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COVID-19 and mental health.

Md. Golam Rabbani

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

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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 COVID-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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Cognitive impairments in schizophrenia: a review

Niaz Mohammad Khan, Muhammad Zillur Rahman Khan, Md. Khairul Bashar, M M Jalal Uddin

Abstract

Background: Cognitive deficits in schizophrenia are profound and affect most of the patients.

Objectives: To find out the recent advancement and findings related to cognitive impairment in schizophrenia.

Methods: This narrative review was conducted with available literatures after meticulous search in PubMed, PubMed Central, Google, Google Scholar with the searching keywords.

Results: The most prominent of the cognitive deficits in schizophrenia are memory, attention, working memory, problem solving, processing speed, and social cognition. These impairments exist prior to the initiation of antipsychotic treatment and are not caused by psychotic symptoms in patients who are able to complete cognitive testing, which include most patients. The various cognitive deficits in schizophrenia have all been shown to be associated with functional outcomes such as difficulty with community functioning, difficulty with instrumental and problem-solving skills, reduced success in psychosocial rehabilitation programs and the inability to maintain successful employment.

Conclusions: Cognitive deficits are better able to explain important functional outcomes, such as work performance and independent living; than positive or negative symptoms.

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Keywords: Cognitive impairments; schizophrenia

Introduction

Schizophrenia is a severe psychiatric disorder characterized by a wide range of symptoms. These include positive symptoms, such as hallucinations and delusions, negative symptoms, such as apathy and amotivation, and impaired cognition. It affects approximately 1% of population worldwide. Cognitive features are an important but neglected component of schizophrenia. Cognitive deficits in schizophrenia are profound and affect most of the patients. Patients with schizophrenia perform 1.5 to 2.0 standard deviation below healthy controls on a variety of neurocognitive tasks. The most prominent of these deficits are memory, attention, working memory, problem solving, processing speed and social cognition.¹ These impairments exist prior to the initiation of antipsychotic treatment²

and are not caused by psychotic symptoms in patients who are able to complete cognitive testing, which include the overwhelming majority of patients.³ The various cognitive deficits in schizophrenia have all been shown to be associated with functional outcomes such as difficulty with community functioning, difficulty with instrumental and problem-solving skills, reduced success in psychosocial rehabilitation programs⁴ and the inability to maintain successful employment.⁵ In fact, cognitive deficits are better able to explain important functional outcomes, such as work performance and independent living, than positive or negative symptoms.⁶ Schizophrenia is now almost universally recognized as a neurobiological disorder with a strong neurocognitive component.^{6,7} In contrast to earlier cognitive studies of schizophrenia

that were frequently focused on distinguishing schizophrenia from “brain damage”,⁸ or on the description of schizophrenic thinking on a strictly psychological level⁹, an enormous and still growing body of neuropsychological research on schizophrenia over the last few decades has been based largely on either of two premises: (a) specification of the neurocognitive pattern(s) associated with schizophrenia may help clarify the neuroanatomical and/or neurophysiological systems that underlie expression of the disorder¹⁰ and (b) recognition that identifying cognitive strengths and weaknesses within persons with schizophrenia and the relationship of such cognitive abilities/deficits to psychosocial or independent living functions, might prove clinically useful in developing effective placement and rehabilitative plans.¹¹

Methods

With this background, the literature review was done to find out the facts and findings that would help to understand the cognitive impairment in schizophrenia better and how to address it in clinical practice. This narrative review was conducted with available literatures after meticulous search in PubMed, PubMed Central, Google, Google Scholar with the searching keywords. The keywords were cognitive impairment, schizophrenia and outcome. Several articles were found, and the authors selected the articles which were relevant, available and updated. Several peer reviewed literatures were cited which are mentioned in the reference section.

Results and discussion

Neuropathological basis of cognitive impairment in schizophrenia precise delineation of the neuropathology underlying schizophrenia in general, or its associated neurocognitive deficits, have both remained elusive despite efforts extending back over a century.

There are some general patterns reviewed below. Brain MRI studies of schizophrenia have found lower gray matter volumes (especially in the superior temporal gyrus and in medial temporal lobe and limbic structures including the amygdala, hippocampus, and parahippocampal gyrus), volume reductions in the frontal and parietal lobes, lack of normal asymmetries, enlargement of the caudate (perhaps related to medication), and developmental abnormalities such as presence of cavum septum pellucidum [thought to

reflect aberrations in neurodevelopment; patients with larger cavum septum pellucidum may show worse performance on learning and other cognitive measures.¹² There are also frequent abnormalities in the size or shape of the corpus callosum,^{13,14} supporting the view of schizophrenia as a disconnection syndrome and, as with earlier CT findings, there are enlarged ventricles.^{15,16} Functional imaging studies have found lower activity in the prefrontal cortex and abnormal activation in the temporal lobes during performance of both verbal and visual tasks.^{17,18} These findings are also true for PET and SPECT, where the literature suggests problems in the prefrontal and temporal regions of the brain.¹⁹

In resting state network studies using fMRI, results are mixed as to the effect that schizophrenia has on connectivity.²⁰ Overall, the main areas that are implicated in both resting state and activation-based fMRI studies on an assortment of cognitive-based tasks include parts of the cerebral cortex (i.e. prefrontal, cingulate and temporal areas), the limbic system (specifically the hippocampus, striatum and thalamus), and the cerebellum.²¹ Additional information has come through studies employing Diffusion Tensor Imaging (DTI), which measures the fractional anisotropy of white matter tracts (i.e. how intact the tracts are). In schizophrenia, rather consistent findings are abnormalities in these tracts, leading to increased diffusivity in the prefrontal and temporal lobes, corpus callosum, uncinate fasciculus, cingulum bundle and arcuate fasciculus.^{22,23} Other significant central nervous system findings in schizophrenia are in neurochemical dysfunction (e.g. reduced N-acetyl aspartate in the frontal and temporal lobes, hypercortisolemia and hypothalamo–pituitary–adrenal axis dysregulation and an increase in D₂ receptors in the striatum), neurophysiological dysfunction (including abnormal prepulse inhibition, decreased P300 amplitudes, and REM sleep abnormalities) and at autopsy, decreased dendritic density accompanied by normal or increased neuron density and absence of gliosis.⁷

Level and domains of cognitive impairment

Schizophrenia is best characterized as involving broad neurocognitive deficits across most cognitive domains. The average cognitive deficit associated with schizophrenia appears to be approximately one standard deviation (SD) below the mean of healthy

comparison subjects.²⁴ In regard to specific cognitive domains, the general trend in the literature seems to be that the strongest effect sizes are associated with tests of episodic memory (particularly free recall) and processing speed, with the least (but still medium to large effect size differences) associated with measures of crystallized verbal knowledge and visual-spatial skill. For instance, among studies reviewed by,²⁵ the lowest mean effect sizes were seen with the Wechsler Block Design ($d=0.46$) and Vocabulary ($d=0.53$) subtests; the strongest mean effect size was seen on tests of "Global Verbal Memory" ($d=1.41$). Similarly, the largest effect sizes were associated with tests of memory ($d=1.18$) and the lowest with tests of language function ($d=1.01$) and global cognitive function or IQ ($d=1.01$).²⁶ In a recent meta analysis of studies of persons in their first-episode of schizophrenia, also found the largest effect sizes, on average, to be associated with tests in the domain of auditory memory ($d=1.20$).²⁷ More recent studies indicate that approximately 15% to 30% (with most estimates between 20% to 25%) of schizophrenia patients have neuropsychological profiles in the normal range.^{27,28} For instance, using a previously validated procedure for systematic clinical ratings of results from an expanded Halstead-Reitan battery found 47 of the 171 (27.5%) people with schizophrenia had "neuropsychologically normal" profiles.²⁹ So it can be said that approximately 75% of schizophrenic patients have cognitive function in an impaired level.

Course of cognitive impairment in schizophrenia

There is compelling evidence that schizophrenia is associated with early premorbid cognitive deficits.³⁰ Results of two meta-analytic reviews of studies documenting premorbid IQ among persons who subsequently developed schizophrenia suggest presence of at least a mild premorbid cognitive deficit, with an average premorbid Full Scale IQ of 90 to 95 compared to the population mean of 100, with SD of 15.³¹ One longitudinal study shows that persons who developed schizophrenia had lower IQ scores when tested as children relative to the non-schizophrenic controls; moreover, the persons with schizophrenia, on average, showed a decline of approximately 10 IQ points (adjusted for changes seen in the control group) from age seven to the time when they were re-tested in their 30s.³² There has been somewhat less consen-

sus regarding the long-term course of cognitive deficits after onset of illness, but even in that regard, a general agreement appears to be emerging that, contrary to Kraepelin's initial suggestion that dementia praecox is characterized by a course of progressive decline, the cognitive deficits in schizophrenia tend to stabilize³³ and may even partially improve during the initial stabilization phase immediately after first onset.³⁴

Treatment aspect of cognitive impairment in schizophrenia

The general wisdom about the lack of beneficial effects of conventional neuroleptic medications on cognitive deficits in schizophrenia may not be true. A meta-analysis of the available empirical literature found, contrary to conventional wisdom, that there might indeed be some beneficial neurocognitive effects of conventional neuroleptic medications, which while modest in size (mean effect size $d=0.22$), at least warrant further empirical inquiry.³⁵ The era of "atypical" or "second generation" antipsychotic medications is a long and circuitous one dating back to the late 1950s, but systematic study of the effects of second generation antipsychotic medications on the neuropsychological deficits in schizophrenia began in the early to mid-1990s. The subsequent decade brought some suggestions that second-generation antipsychotic medications might partially improve certain aspects of neurocognitive functioning.³⁶ The largest and most comprehensive investigation of the cognitive effects of antipsychotic medications was provided by the NIMH-sponsored Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) schizophrenia study. The CATIE study involved a randomized double-blind comparison of schizophrenia treatment for up to 18 months with any of the five medications, including four second generation antipsychotics (olanzapine, quetiapine, risperidone, or ziprasidone) and one conventional neuroleptic (perphenazine). The cognitive effectiveness analyses were based on 817 patients who completed at least a baseline and 2-month follow-up assessments. There was a significant improvement in overall cognitive performance within each of the treatment groups, and there were no significant differences between the treatment groups in terms of changes in any of the five specific cognitive domains. Similar findings were seen in the subset of

participants for whom 6 or 18-month follow-up data were available. The difference in cognitive scores from 2 to 18-month was negligible, suggesting the bulk of improvement occurred in the first two months of treatment.³⁷ The findings from more recent report from the European First Episode Schizophrenia Trial also suggested no differential cognitive benefit of second generation antipsychotics versus conventional neuroleptics.³⁸ The question of differential cognitive benefits of second generation versus conventional neuroleptic medications is not fully settled.³⁹ Using the data from the Research on Asian Psychotropic Patterns for Antipsychotics (REAP-AP) study, it was found that a direct association between disorganized speech and the adjunctive use of mood stabilizers, cumulative dose of anxiolytics and hypnotics, and an inverse association with the adjunctive use of antiparkinson drugs.⁴⁰ In recent years, there has been an increasing recognition of the need for psychosocial rehabilitative interventions for schizophrenia. At the post-treatment assessment, those in the cognitive training group reported fewer cognitive problems and more use of compensatory strategies than those in the pharmacotherapy-alone group.^{41,42} Cognitive remediation was associated with significant improvements across all three outcomes cognitive performance, symptoms, and psychosocial functioning in schizophrenia.⁴²

Conclusions

The presence of cognitive impairment in schizophrenia patients is essential for diagnosis, management, and further studies about the etiological aspect of the disorder. Recent proposals have been made to include cognitive impairment as a diagnostic tool for schizophrenia in DSM V and ICD 11. Though there are several studies regarding cognitive function in schizophrenia in other countries, it has not been studied thoroughly in Bangladeshi schizophrenia patients. So, this issue should be given more emphasis in research matters.

