately 30% of stroke patients develop dementia within 1 year of stroke onset. Stroke affects cognitive domains, which include attention, memory, language and orientation.[7] So, these respondents need further follow up. Those who had hypertension, diabetes mellitus and heart diseases were found to have more memory problems than the others. It was found in researches that high blood pressure has adverse effect in parts of the brain involved in memory. Those who had hypertension were found to have less blood flow to the brain than those having normal blood pressure. Though in many cases there is physiological mechanism to compensate less blood flow, still there is possibility of memory problems among the patients of hypertension.[8] Memory loss may also be a consequence of diabetes mellitus due to blood vessel damage and poor blood flow to the brain. The diabetic patients are at a greater risk for mild cognitive impairment and memory problems that can sometimes lead to Alzheimer's disease.[9] Heart diseases are also related to decreased blood flow in the brain, thus may also cause vascular dementia.[10] Respondents having other physical diseases had no complaints about memory problems. But it should be noted that good health is essential for optimizing

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memory and all other cognitive functions. It was found in many studies that physical fitness was associated with better quality of life and cognitive functions.[11] None of the respondents complained about having dementia, amnesia or related problems, which indicate that they had no major neurocognitive impairments.

Here memory status was found better among the women than men. It is consistent with findings of many other studies. Females showed better autobiographical memories, random word memory recall, story recall, auditory episodic memory, semantic memory and face recognition tasks.[12] This is explained by two hypotheses. The affect intensity hypothesis states that females have superior memory function because their responses to emotional experience is more intense than men. Another hypothesis, the cognitive hypothesis, suggests that females encode events in greater details, whereas males encode the gist of events.[12]

In this study, young age group respondents had more memory problems than that of advanced age groups. Many studies showed that elderly adults perform poorly on variety of memory tasks. These age-related memory deficits probably reflect anatomical and physiological deterioration of the aging brain.[13] In the late 1950s, numerous studies showed poorer memory performance in older compared with younger age groups. It was found that more than 40% of the individuals were older than 60 years of age.[14] Despite large body of research documenting memory deficits with age, some works suggest that there may be exceptions. Memory can be determined along with biological factors some other factors also. These may be socio-emotional domains, depending on positivity, motivational relevance, or importance to the self of information, particularly in socio-emotional domain.[15] Two respondents of this study having severe memory problems had depression and they were among the younger age group. Mild memory problems were also found among the younger age group. Young people are suffering from more life stress than the advanced aged persons in recent times in our country due to academic stress, unemployment, high ambition, uncertainty of life, etc. These may be the contributing factors to their memory problems.

Highly educated respondents were found to be better in memory status due to proper utilization of their cognitive abilities. Many studies suggest such. It was observed that low education was consistently associated with a high prevalence of cognitive impairment.[16]

Service holders retain better memory abilities than other professionals due to their secured life and better utilization of cognitive abilities. Retrospective memory was found good in 88.3% respondent which is a positive finding which would be helpful to increase adaptive fitness. Prospective memory uses retrospective memory for future oriented tasks.[17]

In this study mild and severe forgetfulness were found in 41.4% and 4.2% respondents, respectively. Though forgetfulness is considered as harmful and cause exasperation, it can also be considered as an adaptive factor. It is a necessary process for refreshing memory and subsequently adapting individual behavior to the environment, allowing other memories to eventually be recorded and selected. Forgetting can also be a protective factor as it helps to not remember irrelevant and useless information. Otherwise specific and valuable information cannot be remembered easily.

There were many limitations of this study as it did not cover many aspects of memory, e.g. memory system, memory process, types of memory, etc. It also did not explore in details about the causes and consequences of memory status and problems. More researches are required to fulfil these demands.

Conclusions

In conclusion it can be said that this study finds an average state of memory abilities among the respondents. Large studies are required to find in-depth situation of memory and other cognitive abilities of the people. Then it will be possible to assess and improve intellectual health of the people which will contribute a lot to individual and community level.