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Physical comorbidity in persons with severe mental illness in Bangladesh

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Abstract

Background: Most of the studies in different parts of the world indicate a significant portion of people suffering from mental disorders have physical comorbidities which in turn impair management process. Premature mortality and disability could be reduced if there were a greater focus on comorbidity. There is almost no nationwide data about the prevalence and pattern of the problem in Bangladesh.

Objectives: The study was conducted to investigate the prevalence and types of physical comorbidity including substance use among persons with severe mental illness (SMI).

Methods: A hospital-based cross-sectional study was conducted among 2200 samples with severe mental illness (SMI) in 2 specialized psychiatry hospitals, psychiatry department of a medical university (Bangabandhu Sheikh Mujib Medical University) and an army hospital (Combined Military Hospital), psychiatry department of 8 medical college hospitals throughout the country from September 2017 to June 2018. Persons with severe mental illnesses for 10 years and above in Inpatient Department (IPD) and Outpatient Department (OPD) of the study sites were included in the study. Severe Mental Illnesses (SMI) included major depressive disorder, schizophrenia, schizoaffective disorder, bipolar disorder and organic psychotic disorders diagnosed by research psychiatrists following Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria of diagnosis. Physical comorbidities were diagnosed by history, physical examination, relevant investigations and consultation with the consultant of the respective discipline. Pretested questionnaire for socio-demographic and clinical variables and DSM 5 for diagnosis of mental illnesses were used in the survey. Local coordinators (psychiatrists), research psychiatrists, research officers, a statistician, medicine specialists and other specialists as required were recruited from the study sites. Two coordination meetings with involvement of all were held. MS Excel 2003 and SPSS version 18 were used for data entry and data analysis respectively.

Results: Among estimated 2200 samples from different sites of the study, 1648 respondents provided complete information. Among them 93.57% were 18 years or older, 45.63% female and 54.36% male. Overall, 42.0% of the respondents with severe mental illness (SMI) had physical comorbidity where diabetes mellitus (28.47%) was the most common comorbidity followed by hypertension (26.45%), obesity (6.06%), respiratory tract diseases (4.91%), dyslipidemia (4.04%), diseases of the thyroid gland (3.46%), diseases of the blood—mostly anemia (3.32%), urinary tract infection (2.89%), diseases of the digestive system (2.60%), diseases of the musculoskeletal system (2.45%) and ischemic heart disease (2.31%). Other physical comorbidities included infectious and parasitic diseases (2.16%), diseases of the skin (1.73%), diseases of the genitourinary system (1.44%), epilepsy (0.86%), chronic kidney disease (0.86%) and underweight (0.72%). As additional findings, 7.77% of the respondents with severe mental illness had comorbid substance related and addictive disorders. Among the abusing substances, cannabis (63.28%) was the most frequently used drug followed by amphetamine (18.75%), alcohol (14.06%) and other types of drugs (3.90%).

Conclusions: Physical comorbidities including using substances are common among patients with severe mental illness in Bangladesh which could result in adverse outcomes. Treatment of coexisting physical and mental disorders are required for proper management of patients with severe mental illnesses. Approach of integrative medicine involving different disciplines need to be taken for managing such patients.

Declaration of interest: Financing Authority-Non-Communicable Disease Control (NCDC) wing of Directorate General of Health Services (DGHS) under Ministry of Health & Family Welfare (MOH&FW), Government of People's Republic of Bangladesh; conducted by National Institute of Mental Health, Dhaka, Bangladesh.

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Keywords: Comorbidity; physical comorbidity; mental disorder

Introduction

When two disorders or illnesses occur in the same person, simultaneously or sequentially, they are described as comorbid. Mental illness is one of the major public health concerns all over the world where low and middle-income countries encounter higher burden with minimum resources.^{1,2} This burden of mental illnesses can be increasingly threatening as persons with psychological illnesses face different sorts of hindrance while seeking health care for other diseases also. Two or more medical conditions existing simultaneously regardless of their causal relationship can be defined as comorbidity.³ Overlapping of medical conditions with psychiatric conditions put a greater challenge to the healthcare system by creating additional costs.⁴ Such challenges are even higher with severe types of mental illnesses which are more likely to be associated with physical conditions and substance use. According to National Institute of Mental Health, USA, 'Severe Mental Illness' can be defined as a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities. "Severe Mental Illness" is a widely used expression that includes diagnosis, disability, and duration.^{5,6} Diagnosis of SMI encompasses major mental disorders, such as nonorganic psychosis, severe bipolar disorder, or personality disorders. Disability indicates physical or mental inability to meet

age appropriate role requirements, such as functioning in school, work, relationships, and self-care. Severe Mental Illness (SMI), including schizophrenia, bipolar disorder, schizoaffective disorder and major depressive disorder affects more than 4% of the adult population.⁷ Studies also showed that persons with SMI have an excess mortality rate, being two or three times as high as that in the general population^{8,9} which has widened in recent decades,^{10,11} even in countries where the quality of the healthcare system is generally acknowledged to be good.¹⁰ While these diseases are prevalent in the general population, the impact of individuals with SMI in the society is significantly greater.¹² Persons with schizophrenia have mortality rates 2 to 2.5 times higher than the general population.¹³ Patients suffering from bipolar mood disorder have high mortality rates ranging from 35% higher to twice higher than the general population.^{14,15} Those who are with depression have about 1.8 times higher mortality rates which is not limited to severe cases or to suicide.¹⁶ A study in India revealed that about 31% of psychiatric patients were living with coexisting physical illnesses and cardiovascular system (33.3%) was mostly involved in those cases followed by metabolic or endocrine diseases (27%).¹⁷ The recent "National Mental Health Survey of Bangladesh 2018-19" expressed that about 16.8% of Bangladeshis are suffering from different types of mental illnesses and

among them 92.3% do not seek medical attention.¹⁸ The prevalence rate of depressive disorders, schizophrenia spectrum disorders and bipolar and related disorders were 6.7%, 1.0% and 0.4% respectively.¹⁸

In Bangladesh mental illnesses are treated in tertiary care specialized hospitals and also in general teaching hospitals.¹⁹ The physical health of persons with severe mental illnesses are not only ignored by them but also by the health system.¹³ The person with severe mental illness is usually neglected by the society most of the time and this is likely to be more when he or she is burdened with additional comorbid disorders. Any management option is incomplete without addressing the comorbidity. Premature mortality and disability could be reduced if there was a greater focus on comorbidity. Little attention has been given to the issue of comorbidity among patients with SMI. Currently, some small scale research showed only the comorbid mental illnesses in chronic or non-communicable diseases. Bangladesh is an emerging country in all socioeconomic contexts. Health should not stay backward in this glorious journey. To develop effective and sustainable health care delivery model, mental and physical illnesses must be focused together with utmost priority. To achieve sustainable development goals (SDGs) aimed by the government, good health and wellbeing of people should be ensured. So to provide effective, holistic and cost effective services to the persons with severe mental illness, it is necessary to determine the prevalence and types of physical comorbidity in persons with severe mental illness in Bangladesh.

Objectives

The objective of the study was to estimate the prevalence and types of physical comorbidity among individuals diagnosed with severe mental illnesses. In addition, presence of substance related and addictive disorders among individuals with severe mental illnesses were also looked for.

Methods

National Institute of Mental Health (NIMH), Dhaka carried out the hospital based survey in collaboration with Non Communicable Disease Control (NCDC)

wing of Directorate General of Health Services (DGHS) under Ministry of Health & Family Welfare (MOH&FW) of the Government of the People's Republic of Bangladesh during the period of September 2017 to June 2018. A hospital based cross-sectional study was conducted in inpatient and outpatient departments of 2 specialized psychiatry hospitals (National Institute of Mental Health, Dhaka and Mental Hospital, Pabna), psychiatry department of a medical university and an army hospital (Bangabhandu Sheikh Mujib Medical University and Combined Military Hospital, Dhaka), psychiatry departments of 8 medical colleges (Dhaka Medical College, Sir Salimullah Medical College, Sylhet MAG Osmani Medical College, Shahid Ziaur Rahman Medical College, Bagura, Sher-E-Bangla Medical College, Barisal, Khulna Medical College, Chittagong Medical College and Rangpur Medical College throughout the country from September 2017 to June 2018. This hospital based study was cross-sectional in nature and was conducted in both Dhaka and outside of Dhaka in Bangladesh. During the study period, persons with severe mental illnesses for 10 years and above attending in Inpatient Department (IPD) and Outpatient Department (OPD) of the study sites were included in the study. Severe mental illnesses included major depressive disorder, schizophrenia, schizoaffective disorder, bipolar disorders and organic psychotic disorders diagnosed by the research psychiatrist of the respective site of the survey. Patients or attendants of the patients refusing to participate in the study were excluded from the study.

Sample size estimation

As there was no previous representative study in Bangladesh, we considered the prevalence of physical comorbidities in the neighboring country India, where 31% of psychiatric patients had physical illnesses.¹⁷ Assuming that this figure was applicable for this study we applied it along with other statistics given below in the following formula. We calculated the sample size for the study as follows.

$$n = \frac{z^2 p(1-p)}{d^2} = 2052$$

where

$z = 1.96$ (Standard normal variant value for 95% confidence)

p=0.31 (Expected prevalence or proportion of the disorder)

1-p= 0.69

d= 0.02

The sample size calculation indicated 2052 samples should be adequate. However, considering the chance of missing data we considered approaching 2200 patients visiting the institutions. Special investigations were supposed to be required to do in 50% of sample cases as the possibility of physical comorbidity was around 50% as revealed in different studies.

Research instruments used in the study

- i. Questionnaire for socio-demographic and clinical variables.
- ii. Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) criteria for diagnosis of the severe mental illnesses.²⁰
- iii. BMI chart, height and weight machine, BP measurement instrument, peak flow meter etc.

Questionnaire for socio-demographic and clinical variables:

A customized questionnaire containing gender, age, educational level, monthly family income, employment status, types of family, number of family members and other informations were used to collect data. Questions for clinical variables included questions on whether patients were currently getting treatment or not, treatment was regular or not, fits were controlled or not, etc. Other treatment data were also recorded.

Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5):²⁰

DSM-5 criteria for diagnosis were used to diagnose people with severe mental illnesses. For diagnosis of mental disorders DSM-5 was used because it serves as the principal authority for psychiatric diagnoses all over the world.

BMI chart, height, weight, BP measurement, Peak flow meter:

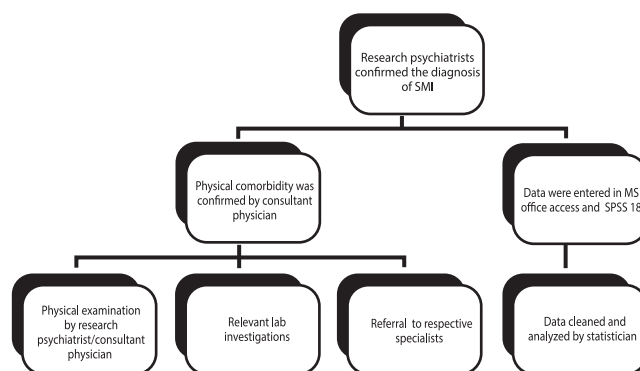
Body height was measured in centimeters using a calibrated non-stretchable tape positioned on a wall with the participant standing with their back against the wall. Body weight was measured in kilograms using a calibrated analogue weight

machine. All measurements were carried out by appropriately trained clinical staffs. BMI was calculated according to the formula, BMI=weight (kg)/height squared (m²). Blood pressure was measured using sphygmomanometer and peak flow meter was used to measure the air flow in lungs. Before starting the data collection, a pre testing of questionnaires was done in two sites outside the study area and after that the final questionnaires were developed.

Data collection techniques and procedure in the field:

During the study period consecutive persons with severe mental illnesses were diagnosed and recruited. In the first stage, diagnoses of severe mental illnesses were done following DSM-5 criteria²⁰ of diagnosis by respective research psychiatrist in consultation with local coordinator who was also a senior psychiatrist. Before confirmation of diagnosis, informed written consent of the samples or their guardians were taken. Then the research officers collected socio-demographic and related clinical data of the diagnosed cases. In the second stage, thorough physical examination of the patients was done by research psychiatrists to look for possible comorbid physical illnesses. Routine physical investigations were also done for all patients. Special investigations were conducted for diagnoses of comorbid disorders. Finally, cases were referred to respective medical consultant for confirmation of diagnoses of physical illnesses as required. Local coordinators in all the sites of the study supervised the activities in their respective areas.

Figure 1: Stepwise approach to the respondents



Data processing and statistical analysis

Data were checked for consistencies as well as for

completeness. Data collected from each respondent was checked to ensure the completeness of its contents. Data were entered and encoded into the data entry program MS excel 2003. Then data were transferred to computer program SPSS version 18 to analyze and summarize data. Statistical analysis were done by the statistician employed for the purpose using frequencies and percentages for categorical data and by applying other statistical tests as required. Computer, secretarial and administrative facilities were available at National Institute of Mental Health, Dhaka.

Ethical consideration

Ethical clearance was taken from Bangladesh Medical Research Council (BMRC). Permission was also taken from the authorities /departments of respective institutes or medical colleges. Research objectives and procedure of the study were explained to every study individual and their guardians before starting of the interview. Informed written consent from patient or guardian as required was obtained before interview. Bengali version of assent and consent forms were read out and then signed by child respondent, in the assent form and their parents or guardians of the adult patients in the consent form. All respondents had the liberty to leave the study at any stage. They were also free to refuse to answer any question. Confidentiality was maintained at every stage of data collection for every individual. Each questionnaire was identified by a code number. The final report did not contain the names of the respondents. Every endeavor was made to limit harmful effect of the study either on the family or on the individual. Illiterate respondents or guardians were asked to put their thumb impression. Interviews were conducted at times and locations suitable for the study individuals and privacy was maintained during assessment.

Results

Among estimated 2200 samples aged 10 years or above were approached for data collection from different sites of the study. Among them 1648 respondents provided complete information. Others either did not meet the selection criteria or did not respond. Non-response was mainly due to refusal of the respondents to give interview and absence of the respondents during full interview and assessment. Majority of the

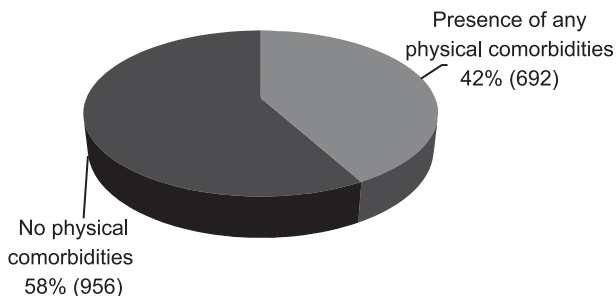
respondents were 18 years and above (93.57%), male (54.36%) respondents were more than female (45.63%) and respondents from nuclear family (65.84%) exceeded respondents from extended family (34.16%) (Table 1).

Table 1. Socio-demographic and clinical characteristics of respondents with SMI (N=1648)

Characteristic	Frequency	Percentage (%)
Age	<18 years	106 6.43
	>18 years	1542 93.57
Sex	Female	752 45.63
	Male	896 54.36
Family types	Extended	563 34.16
	Nuclear	1085 65.84
Education	Illiterate	202 12.25
	Sign own name	125 7.58
	Primary	458 27.80
	Secondary	452 27.43
	Higher Secondary	191 11.58
	Graduates	128 7.76
	Masters	81 4.92
	Others	11 0.66
Premorbid Occupation	Unemployed	154 9.34
	Business	96 5.82
	Farmer	98 5.94
	Service	259 15.71
	Housewife	436 26.45
	Domestic worker	28 1.70
	Day labor	157 9.52
	Student	327 19.85
	Others	87 5.28
	Marital Status	Married
Unmarried		582 35.31
Living separated		56 3.40
Divorced		91 61.48
Others		29 1.76
Known physical illness	Yes	485 29.42
	No	1163 70.57
Family history of chronic physical illness	Yes	491 29.80
	No	1157 70.20

Among patients with SMI, around three-fifth of them (956, 58%) had no physical comorbidities and rest (692, 42%) of the patients had some extent of physical comorbidities (Figure 2).

Figure 2. Physical co morbidities among persons with major mental disorders (N=1648)



Respondents from the age group 41 to 48 years (8.98%) had the highest proportion of physical comorbidity followed by age group of 49 to 56 years (8.0%). Respondents from the age group of 18 years or less (1.57%) reported the lowest proportion of physical comorbidity (Table 2).

Table 2. Distribution of respondents with physical comorbidities depending on age group (n=692)

Age (year)	Frequency (%)	Proportion of respondents with any physical comorbidity
<18	106 (6.43)	26 (1.57)
18-25	274 (16.63)	54 (3.28)
26-32	366 (22.20)	104 (6.31)
33-40	321 (19.48)	129 (7.82)
41-48	249 (15.10)	148 (8.98)
49-56	184 (11.16)	132(8.00)
57-64	92 (5.58)	58(3.51)
≥ 65	56 (3.34)	41 (2.49)

Statistically significant association was found between age and physical comorbidities ($p < 0.01$) where older psychiatric patients with SMI tended to have more physical comorbidities than the younger patients (age category redefined as <41 years and >48 years (Table 3).

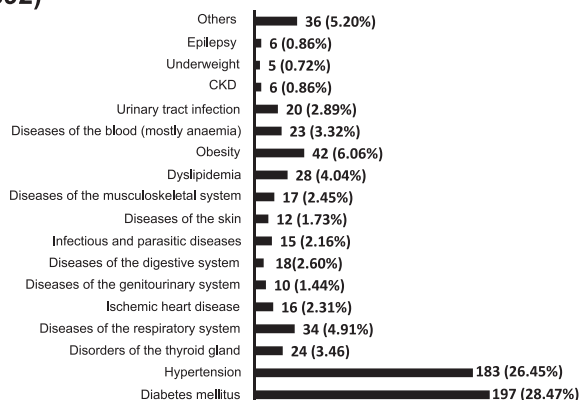
Table 3. Distribution of total respondents depending on age groups and physical comorbidities (N=1648)

Age (year)	Frequency (%)	Physical comorbidities in corresponding age group (%)
<18	106 (6.43)	24.52
18-25	274 (16.63)	19.70
26-32	366 (22.20)	28.41
33-40	321 (19.48)	40.18
41-48	249 (15.10)	59.43

49-56	184 (11.16)	71.74
57-64	92 (5.58)	63.01
≥ 65	56 (3.34)	73.21

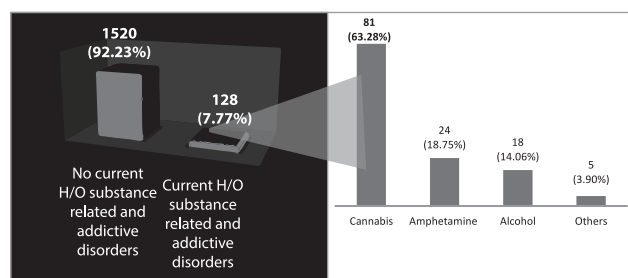
Figure 3 shows that among the patients of SMI with physical comorbidities (n=692), more than 50% were suffering from diabetes mellitus (197, 28.47%) and hypertension (183, 26.45%). There were 42 (6.06%) obese patients and very small number of patients (0.72%) were underweight.

Figure 3: Types and proportion of physical co morbidities among patients with severe mental illness (n=692)



Overall, 7.77% patients with SMI had substance related and addictive disorders. Of them, more than three-fifth (63.28%) had history of cannabis intake followed by amphetamine (18.75%) and alcohol (14.06%) (Figure 3).

Figure 4: Presence of substance related and addictive disorders among persons with severe mental illness (n=128)



Discussion

Mind and body are inseparable and both are important components of health. This bidirectional relationship leads to great deal of overlap between physical and mental disorders. Psychiatric patients with comorbid physical disorders are usually chronically ill and

inadequately responding to treatments who are often referred to as high-cost utilizers, inadequate responders, and treatment refractory. It has been also seen that longevity of patients with mental disorders is usually less^{8,9} which is mainly due to comorbid physical disorders and not due to mental disorder itself. Psychiatrists tend to diagnose only mental illnesses and give very little attention to comorbid physical illness of patients with mental illness. It was observed that physical examination was performed less frequently in psychiatric inpatients and outpatients. Existence of comorbid substance use among psychiatric patients is not also uncommon. Reduced healthy life expectancy due to the high burden of both mental and physical illnesses, is a major public health concern all over the world.²¹

The present study was conducted to explore the prevalence and types of physical comorbidity including substance use in persons with severe mental illnesses in Bangladesh. A total of 1648 participants with SMI from different institutions all over the country completed total interview and assessment. Overall, 42% of all respondents with SMI in this study had some extent of physical comorbidities. Comorbidities found in patients with SMI are not much different from other studies in this regard. Many physical illnesses occur with greater frequency in patients with SMI. Diabetes mellitus (DM) and hypertension were the highest prevalent physical comorbidities comprising of 28.47% and 26.45% respectively. Consistent with the findings of the previous researches, the present study supports that people with diabetes and hypertension are more likely to suffer from severe mental disorders.^{22,23,24,25} Similarly, cross-sectional studies looking at the prevalence of physical health conditions in mental health population have reported higher prevalence rates of such types of illnesses (67-68%).^{26,27,28} Various other studies have also drawn attention to the comorbidity of chronic physical diseases and mental disorders.²⁹

Over the past two decades the prevalence of comorbid mental and physical disorders has increased dramatically, reaching epidemic problems in many countries.⁴ Numerous studies worldwide have reported disproportionate medical comorbidities and premature death among people with SMI.³⁰ The lifetime prevalence of any physical disorder among patients with SMI has been reported to be 46.4%, while the life time

prevalence of 2 and 3 physical disorders were found to be 27.7% and 17.3%, respectively.³¹ In a study in India, it was reported that 31% of the patients in outpatient department of psychiatry hospitals were having coexisting physical illnesses and the main system involved was cardiovascular (33.3%) in which hypertension was the most common diagnosis followed by endocrine (27%), in which diabetes mellitus and hypothyroidism were the most common diagnoses.¹⁷ Common physical diseases among patients with SMI reported in this survey were diabetes mellitus, hypertension, obesity and diseases of respiratory tract. About 28.47% of patients were suffering from diabetes mellitus. The prevalence of DM was also found 2 to 3 times higher among patients with schizophrenia, bipolar disorder and schizoaffective disorder than the general population^{32,33} and it was 1.2 to 2.6 times higher in people with depression.³⁴ Increased risk of DM in patients with SMI may be explained by multiple factors including genetics, life style and treatment factors. Atypical antipsychotics, diet and physical inactivity are among the important issues related to DM in these patients. Hypertension is a form of major cardiovascular diseases (CVD) and it was found among 26.45% of patients with SMI in the current study. Evidence supports that patients with bipolar disorder, schizophrenia and major depressive disorder are at significantly higher risk of cardiovascular morbidity and mortality than the general population.^{35,36} It was also seen that CVD was the commonest cause of death in patients with SMI.^{35,37} The etiology of the excess CVD may be multifactorial and it may include genetic, lifestyle and treatment factors.³⁸ This group of patients are likely to be obese also and the prevalence of obesity among SMI patients was 6.05% in this survey. Obesity and SMI overlap at a clinically significant level.³⁹ Study findings suggest that people with SMI are at increased risk of overweight than people in general even in the early phase of illness.^{40,41}