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A young patient with treatment-resistant schizophrenia: a case study

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Abstract

Schizophrenia is considered as one of the major psychiatric illnesses characterized by a tuft of positive, negative and cognitive symptoms. With the introduction of chlorpromazine in the 1950s and subsequently other antipsychotic drugs, the treatment of schizophrenia was revolutionized. However, soon it was seen that some patients had little or no clinical response to treatment with multiple different antipsychotic drugs. Treatment-resistant schizophrenia is a nightmare for not only the suffering patient, but also for the treating physician. A young patient diagnosed with schizophrenia showed no clinical response to three second-generation antipsychotic drugs at optimum doses. With the administration of clozapine, dramatic improvement was seen at standard dose. The patient was successfully treated with no relapse or recurrence. This academic case is presented to create awareness and insight about treatment-resistant schizophrenia cases, so that they can be assessed properly and treated efficiently without unnecessary delay.

Declaration of interest: None

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Keywords: Treatment-resistant schizophrenia; clozapine; case study

Introduction

Schizophrenia is a serious mental illness that affects a person's thoughts, feelings, and behaviors. Patients suffering from schizophrenia often lose insight, which means they are not in touch with the outside reality. It causes significant disturbances and distress for the individual, their near and dear ones. It hampers the personal, academic, occupational, familial, social and financial aspects of the individual. Effective treatments are available with a good number of antipsychotic drugs. Some patients do not show the expected response with treatment. Treatment-resistant schizophrenia is a severe mental health burden as it prolongs the sufferings of the patient and course of the disease. It affects around 34% of thepatients with diagnosis of schizophrenia.[1] Till today only clozapine has shown its efficacy in treating the resistant cases. We documented this interesting and academic case of a young patient from Rangpur who had treatment-resistant schizophrenia and was successfully treated with clozapine.

Case Report

This 18-year old young male, a student of class XI, was brought to emergency and casualty department with the complaints of violent and aggressive behavior, undue suspiciousness, irrelevant talk, self-muttering, sleep disturbance, and belief of being followed and observed. He was immediately assessed by a psychiatrist and was tranquilized with intra-muscular haloperidol. He was admitted in the psychiatry ward for further assessment and treatment.

Detailed history of the patient was obtained, which showed that he developed the aforementioned symptoms within a short span of 3-4 days. Before the onset of symptoms, he was living an apparently normal life of a young adult. Suddenly he developed some abnormal behaviors like undue suspicion of being harmed by others and claimed that some people were observing him and his entire family. Those unknown persons were plotting to kidnap and kill his family. He confined himself within his home and also insisted his family members not to go outside. He strongly believed that he was under constant video surveillance. He developed irritability which in turn lead to violent and aggressive behavior. He used to remain very restless, moved to and fro within his house. He heard voices and conversations, talking about him and his family

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members. Those voices and conversations were derogatory and persecutory in nature. Some of the voices he could recognize as his friends and others as unknown. Later he developed self-muttering as he tried to communicate with those voices.

On mental status examination, he was found aloof, isolated and restless. Constant self-muttering was present. Prominent delusions of persecution and reference were found. He had third-person auditory hallucinations and his insight was impaired. He was diagnosed as a case of schizophrenia. Pharmacotherapy was initiated with oral second-generation antipsychotic, risperidone. Initial dose given was 4mg/day which was increased gradually. After 4 weeks at a dose of 12mg/day, the patient developed extra-pyramidal side effects (EPSE) in the form of tremor and dysphasia. As no improvement was seen, antipsychotic was shifted from risperidone to quetiapine. As per guidelines, the dose of quetiapine was increased gradually to 750mg/day to obtain expected response. As there was no response after 3 weeks of treatment with quetiapine, oral olanzapine was prescribed. With the maximum dose of olanzapine (20mg/day), no improvement of psychotic symptoms was gained in another 2 weeks. Patient was still having florid hallucinations and delusions.