Obesity is a part of metabolic syndrome and rate of metabolic syndrome in patients with bipolar disorder and schizoaffective disorder have been found to be 22-30%⁴² and 42% respectively.⁴³ For several decades, respiratory tract diseases such as pneumonia and tuberculosis accounted for majority of deaths in people with SMI who lived in institutions.³⁵

Respiratory diseases are still more prevalent among people with SMI.⁹ About 4.91% of the respondents in this survey had diseases of the respiratory system. Coexistence of respiratory tract, urinary tract and parasitic infections found associated in this survey were may be due to poor self care of the patients with SMI. There were many other physical comorbidities among patients with SMI in this study and they were dyslipidemia, diseases of the thyroid gland, diseases of the blood—mostly anemia, ischemic heart disease, diseases of the genitourinary system, diseases of the digestive system, infectious and parasitic diseases, diseases of the skin, diseases of the musculoskeletal system, urinary tract infection, chronic kidney disease, underweight, epilepsy and some other diseases. Studies found strong relationships between comorbidity and higher rates of suicide,^{44,45} suicidal ideation,⁴⁶ greater symptom severity^{47,48} and poorer quality of life and social support.⁴⁶ Patients diagnosed with multiple disorders also tend to have a poorer prognosis, less responsive to intervention and generally exert a greater demand on the health care sector.^{44,45,48} Several studies have attributed medical comorbidities among psychiatric patients as responsible for the premature death observed in this population.^{49,50} Although these health disparities have been well studied and addressed in the western world, gaps in information on this issue still exist in the developing world, particularly in Bangladesh.

As additional findings, 7.77% patients with SMI had substance related and addictive disorders. Of them, more than three-fifth (63.28%) had history of cannabis intake followed by amphetamine (18.75%) and alcohol (14.06%). A study on substance use in Bangladesh in 2018 conducted by National Institute of Mental Health, Dhaka revealed that 3.30% of the adult population of the country were using substances and cannabis (42.70%) was the commonest abusing substance followed by alcohol (27.50%), inhalant (20.4%), amphetamine (15.20%) and opioid (5.40%).⁵¹ Patients with SMI usually lack insight and many of them are likely to have premorbid personality disorders, both of which make them vulnerable to mental illness. Substance use among patients with SMI may be primary or secondary in nature. Differentiating diagnosis of mental illness and substance use is important for both management and follow up. Thorough physical examination and investigations are essential part of

management of substance use which may be selective in case of mental illness.

Among the study population, 93.57% were 18 years or older; 45.63% were female, 54.36% were male; 27.8% studied up to class five and 68.54% population came from nuclear family. Respondents from the age group 41 to 48 years (8.98%) had the highest proportion of physical comorbidity followed by age group 49 to 56 years (8.0%). Statistically significant association was found between age and physical comorbidities ($p < 0.01$) where older psychiatric patients with SMI had more physical comorbidities than the younger patients. Respondents from the age group 18 years or less (1.57%) reported the lowest proportion of physical comorbidity. Physical diseases like diabetes mellitus, hypertension, dyslipidemia, ischemic heart disease and chronic kidney disease are usually the diseases for older age group and coexistence of these physical diseases in older patients having SMI create additional burden for management and ultimately lead to poorer prognoses. Male female difference in this study may be explained by the dominance of males in getting mental health services on priority especially for the hospital set up in Bangladesh. Females may have been ignored from the services that are usually provided to males. No significant association was found between physical comorbidity and severe mental illness in terms of sex, family type, education, occupation and marital status. Basically, the cooccurrence of physical and mental disorder depends on several different factors including geographical region, sex, race, social class and many more factors. Although the present study did not find any significant difference between physical and mental disease cooccurrence in terms of sex but other studies showed sex differences in terms of physical and mental comorbidity.^{52,53} The discrepant result with previous studies suggests the need for more researches using more specific measures of mental illness to fully understand sex and comorbidity. The results of different studies around the globe suggest that patients of SMI may develop several physical disorders which could result in adverse outcomes.^{54,55,56} The findings of this study also support that people with severe mental illness may develop several chronic physical problems which could result in adverse outcomes^{57,58,59} that could vary based on various factors such as their history of substance use and other socio-demographic status.

Managing physical disorders in patients with SMI and substance use disorder would entail shared responsibility among psychiatrists, substance use specialists, primary care physicians, and other health professionals.⁶⁰ Clinicians managing severe mental disorders should screen for physical disorders and provide treatment or go for referral. Such integrated care can enhance a patient's overall wellbeing and can prevent any additional problem. Premature death and disability can also be reduced with greater focus on comorbidity.²¹ Attention to these physical disorders at the individual level and health care system level will improve outcomes of this group of population. Side effects of psychotropic medications, modifiable life style factors, prevention of substance abuse and access to appropriate health care remain addressable for patients with SMI. Efforts are required to convince decision makers, educators, clinicians, and community workers that comorbidity is one of the most urgent challenges to the quality of health care in the twenty first century that must be recognized and dealt with without delay. Though it was a first large scale study to find the prevalence of comorbid physical problems among the patients with severe mental illness we must acknowledge few limitations of the study. The cross-sectional study conducted in hospital settings prevents claiming it as the overall prevalence of comorbidity among patients with SMI in the whole community of Bangladesh. Diagnosis of SMI was done by research psychiatrists following DSM-5 criteria of diagnosis. The subjective variation in diagnosis and physical examination need to be considered also.

Implication of the study

Thus it is important that a psychiatrist should not miss the coexisting physical illness in the patient that may present with mental disorder. In the same way, physician needs to be cautious that some physical illness may be a reflection of an underlying mental illness. The occurrence of mental physical comorbidity has public health significance specially in Bangladesh. The national health strategy focuses on mental health and intends to develop programs to improve the delivery of mental health services that revolve around community-based care in Bangladesh. Exploring the prevalence of medical comorbidities in people with severe mental illness and how these are being addressed are necessary to build strategies within the primary health

care system to close the care gaps. Result of the survey is intended to be a guide for all healthcare professionals to work with the group of patients suffering from severe mental illness having multiple comorbid disorders. Holistic evaluation looking at the whole patient is required for proper management Integrated treatment plans that focus on all the treatment needs of the patient may be developed based on the survey result.

Conclusions

The study findings suggest that physical comorbidity among patients with SMI is one of the most urgent challenges to the quality of mental health care in the twenty first century that must be recognized and dealt with without delay. The health system and mental health policy makers should consider the physical comorbidities of the patient suffering from mental health problems and there should be adequate facilities to address this issue in every mental health setting. We need to consider an integrated care program for each patient at every government health-care facility. Recommendations based on the study findings are i. psychiatrists should not miss the physical comorbidities in the patients that may present with a mental illness and medical professionals dealing with physical illness should also be vigilant that physical problems may be reflection of mental illness or there may be coexisting mental illness ii. physical and psychiatric assessment of persons with substance use must be given due importance iii. appropriate management of comorbidity at the individual and public health level will require a significant reorientation of medical students, medical professionals and reorganization of health services iv. health services will have to be adjusted to the fact that most of the people who come to seek help are likely to suffer from more than one illness v. researchers will have to give more attention to the commonalities in the pathogenesis of mental and physical disorders and to the development and assessment of strategies for the treatment of comorbid conditions and vi. psychiatry hospitals need to have other departments specially medicine and its allied subjects with laboratory facilities.

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Impact of headache and socio-demographic profile of headache patients: a hospital-based study in Dhaka

Sifat E Syed, MSI Mullick

Abstract

Background: Headache is one of the most common complaints in outpatient departments and is known to have significant impact on different areas of functioning. The co-existence of psychiatric disorders with headache is an established fact.

Objectives: This study was aimed to explore the impact of headache, estimate the psychiatric comorbidity among headache patients and to see the possible association between them.

Methods: This cross-sectional study was conducted among 51 primary headache patients at Neurology Outpatient Department of Bangabandhu Sheikh Mujib Medical University in 2015. International Classification of Headache Disorders (ICHD-3) and Mini International Neuropsychiatric Interview (MINI) were used as diagnostic tools. Age range was 16-65 years.

Results: 62.7% had at least one psychiatric disorder. Severe impact on educational or occupational life was reported by 43.1% patients but association was not found with having psychiatric disorder. Severe impact on family/personal life and social life was reported by 15.7% and 6% individuals and it was significantly associated with psychiatric comorbidity ($p=0.02$ & 0.001). There was female preponderance and all types of headache were more prevalent among women. Prevalence of headache increased with age, peaked at 26-45 years and declined after that. Tension type headache was the commonest type of headache (60.8%) and highly prevalent among all age groups.

Conclusions: This small study shows the need of larger research in this area and also points out the importance of psychiatric intervention for headache patients.

Declaration of interest: None

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Keywords: Impact; headache; Bangladesh; socio-demographic

Introduction

Headache is a common problem but often given less importance than other disorders seen in neurology outdoors. Headache may be defined as pain or any kind of discomfort in the head excluding the lower part of the face and including the upper part of the neck.¹ The classification of headache is done by using the International Classification of Headache Disorders (ICHD) provided by the International Headache Society and according to them, headache can be classified into primary and secondary headaches. Among the primary headaches, the major types are 1) tension type headache (TTH) 2) migraine 3) trigeminal auto-

nomic cephalalgias 4) other primary headache disorders. Each type has many subtypes and each category has a fixed diagnostic criteria.² Headache accounts for considerable loss in productivity and poor quality of life. There are multiple articles worldwide concluding that headache has serious impact on different areas of functioning. A systematic review of qualitative researches concluded that chronic headaches have a profound effect on people's lives, showing similarities with other pain conditions.³ A European review article commented that migraine confers a high degree of disability with more forced absence from work and leisure activities, and associated with

reduced quality of life. In addition, there is a marked impact on family life and headaches also put considerable strains on partners and children.⁴ Headache also reduces productivity. About 820 annual workdays for every 1,000 persons are lost on account of TTH (versus 270 days on account of migraine). The reduced productivity of those who remain at work despite headache has an even greater impact. Overall, TTH have a negative effect on the emotional life of affected persons, resulting in marked reductions in quality of life and frequency of social and family activities.⁵ Studies in general population and clinical settings have indicated that psychiatric disorders are common among patients with migraine, tension type headache and chronic daily headache. Study done among rural populations in India concluded that among patients with headache, 48.05% had depressive and 17.9% had anxiety and related disorders.⁶ Another study done on patients with chronic daily headache found that about 53.3% patients had psychiatric comorbidity.⁷ Despite the fact that headache has a high impact on quality of life and psychiatric morbidity being very common among headache patients, very few studies in Bangladesh was found by the researcher that estimated the impact of headache and prevalence of psychiatric disorders among headache patients. The objective of the study was to explore the impact of headache on different areas of functioning, to estimate the psychiatric comorbidity among headache patients and to see the possible association between them and also to explore the socio-demographic profile of headache patients. This study was aimed to put neurologists and psychiatrists under the same umbrella to provide a better care for headache patients.

Methods

It was a cross-sectional study conducted at the Neurology Out-Patient Department of Bangabandhu Sheikh Mujib Medical University (BSMMU) from January 2015 to June 2015 and sample was selected purposively. BSMMU is the only medical university of Bangladesh and patients from all over Bangladesh comes to this tertiary care facility for treatment. After taking informed written consent from both new and old cases of primary headache, 51 patients were taken as sample. Age range was between 16-65 years. Secondary headaches due to trauma, tumor, infection etc were excluded. Neurologist diagnosed the type of headache

clinically and provided treatment. Researcher confirmed the diagnosis according to the International Classification of Headache Disorders, 3rd edition beta version (ICHD-3 beta).² Face-to-face interviews were conducted using semi-structured questionnaire designed by the researcher. To diagnose DSM-IV psychiatric disorders Mini International Neuropsychiatric Interview (MINI) English version was used.⁸ Data analysis was performed according to the objective of the study using computer software program, Statistical Package for Social Sciences (SPSS) version 16.0. This research was done as a part of a research methodology workshop in Bangladesh Medical Research Council (BMRC) and ethical approval was taken accordingly.

Results

Among 51 respondents, 19 (37.3%) were male and 32 (62.7%) were female (Figure 1). The male:female ratio was 0.6:1; there was a female preponderance. Most of the respondents (54.9%) were from 26-45 years age group. In all three age groups, tension type headache was most prevalent and as a whole it was the commonest type of headache (60.8%). Migraine (19.6%) and mixed type of headache (19.6%) were less common and no migraine patient was found in 46-65 years age group (Fig 2). Most of the patients (47.1%) were from urban areas, 45% were from rural areas and 7.8% respondents worked abroad and came to Bangladesh to visit or for treatment. Most of the respondents studied upto high school (58.8%) and 41.2% studied above high school. The marital status of the respondents showed that 60.8% were married, 31.4% were single and 7.8% were either widowed or divorced. The occupation of most of the respondents were housewives (45.1%) and students (21.6%). Most of the patients were from moderate income family (52.9%). Among 51 people, majority (62.7%) had at least one psychiatric disorder, 39.2% had depressive illness and 17.6% had anxiety disorders (Fig 3). On the basis of subjective opinion from respondents, impact of headache on family/personal life, social life and occupational/educational life was recorded. It was observed that the highest impact was found on educational/occupational life (43.1%), no impact or mild impact on social life was mostly reported (33.3% and 41.2%) and mild to moderate impact was mostly reported

about family/personal life (41.2%, 27.5%) (Figure 4). However, impact on family/personal life and social life was found more in respondents who had a psychiatric comorbidity and the difference was statistically significant ($p < 0.05$) (Table 1, Table 2). On the contrary, impact on educational/occupational life was moderate to severe in most of the respondents irrespective of having a psychiatric diagnosis and the difference was not statistically significant (Table 3). No significant association was found between socio-demographic variables (age, sex, habitat, education, occupation, marital status, family income, etc.) and presence of psychiatric disorder. Headache was found to be more severe among respondents who had psychiatric comorbidity but the difference was not statistically significant (Table 4). Headache occurring frequently (>15 days per month) was associated with having psychiatric comorbidity and the difference was highly significant ($p = 0.002$) (Table 5).

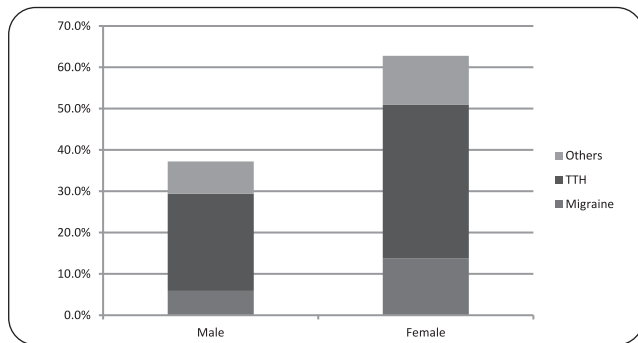


Figure 1: Component bar diagram showing the gender distribution of the respondents (N=51).

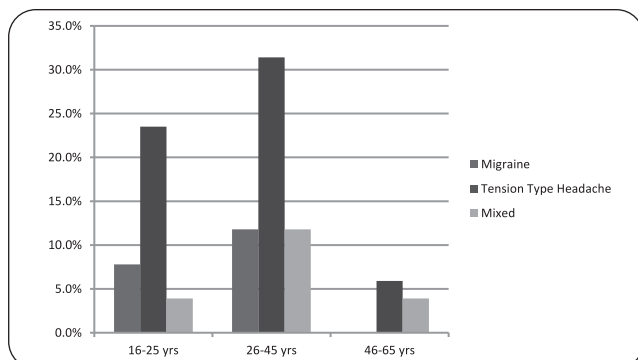


Figure 2: Complex bar diagram showing age distribution among respondents (N=51).

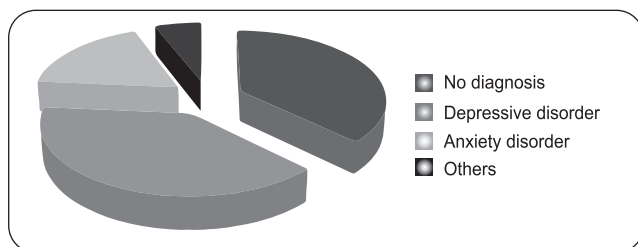


Figure 3: Pie chart showing the percentage of respondents having psychiatric disorder

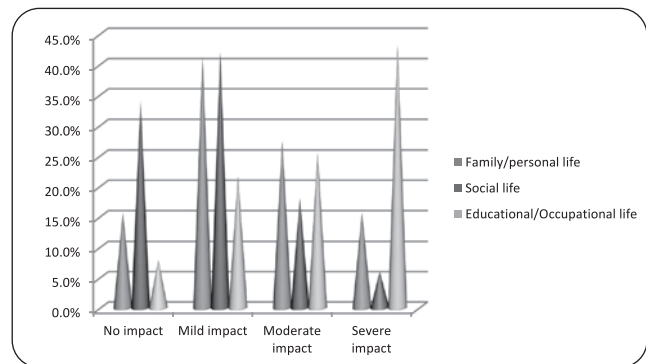


Figure 4: Impact of headache in the family/personal life, social life and educational/occupational life of respondents

Table 1: Association of psychiatric comorbidity with impact of headache on family/personal life (N=51)

Impact on family/personal life	Psychiatric diagnosis		Total	p value
	No	Yes		
No impact	6 (11.8%)	2 (3.9%)	8 (15.7%)	0.02
Mild impact	9 (17.6%)	12 (23.5%)	21 (23.5%)	
Moderate impact	4 (7.8%)	10 (19.6%)	14 (19.6%)	
Severe impact	0 (0%)	8 (15.7%)	8 (15.7%)	
Total	19 (37.3%)	32 (62.7%)	51 (100%)	

$\chi^2 = 10.4$, $df = 3$

Table 2: Association of psychiatric comorbidity with impact of headache on social life (n=50)

Impact on social life	Psychiatric diagnosis		Total	p value
	No	Yes		
No impact	13 (26%)	4 (8%)	17 (34%)	0.001
Mild impact	4 (8%)	17 (34%)	21 (42%)	
Moderate impact	2 (4%)	7 (14%)	9 (18%)	
Severe impact	0 (0%)	3 (6%)	3 (6%)	
Total	19 (38%)	31 (62%)	50 (100%)	

$\chi^2 = 16.7$, $df = 3$ * 1 missing data

Table 3: Association of psychiatric comorbidity with impact of headache on educational/occupational life (n=50)

Impact on educational/occupational life	Psychiatric diagnosis		Total	p value
	No	Yes		
No impact	3 (6%)	1 (2%)	4 (8%)	0.2
Mild impact	2 (4%)	9 (18%)	11 (22%)	
Moderate impact	4 (8%)	9 (18%)	13 (26%)	
Severe impact	9 (18%)	13 (26%)	22 (44%)	
Total	18 (36%)	32 (64%)	50 (100%)	

$\chi^2 = 4.6$, $df = 3$ * 1 missing data

Table 4: Association of psychiatric comorbidity with severity of headache (N=51)

Severity of headache	Psychiatric diagnosis		Total	p value
	No	Yes		
Mild pain	2 (3.9%)	1 (2%)	3 (5.9%)	0.3
Moderate pain	8 (15.7%)	20 (39.2%)	28 (54.9%)	
Severe pain	9 (17.6%)	11 (21.6%)	20 (39.2%)	
Total	19 (37.3%)	32 (62.7%)	51 (100%)	

$\chi^2=2.5$, $df=2$

Table 5: Association of psychiatric comorbidity with frequency of headache (N=50)

Frequency of headache	Psychiatric diagnosis		Total	p value
	No	Yes		
0-3 days/week	12 (24%)	7 (14%)	19 (38%)	0.003
4-7 days/week	6 (6%)	25 (50%)	31 (62%)	
Total	18 (18%)	32 (64%)	50 (100%)	

$\chi^2=9.8$, $df=1$ *1 missing data

Discussion

Headache is a major cause of visit in neurology out-patient departments. A hospital-based study in Bangladesh reported that about 22.98% patients of Neurology OPD were affected with headache.⁹ Review of 107 headache articles showed that the global prevalence of current headache is 47%, current migraine 10%, current TTH 38% and chronic daily headache 3%. Headache in general was most prevalent in the youngest age group whereas TTH, which should outweigh other headaches, was most prevalent in adults.¹⁰ In Bangladesh, an epidemiological study with a large sample of 3440 headache patients found that, 71.13% had tension type headache and 16.05% had migraine.¹¹ There was a female preponderance and most patients belonged to the age group of 10-30 years (65.67%). In our study, the percentage of migraine, TTH and mixed headache were 19.6%, 60.8% and 19.6% respectively among headache patients not within the general population and there was a female preponderance too. But both migraine and TTH were more common in the age group of 26-45 years than among younger adults. In a hospital-based study in Bangladesh, female patients predominated (67% female and 33% male). Most of the patients were within 21–30 years age group.¹² This finding is similar to our findings (62.7% female and 37.3% male). A population-based survey in Nepal explored that the 1-year prevalence of migraine was 34.7 % and there was a clear female preponderance. Prevalence was age

related, increasing from young adulthood (18–25 years) in both genders and peaking during 26–35 years among males and 36–45 years among females. The prevalence of TTH was 41.1 % and was lower in females than in males. Prevalence was highest in the age range 18–25 years and decreased with age in both genders, being at its lowest at 56–65 years.¹³

In our study, we also found that peak age of headache was 26-45 years, but prevalence of both TTH and migraine were more in females. In India, age and gender trends were almost similar to Nepal. But all specific types of headache showed an association with rural dwelling specifically migraine. There was no association with income in multivariate analysis.¹⁴ This finding is partly in concordance with our finding as we didn't get any association with habitat or with income. A research from Bangladesh found stress as the commonest precipitating factor for both migraine and TTH.¹² A Chinese study done on medical staffs reported that working more than 6 night-shifts per month was associated with an increased prevalence of migraine and TTH in doctors; the same was true in nurses for migraine, but not for TTH.¹⁵ Though our research did not measure stress as the precipitating factor for headache, but highly prevalent neurotic disorders among headache patients indicate that stress is an important factor for headache. A cross-sectional population-based study concluded that headache has significant effect on quality of life and chronic headache, particularly is found to be associated with poor quality of life and mental vulnerability.¹⁶ This finding is similar to our findings as we found significant association between highly frequent headache (>15 days per month) and psychiatric comorbidity. An Italian study commented that headache had negative impact on different aspects of life: education, career and earnings, family and social life. Each person with headache had lost, on average, 2.3 days from paid work, 2.4 days from household work and missed social occasions on 1.2 days in the preceding 3 months.¹⁷ Significant impact on family and social life was also found in our research and it was associated with having psychiatric comorbidity. The relationship can be bidirectional, the impact of headache precipitating the psychiatric disorders or the persons with psychiatric comorbidities were more vulnerable and had severe impact on their personal/family/social functioning. In India, lost productivity due to headache yesterday (headache on the preceding day) were reported by 83.3 % participants, 37.7 % were able to do less than

half of what they had planned and 13.0 % able to do nothing.¹⁸

In our research, significant impact was also found on education/occupation and 43.1% respondents reported severe impact on their educational/occupational functioning. Unlike the impact on family/social functioning, the impact on educational/occupational functioning was not associated with psychiatric comorbidity and it can be concluded that headache only is enough to create severe impact in these areas of functioning.