With no response after administration of three antipsychotic drugs at optimum doses for adequate time period, the diagnosis was labeled as "Treatment-resistant schizophrenia". Oral clozapine was considered as the next medication according to treatment guidelines for resistant schizophrenia. Initial dose given was 12.5mg on first day, 25mg in divided doses on the following day and then gradually doses were increased. After 16 days of clozapine treatment at 300mg/day in divided doses improvement was observed. Hearing of voices, suspiciousness and self-muttering started to reduce. In the following 5 weeks, psychotic symptoms subsided completely. No hallucination or delusion was present. Patient was observed with the same dose (300mg/day) for the next two weeks before discharge. During that time the patient was completely stable. At present the patient is continuing medication and is on regular follow up. No relapse of any symptoms has been noted yet.

Discussion

Schizophrenia is a severe and chronic psychiatric disorder characterized by disturbances in thought, perception and behavior. It involves a range of cognitive, behavioral and emotional symptoms. There is no simple physical or laboratory investigation available for schizophrenia and diagnosis involves the recognition of a constellation of symptoms negatively impacting personal, social or occupational functioning.

The median lifetime prevalence of schizophrenia is approximately 4.0 per 1000 population. The features of the disorder typically emerge between mid-teens and mid-thirties, with peak age of onset of first psychotic episode in the early to mid-twenties for males and late twenties for females.[2] Gradual changes in thinking, mood and social functioning often begin before the first episode of psychosis, usually starting in mid-adolescence. Schizophrenia can be seen in younger children, but it is usually rare before adolescence.

The DSM-5 outlines the criteria to make a diagnosis of schizophrenia. The key criteria are presence of two or more of the symptoms 1.delusions 2.hallucinations 3.disorganized speech (e.g. frequent derailment or incoherence) 4.grossly disorganized or catatonic behavior 5. negative symptoms (i.e., diminished emotional expression or avolition) for at least a one-month (or longer) period of time and at least one of them must be 1, 2, or 3.

Treatment-resistant schizophrenia is defined as the persistence of symptoms despite ≥2 trials of antipsychotic medications at adequate dose and duration with documented adherence.[3,4] It occurs in up to 34% of patients with schizophrenia.[1,5,7] Although persistent symptoms may be negative or cognitive,[3] persistence of positive symptoms is generally one of the defining features of treatment-resistance.[8] Epidemiological data have revealed that male gender,[9,11] early age of onset of symptoms,[12,14] positive family history of schizophrenia,[15,16] obstetric complications,[17] lack of mood symptoms,[18] severe and prolonged premorbid manifestations,[10,16,19,20] longer period of untreated psychosis,[21,22] prominent negative and cognitive

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symptoms,[23,24] presence of neurological soft signs, abnormal involuntary movements[25] and low level of social functioning[26] are associated with treatment resistance.

Many of the adverse effects of clozapine are dose dependent and associated with the speed of titration. These tend to be more common and severe at the beginning of treatment. Very rarely, even standard maintenance doses could prove fatal in clozapine-naïve subjects.[27] For minimizing the problems, it is important to start at a very low dose and increase slowly. Table 1 shows the dose titration schedule of clozapine used in the management of the patient.

Table 1: Dose titration schedule for clozapine

Day	Morning dose (mg)	Evening dose (mg)
1	-	12.5
2	12.5	12.5
3	25	25
4	25	25
5	25	50
6	25	50
7	50	50
8	50	75
9	75	75
10	75	100
15	150	150
20	200	200
28	200	250

Conclusions

Clozapine is a unique antipsychotic medication as it is the only evidence-based treatment for treatment-resistant schizophrenia[28,30] with 60–70% of those treated showing a response.[31] Although its unique efficacy is well recognized, clozapine is still under-prescribed in most part of the world. A good number of studies clearly show that many a time it is only used after a long delay of several years.[32] The reasons for this may be the fear of side effects, and the inconvenience of therapeutic blood monitoring. This means that many patients who could get benefit from clozapine early in the course of illness are not prescribed in due time.[33,34] This causes lengthening of suffering of patients and it worsens the future prognosis. Moreover, patients with treatment-resistant schizophrenia are often treated with non-evidence based, highly toxic, high-dose antipsychotics and polypharmacy.[32] When clozapine is prescribed, it renders a significant transformation of the disease, improving psychotic symptoms and overall functioning of the patient within a short span of time.

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