Conclusions

Recognition of impact of headache and treatment of psychiatric comorbidity is necessary to improve quality of life of headache patients. Timely referral to a psychiatric facility can make the prognosis better and reduce the risk of chronicity of the disease. This small study shows the need for larger research in this issue and also points out the importance of psychiatric intervention for headache patients.

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The pattern of psychiatric referrals in a tertiary care hospital

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Abstract

Background: Almost all physical illnesses have some psychological component and psychiatric disorders often present with physical symptoms; so psychiatric referral is especially important for the proper management of a patient.

Objectives: The purpose of the present study was to find out the referral pattern of patients to psychiatry department from other disciplines of "Monno Medical College & Hospital" and to come to diagnoses of those referred patients.

Methods: This descriptive cross-sectional study was performed in the department of psychiatry at a tertiary level multidisciplinary teaching hospital from June 2019 to December 2019. Patients referred from outpatient and inpatient departments of different disciplines were taken as study subjects. Psychiatric diagnoses of the patients were conferred by the consultant psychiatrist according to "The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)" diagnostic criteria. A semi-structured questionnaire was used to collect socio-demographic information. The patients were analysed based on important sociodemographic variables, source of referral, and diagnoses conferred. Ethical issues were maintained throughout the study.

Results: A total of 224 patients were referred to the Department of Psychiatry during the study period. Three fourths of the referred patients (171, 76%) were from outpatient departments of different disciplines and one fourth (53, 24%) from inpatient departments of the same. Majority of the patients were referred from the medicine and allied disciplines (194, 86.6%); the most referring departments were gastroenterology (63, 28%), medicine (51, 22%), dermatology (28, 12.5%), neuromedicine (24, 10.7%) and endocrinology (21, 9.4%) respectively. The referrals from the departments of surgery (17, 7.6%) and gynaecology (3, 1.3%) constituted a minority (20, 9%). Common psychiatric diagnoses of the referred patients were generalized anxiety disorder (72, 32%), somatic symptom disorder (44, 19.6%) and major depressive disorder (30, 13.4%).

Conclusions: Patients with psychiatric symptoms and comorbidity come to the outpatient and inpatient departments of mainly medicine and allied disciplines, other than psychiatry itself. We need to increase interaction among psychiatry and rest of the medicine allied departments to enhance overall patient management.

Declaration of interest: None

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Keywords: Tertiary care hospital; Bangladesh; referral pattern; psychiatry; comorbidity.

Introduction

Health is a state of complete physical, mental, social, and spiritual wellbeing, not merely an absence of disease or infirmity.¹ Multidisciplinary approach to health is an essential model to ensure standard mental health service.² Psychiatric disorders carry social stigma all over the world, probably due to abnormal presentation of the patients and their association with mental hospitals. However, the picture is different today as psychiatry units have been functioning independently in medical colleges as well as general hospital settings. In many cases, physical disorders have psychiatric comorbidity.³ The significance of

assessing the psychiatric aspect of the patients is especially important for many reasons. Firstly, the physical illness may directly influence brain and cause psychiatric symptoms. Secondly, the physical disease may cause psychological reaction and produce psychiatric symptoms. Thirdly, some psychiatric disorders may present with physical or somatic symptoms. Fourthly, many patients visit outpatient departments of different disciplines and may be admitted in inpatient department with co-morbid psychiatric illness.³ General hospitals and medical college psychiatric units enable direct interaction of psychiatrists with physically ill patients, bridging the gap between

psychiatry and other medical and surgical specialties. In this way, the referrals to psychiatry are initiated from non-psychiatry departments and play an important role in the general health system.⁴

Pattern of referral to the psychiatric outpatient department (OPD) for psychiatric evaluation depends on many factors; such as awareness of the physician regarding the psychological components of the illness,⁵ severity of psychiatric presentation,⁶ comfort of the physician to refer the patient,⁷ the patient's perception or stigma about being referred to a psychiatrist,⁸ the different sign-symptoms at presentation at different level hospitals,⁹ etc. Usually general medicine constitutes the highest number of referrals to psychiatry units. In case of referrals to psychiatry units from general hospitals of Kuwait, general medicine initiated 74.4% of referrals in comparison to 11.4% referrals initiated by general surgery.¹⁰ In a scenario from India, among the 220 referrals, majority were from medicine departments (52.7%).¹¹ Substance use disorder (26.36%) was the most common diagnosis followed by depressive disorder (23.6%) and somatisation disorder (7.7%).¹¹ From another tertiary level hospital in India, the majority of the psychiatric referrals (59%) were from the department of medicine and the most common reason for referral was medically unexplained somatic complaints (23.1%), followed closely by anxiety (21%) and abnormal behaviour (13.1%). The most common diagnosed psychiatric disorders were neurotic, stress related and somatoform disorders (41.7%), followed by mood disorders (12.9%) and substance use disorders (12.7%).¹²

In Nepal, a neighbouring country of India, 50% of the referrals were from Department of Medicine; the next were surgery department (11.2%) and ophthalmology or otolaryngology (10.3%).¹³ Among the referral cases, depression was diagnosed in 27%, anxiety in 15.5% and substance related problem in 14.5%.¹³ In a tertiary hospital in Austria, the most common psychiatric diagnoses were adjustment disorders (21.4%), depressive disorders (18.5%) and delirium (18.1%), while conducted in 2003 and the most prevalent diagnoses in 2004 were adjustment disorders (24.5%), delirium (18.8%), and depressive disorders (14.3%).¹⁴ In a tertiary level hospital in the capital of Bangladesh, among the referred, generalized anxiety disorder was

the diagnosis in 25% cases followed by major depressive disorder in 10% cases. Referral from the department of medicine and allied subjects was 93 %, followed by department of surgery and allied subjects (6.38%) and department of obstetrics and gynaecology (0.74%).¹⁵ In a tertiary hospital situated in a rural area of Bangladesh, it was observed that the most number of referrals were from the department of cardiology (81, 34%); followed by internal medicine (66, 28%) and neurology (61, 17%), respectively.¹⁶ With this background the objectives of this study were to find out the referral pattern of patients to psychiatry department from different disciplines of this hospital and to confer diagnoses to these referred cases.

Methods

This was a cross-sectional study conducted at a tertiary level multidisciplinary teaching hospital "Monno Medical College & Hospital" from June 2019 to December 2019. Approximately 250 patients come to the hospital on a usual working day. Around 20 patients attend the psychiatric OPD on a working day. Patients who attend the outpatient department of other disciplines, when they are found to have a psychiatric comorbidity or sole psychiatric presentation, are referred to attend the psychiatric OPD. Among these referred patients, who were 15 years of age and above were included in the study. Patients from both sexes were included in the study. All these patients were evaluated by the consultant psychiatrist according to "The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)" diagnostic criteria. A semi-structured questionnaire was used to collect socio-demographic information including age, gender, marital status, educational attainment, occupation, and habitat. The patients were analysed based on important socio-demographic variables, place of initiation of referral and diagnoses conferred. Informed written consents were taken from the study participants or their legal guardians if they were minor; after explaining them the nature and purpose of the study, their right of not taking part in the study, their anonymity in the study, etc. These ethical issues were maintained throughout the study. The data was analysed by using SPSS-17.

Results

A total of 224 patients were referred to the department

of psychiatry during the study period. According to age of the respondents, it was seen that more than two fifths of the respondents (92, 41 %) were within 15 to 30 years of age and about three fourths (160, 71%) of the respondents were between 15-45 years of age. A slight majority were females (122, 54%). More than half of the respondents were currently married (124, 54%), one fourth of the respondents were unmarried (54, 24%) and about one fifth of them (46, 20.5%) were divorced/separated/widowed. Most of the patients came from rural area (138, 61.6%). The highest number of respondents (68, 30.4%), based on education, completed 5 years education. Housewives (76, 34%) were the most prevalent occupational category, followed by the students (50, 22%). Most of the patients (171, 76%) were referred from the outpatient department of other disciplines. (Table 1)

Table 1: Socio-demographic status of the respondents (N=224)

	Frequency (n)	Percentage (%)
Age (year)		
15-30	92	41.1
31-45	68	30.4
46-60	36	16.1
61 and above	28	12.5
Sex		
Male	102	45.5
Female	122	54.5
Marital status		
Married	124	55.4
Unmarried	54	24.1
Divorced	11	4.9
Separated	06	2.7
Widow/Widowed	29	12.9
Educational status		
Illiterate	28	12.5
Primary	68	30.4
Up to SSC	62	27.7
Up to HSC	43	19.2
Graduation and above	23	10.2
Occupation		
Farmer	17	7.6
Housewife	76	33.9
Business	27	12.1
Service	28	12.5
Student	26	11.6
Residence		
Rural	138	61.6
Urban	86	38.4
Source of patients		
Inpatient department	53	23.7
Outpatient department	171	76.3

During considering the referrals from different disciplines, it was seen that the majority of the patients were referred from the medicine and allied disciplines (194, 86.6%); the most referring departments were gastroenterology (63, 28%), medicine (51, 22%), dermatology (28, 12.5%), neuromedicine (24, 10.7%) and endocrinology (21, 9.4%), respectively. The referrals from the departments of surgery (17, 7.6%) and gynaecology (3, 1.3%) constituted a minority (20, 9%). Surgery and allied disciplines made up some one-tenth (27, 12%) of the referrals. (Table 2)

Table 2: Department-wise referral (N=224)

Department	Frequency (n)	Percentage (%)
Medicine	51	22.8
Neuromedicine	24	10.7
Gastroenterology	63	28.1
Endocrinology	21	9.4
Dermatology	28	12.5
Paediatrics	4	1.8
Surgery	17	7.6
Orthopaedics	4	1.8
Gynaecology	3	1.3
Cardiology	3	1.3
Otolaryngology	3	1.3
Ophthalmology	3	1.3
Total	224	100.0

Among the respondents, majority were suffering from neurotic disorders (197, 87.5%) and a smaller portion (27, 12.5%) were suffering from psychotic disorders and substance related disorder. Common psychiatric diagnoses were generalized anxiety Disorder (72, 32%), somatic symptom disorder (44, 19.6%) and major depressive disorder (30, 13.4%); and these three disorders totalled to 146 patients or 65% of the referrals. Other neurotic disorders, such as panic disorder, social anxiety disorder, functional neurological symptoms disorder and obsessive-compulsive disorder also had a considerable share among the patient population (50, 22.2%). Psychotic disorders (schizophrenia and bipolar mood disorder) were found in 8.5% of the referred patients and substance related disorders were present in 4% of the respondents. (Table 3)

Table 3: Psychiatric diagnosis of the respondents (N=224)

Psychiatric diagnosis	Frequency (n)	Percentage (%)
Generalized anxiety disorder	72	32.1
Panic disorder	17	7.6
Somatic symptom disorder	44	19.6
Obsessive compulsive disorder	3	1.3

Psychiatric diagnosis	Frequency (n)	Percentage (%)
Social anxiety disorder	16	7.1
Functional neurological symptom disorder	14	6.2
Major depressive disorder	30	13.4
Substance related disorder	9	4.0
Schizophrenia	13	5.8
Bipolar mood disorder	6	2.7
Total	224	100.0

Among the referred patients, 70% patients (n=156) had no comorbid physical disorder, they had only psychiatric disorder. Among the patients having physical comorbidities (n=68), 5.4% patients had hypertension and 5% patients had peptic ulcer disease. (Table 4)

Table 4: Comorbid diagnosis of the respondents (n=68)

Comorbid diagnosis	Frequency (n)	Percentage (%)
Hypertension (HTN)	12	5.4
Peptic ulcer disease	11	4.9
Diabetes mellitus (DM)	7	3.1
Irritable bowel syndrome	7	3.1
Others	23	10.3
DM+HTN	8	3.6

Discussion

This descriptive cross-sectional study was done in the department of psychiatry in a tertiary level hospital to see the referral pattern and to make psychiatric diagnoses of the referred patients. Age distribution showed that more than two fifths of the respondents (92, 41 %) were within 15 to 30 years of age; similar findings was observed in the study conducted in BIRDEM General hospital in 2017.¹⁵ This age group is the more active part of the society and the first episode of various psychiatric diseases usually occur in this age group and they require treatment more than other age groups. In this study, only 12.5% patients were above 60 years of age; older age group was also less in number in BIRDEM general hospital study¹⁵ and another Indian study¹⁷ and this may indicate that the older people's prominent concern with physical ailments. The number of females (122, 54.5%) outweighed males in our study and this was consistent with other studies.^{15,18} Psychiatric morbidity and somatic symptoms are more in female persons and the daytime outdoor setting is not suitable for male working patients to attend which may influence the slightly higher number of females in this study.

In the current study, the percentage of outpatient refer-

als (76%) were more than inpatient (24%) referrals; it is comparable with the study from National Institute of Neurosciences and Hospital, Dhaka.⁴ In this study, the majority of the patients were referred from the medicine and allied disciplines (86.6%); the most referring departments were gastroenterology (28%), medicine (22%), dermatology (12.5%), neuromedicine (10.7%), and endocrinology (9.4%), respectively. The lion's share of the referrals was from medicine allied departments which was consistent with various previous studies.^{15,16} The higher number of referrals from the gastroenterology department may be explained by the local people's concern with 'gas' in their abdomen and the tendency to reason any physical or psychological complaints occurring from this 'gas'. The number of referrals from general surgery and allied (otolaryngology, orthopaedics, ophthalmology) was 12%. The referral from paediatrics (1.8%) and gynaecology (1.3%) were relatively low. This all is comparable to previous studies done at similar rural settings of our country.¹⁶ Most of the referred patients were suffering from neurotic disorders (87.5%) and a smaller portion (12.5%) were suffering from psychotic disorders and substance related disorder. Similar situation was seen at home and abroad.^{4,13,16} The diagnoses of generalized anxiety disorder (32%), somatic symptom disorder (19.6%) and major depressive disorder (13.4%) summed to 65% of the patients. This was similar to a study done at rural setting of Bangladesh as well as urban setting.^{4,16} The occurrence of psychotic and neurotic disorders among the referred patients were consistent with previous findings in similar rural settings.¹⁹

In this study, comorbid physical disorders were not found in 70% of the referred patients, but they presented in different departments other than psychiatry, with somatic components of psychiatric disorder; this may be due to stigma of being diagnosed with a psychiatric disorder which occurs largely in the population. There were some limitations of the study including short duration, small sample size, lack of informants in some cases and lack of referral note in some cases. A bigger study is needed to fulfil the gap.

Conclusions

Patients with psychiatric symptoms and comorbidity come to the outpatient and inpatient departments of

mainly medicine and allied disciplines, other than psychiatry itself. We need to increase interaction among psychiatry and rest of the medicine allied departments to enhance overall patient management. At the same time, holding regular scientific seminars, symposia and discussion will better inform other physicians regarding psychiatric presentations.

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Estimates of sexual dysfunction in patients on antipsychotic medications

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Abstract

Background: Sexual performance related side effects of antipsychotic medications are important causes of non-compliance to medications.

Objectives: To estimate sexual dysfunction (SD) in patients taking antipsychotic medications.

Methods: A total of 146 participants taking antipsychotic medications attending the inpatient and outpatient units of National Institute of Mental Health (NIMH), Dhaka were recruited for the study. Bangla adapted version of Psychotropic Related Sexual Dysfunction Questionnaire (PRSexDQ) was used to determine SD along with a semi-structured questionnaire for collecting sociodemographic and relevant clinical information.

Results: Among the 146 participants, 52.1% exhibited SD and males exhibited higher prevalence of SD (58.5%) than females (43.8%). Among the sufferers, 63.2% had shown problems in all three domains of SD, that were desire, arousal and orgasm; 23.7% in desire and arousal; 5.3% in desire and orgasm; 5.3% in arousal and orgasm; and 2.6% solely in desire domain.

Conclusions: More than half of the participants showed SD and it usually affected multiple domains of sexual performance.

Declaration of interest: None

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Keywords: Sexual dysfunction; antipsychotic medication

Introduction

Sexual functioning is an important component of maintaining life quality and intimate relationship. Various studies have reported a prevalence of 30 to 60% for sexual side effects related to treatment with antipsychotics.¹ Antipsychotic drugs modulate neurotransmitters and hormones that can lead to impaired desire, arousal, erectile dysfunction and orgasm.^{2,3} Suggested mechanisms for sexual dysfunction (SD) include dopaminergic D₂ agonism and antagonism; serotonergic 5-HT₂ agonism; adrenergic alpha-1 and alpha-2, histaminergic H₁ and cholinergic M₁ receptors antagonisms; and prolactin elevation.²

Sexual dysfunction has also been identified as one of the major reasons for discontinuing drug treatment.⁴ But researchers have noticed that both patients and

doctors are reluctant to discuss this issue. This study was designed with the aim of determining prevalence and nature of SD in patients receiving antipsychotic medications. Currently there is no comparable study in Bangladesh and the present study aimed to contribute to this area and raise awareness among physicians.

Methods

It was a cross-sectional study and carried out in the inpatient and outpatient units of NIMH in between January 2019 to September 2019. A total of 146 participants taking antipsychotic medications were recruited by convenient sampling technique. Inclusion criteria were age of more than 21 years, sexually active and having a DSM-5 diagnosis of schizophrenia, schizophreniform disorder, schizoaffective disorder

der or mood disorder with psychotic features. Patients receiving antidepressant or mood stabilizer drugs that might interfere with sexual functioning like alpha blockers, beta blockers, etc. or who had medical condition like hypertension, diabetes, etc. that might affect sexual performance were excluded from the study. A semi-structured questionnaire was used to collect sociodemographic and relevant clinical information. Bangla adapted version of PRSexDQ was used to evaluate SD. The PRSexDQ consists of seven items evaluating the occurrence of sexual dysfunction along with subjective report on decrease of libido, delay of orgasm or ejaculation, lack of orgasm or ejaculation, erectile dysfunction or decrease of vaginal lubrication and the level of patient's tolerance to dysfunction. Sexual dysfunction was defined as having a score equal to or greater than 1 in any of the five items of the PRSexDQ that evaluated the various dimensions of sexual function. Ethical approval was provided by the Institutional Review Board of NIMH. Following data collection, data analyses were completed on the full sample using SPSS 24.0.

Results

The characteristics of the participants are shown in Table 1. Mean age (s.d.) of the participants was 32.6 (9.9) years. They were prescribed eight different antipsychotics and 88.8% of them received one of the following four drugs; risperidone, olanzapine, haloperidol or trifluoperazine. Of the 146 participants, 116 (79.5%) reported that they were taking single drug and 30 (20.5%) were taking two antipsychotics at the same time. Mean duration of illness for the participants was 5.5 years with minimum duration of 0.25 years and maximum duration of 21 years.

Table 1: Characteristics of the participants (N=146)

	Frequency (n)	Percentage (%)
Age group		
18-28	66	45.2
29-39	44	30.1
40-50	28	19.2
51 and above	08	5.5
Gender		
Male	82	56.2
Female	64	43.8
Educational status		
Illiterate	28	19.2
Primary	26	17.8

	Frequency (n)	Percentage (%)
Secondary	58	39.7
Higher Secondary	12	8.2
Honors	22	15.1
DSM-5 diagnosis		
Schizophrenia	96	65.8
Schizophreniform	30	20.5
Schizoaffective	02	1.4
Mood disorder with psychotic features	16	11.0
Other psychotic disorders	02	1.4
Name of the drug		
Haloperidol	30	20.5
Trifluoperazine	18	12.3
Risperidone	60	41.1
Olanzapine	32	21.9
Quetiapine	02	1.4
Clozapine	04	2.8
Fluphenazine	06	4.2
Chlorpromazine	04	2.8
Total	146	100

Estimated proportion of sexual dysfunction as measured by PRSexDQ is shown in Table 2.

Table 2: Proportion of sexual dysfunction among participants (N=146)

Gender	Sexual Dysfunction		Percentage (%)
	No SD (%)	SD (%)	
Male	34 (41.5%)	48 (58.5%)	82 (100%)
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Total	70 (47.9%)	76 (52.1%)	146 (100%)

Three domains of sexual performance that are desire, arousal and orgasm were measured by PRSexDQ. By permutation and combination, we identified seven different types of possible sexual dysfunctions. Seventy-six participants who reported SD are categorized according to their problem domain in table 3. Desire was affected almost universally and only 5.3% had sole disturbances in arousal and orgasm without affecting the desire.

Table 3: Forms of sexual dysfunction (n=76)

Form of sexual dysfunction	Frequency (n)	Percentage (%)
Desire only	02	2.6
Arousal only	-	-
Orgasm only	-	-

Form of sexual dysfunction	Frequency (n)	Percentage (%)
Desire and Arousal	18	23.7
Desire and Orgasm	04	5.3
Arousal and Orgasm	04	5.3
Desire, Arousal and Orgasm	48	63.2
Total	76	100

Discussion

Among the participants, 52.1% reported to have one or more forms of SD. This implies that, patients on antipsychotics are at risk of having SD. Nazareth (2003)⁵ reported a prevalence of 31% in general population. So, in comparison to general population, patients on antipsychotic medications are at higher risk of developing SD. The prevalence of SD was 58.5% among males and 43.8% among females (Table 2). Previous studies have also reported higher prevalence of SD in males (45~80% vs. 30~80%).⁶ The reason behind comparatively low female SD could be explained by cultural values like conservative attitude of Bangladeshi females towards sexual matters, lack of sex education and reluctance to divulge information to male researchers.

Desire part of sexual performance was almost always affected in patients receiving antipsychotics (Table 3). This finding suggests role of dopamine blockade in motivational function. Desire can also be impaired by raised prolactin level. Drugs like haloperidol, trifluoperazine, risperidone thus impaired desire in participants. Some atypical antipsychotics have little prolactin elevating and D₂ blockade properties. However, they may impair arousal/lubrication and orgasm by acting on other receptors like serotonin 5-HT₂, cholinergic M₁, adrenergic alpha-1, alpha-2, histaminergic H₁, etc. Once there is arousal or orgasm difficulty it may eventually lead to performance anxiety, low mood and low desire. This is how we can explain universal involvement of desire/libido in antipsychotic receivers. It is important to note that many psychotic conditions themselves are associated with sexual dysfunction independent of drug therapy.⁴

The cross-sectional design of the study limits the strength of the causal relationship. The long treatment duration with the antipsychotics might be associated

with a survival bias; that is patients who exhibited more severe forms of sexual dysfunction were more prone to discontinue their treatment and therefore were not captured by the study. The sample size for some of the antipsychotics studied, namely chlorpromazine, quetiapine, clozapine was too small and made difficult to reach any conclusion about these medications. Recruiting large enough sample size and conducting study in a tertiary and national referral center might have reduced these biases.

Conclusions

These findings suggest about half of the patients receiving antipsychotics faced sexual problems and all domains of sexual function could be affected. Considering the study findings, appropriate measures should be taken to raise awareness among physicians, patients as well as family members.

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Estimates of sexual dysfunction in patients on antipsychotic medications

A S M Kowser, Md. Mamun Al Mujahid, Ahsan Aziz Sarkar

Abstract

Background: Sexual performance related side effects of antipsychotic medications are important causes of non-compliance to medications.

Objectives: To estimate sexual dysfunction (SD) in patients taking antipsychotic medications.

Methods: A total of 146 participants taking antipsychotic medications attending the inpatient and outpatient units of National Institute of Mental Health (NIMH), Dhaka were recruited for the study. Bangla adapted version of Psychotropic Related Sexual Dysfunction Questionnaire (PRSexDQ) was used to determine SD along with a semi-structured questionnaire for collecting sociodemographic and relevant clinical information.

Results: Among the 146 participants, 52.1% exhibited SD and males exhibited higher prevalence of SD (58.5%) than females (43.8%). Among the sufferers, 63.2% had shown problems in all three domains of SD, that were desire, arousal and orgasm; 23.7% in desire and arousal; 5.3% in desire and orgasm; 5.3% in arousal and orgasm; and 2.6% solely in desire domain.

Conclusions: More than half of the participants showed SD and it usually affected multiple domains of sexual performance.

Declaration of interest: None

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Keywords: Sexual dysfunction; antipsychotic medication

Introduction

Sexual functioning is an important component of maintaining life quality and intimate relationship. Various studies have reported a prevalence of 30 to 60% for sexual side effects related to treatment with antipsychotics.¹ Antipsychotic drugs modulate neurotransmitters and hormones that can lead to impaired desire, arousal, erectile dysfunction and orgasm.^{2,3} Suggested mechanisms for sexual dysfunction (SD) include dopaminergic D₂ agonism and antagonism; serotonergic 5-HT₂ agonism; adrenergic alpha-1 and alpha-2, histaminergic H₁ and cholinergic M₁ receptors antagonisms; and prolactin elevation.²

Sexual dysfunction has also been identified as one of the major reasons for discontinuing drug treatment.⁴ But researchers have noticed that both patients and

doctors are reluctant to discuss this issue. This study was designed with the aim of determining prevalence and nature of SD in patients receiving antipsychotic medications. Currently there is no comparable study in Bangladesh and the present study aimed to contribute to this area and raise awareness among physicians.

Methods

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Lamotrigine induced Stevens- Johnson syndrome: a case report

Nadia Afroz, Rubina Hossain, Shaafi Raaisul Mahmood, Mohammad Tariqul Alam

Abstract

Stevens-Johnson syndrome (SJS) is an immune-complex mediated hypersensitivity reaction and has been linked as an adverse reaction to many drugs that predominantly involve the skin and the mucous membranes. In most of the cases, drugs are clearly the main causative factor. Lamotrigine, an anticonvulsant is recently being used as a mood stabilizer in many psychiatric disorders. Association between SJS and lamotrigine is very rare in psychiatric settings in our country. A 19-year old female with borderline personality disorder who developed Stevens- Johnson syndrome 3 weeks after starting of lamotrigine reflect an important, but rare side effect.

Declaration of interest: None

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Keywords: Stevens-Johnson syndrome; adverse drug reaction; hypersensitivity reaction; skin; mucous membrane

Introduction

Stevens-Johnson syndrome (SJS) is a serious disorder of the skin and mucous membrane.¹ Annual Incidence rate is 2.6 to 6.1 cases per million population and the female: male ratio is 3:2.² SJS is a multifactorial disorder. In 75% of the cases, drug is the main etiological factor and genetic predisposition, viral infection and idiopathic causes account for about 25% of cases.³ This syndrome is mainly caused by hypersensitivity to certain drugs like antibiotics, NSAIDs, valproate, carbamazepine, antimalarial, sulphonamide, allopurinol, lamotrigine, etc.^{1,2} In about 90% cases, there are significant involvement of the skin and mucosa of the eyes, mouth, genitalia and gastrointestinal tract manifested as erythema and erosions that is the hallmark of SJS. Lesion patterns may vary according to the severity of the condition.^{1,4} Among the anticonvulsants, lamotrigine rarely causes SJS. Most common side effects of lamotrigine include headache, nausea, dizziness, diplopia and ataxia. Adverse skin reactions occur in 8.3% of patients taking lamotrigine and only 0.04% develop SJS.⁵ Here we are presenting a case, where a patient developed SJS after 3 weeks of use of lamotrigine but her initial response to treatment was good and did not show any sign of the

syndrome.

Case Report

A 19-year-old girl got admitted to National Institute of Mental health (NIMH) with the complaints of difficulty in controlling anger, emotional instability, unstable interpersonal relationships and history of suicide attempts several times in the last 7 years. The history revealed that she was undergoing regular follow up in a psychiatric OPD for the last 4 years and was receiving sertraline 50 mg and lithium carbonate 400 mg. She had two inpatient hospital admissions after attempting suicide on two occasions in this period of time. Along with drug treatment she also received Dialectical Behavioral Therapy. Initially her response to treatment was satisfactory, but due to discontinuation of treatment, readmission was required. After readmission, lithium was continued but response was poor. As a result lithium was stopped and lamotrigine 50 mg was started in divided doses, then gradually increased the dose to 100 mg, along with an antidepressant and an antipsychotic. Her mood symptoms and mental state showed significant improvement with this combination. But 3 weeks later she developed conjunctivitis and swelling of the lips,

followed by painful erosion in the oral mucous membrane and erosive bloody crust on her lips (Figure 1). Both her hands and legs were covered with erythematous and bullous eruptions with detachment of skin (Figure 2). Eye examination revealed significant chemosis with membrane formation on the palpebral conjunctiva bilaterally. History revealed that no such lesion occurred earlier. Family and personal history was insignificant. Vital signs were within normal limits. As the symptoms worsened, she was referred to a general medical hospital and was clinically diagnosed as a case of Stevens-Johnson syndrome. All her routine investigations were normal except high C-reactive protein. Lamotrigine was stopped immediately and necessary treatment protocol for the condition was started. Her condition improved to some extent in the next 2 weeks and patient was discharged with an antidepressant and an antipsychotic.



Figure 1: Bloody crust on the lips



Figure 2: Erythematous lesions on hand with skin detachment.

Discussion

Stevens-Johnson syndrome is a fatal medical emergency that has been reported to be linked with 100 different types of medications. Hypersensitivity reaction can occur by any antiepileptic drug, but serious cutaneous reactions occur only in small number of patients. Lamotrigine is a novel antiepileptic, not only used as an effective treatment for partial or generalized seizure, but also has been effective for bipolar and other psychiatric disorders as well.⁶ The incidence rate of lamotrigine induced SJS while treating seizure is 1% in children, 3% in adult, and in 16% cases there are history of past use of an antiepileptic drug.^{6,7} When Lamotrigine is used as monotherapy, the risk of development of rash is 0.08% but 0.13% for adjuvant thera-

py.⁶ SJS is more common in females than males and the incidence increases rapidly with an increase in age. The average age for development of SJS is between 46 and 63.¹ But Schlienger et al, after studying 53 cases of lamotrigine induced skin reaction, found that most of the patients who developed SJS were below 18 years of age and their numbers were higher than other age group.⁸ In our case, patient was a 19-year old female using lamotrigine for last 3 weeks. No systemic and viral causes were detected. Rapid dose escalation as well as a single large dose of lamotrigine is directly linked to the increased risk of SJS.⁶ The recommended starting dose is 25mg daily for first 2 weeks followed by 50 mg daily for next 2 weeks. Then increases of 50-100 mg as clinically indicated.^{2,6} We started 50 mg in divided doses from first day of treatment then after 2 weeks we increased the dose to 100mg, which could be a causative factor for this case. SJS is a serious adverse hypersensitivity reaction that demands immediate management. As the risk of development of SJS is rare with lamotrigine, but mortality rate is high (about 5-15%),² so proper identification of the causative factors as well as adequate treatment can reduce the mortality rate.

Conclusions

Stevens- Johnson syndrome is a potentially life-threatening condition and the severity and adversity of the condition suggests immediate application of appropriate intervention. Prevention of lamotrigine induced SJS must be attempted from the beginning, which includes ethical prescribing, gradual addition and careful monitoring of drug combinations and excluding viral and other systemic infections, even though idiopathic factors may play a role.

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1. **Tables** - Tables should be numbered (e.g. Table 1, Table 2...) and referenced in the text of the manuscript. Authors must indicate the desired position of the table in the manuscript. Please ensure tables are a reasonable size. Tables over two typeset pages (around 1,400 words) will be moved to supplementary material. If you use data from another published or unpublished source, obtain permission and acknowledge that source fully.

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3. **Supplementary Material** – Material related to a paper but not essential to a general understanding of the paper will be published as an online data supplement. This material includes, but is not restricted to:

- a) Additional data presented as tables or figures
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4. **Publication Agreement** - A signed publication agreement must be submitted online when submitting a revised version of the manuscript, or immediately after acceptance if no revision is required.

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Five types of manuscripts may be submitted.

Original Article:

1. The word count should be between 3,000 and 4,000 words and may include up to 25 essential references.
2. Structured abstract of up to 250 words with the headings: Background; Objectives; Methods; Results; and Conclusions.
3. Main text should include the following sections: Introduction, Methods, Results and Discussion.
4. Introductions should be no more than one paragraph. Longer introductions may be permissible but should be split with subheadings if they exceed two paragraphs.
5. Discussion section should always include limitations of the paper to ensure balance, use of subheadings is encouraged in this section. A Conclusions section is not mandatory in the main text.
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1. There is no word limit or maximum number of references, tables or figures.
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Attention should be paid to providing a clear description of study designs and objectives, and evidence that the statistical procedures used were both appropriate for the hypotheses tested and correctly interpreted. The statistical analyses should be planned before data are collected and full explanations given for any post hoc analyses carried out. The value of test statistics used (e.g. t, F-ratio) should be given as well as their significance levels so that their derivation can be understood. Standard deviations and errors should not be reported as \pm but should be specified and referred to in parentheses.

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1. Use only standard abbreviations; use of nonstandard abbreviations can be confusing to readers.
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