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World Autism Awareness Day 2022: inclusive quality education for all

Niaz Mohammad Khan

Autism spectrum disorder (ASD) is a category of neurodevelopmental disorders the prevalence of which has increased over time. Since 2008 the United Nations has started celebrating 2nd April as the world autism awareness day each year to raise awareness. As like the previous years, in 2022 world autism awareness day has been observed worldwide. This year's theme was "Inclusive Quality Education for All". It was observed through various activities home and abroad. The government of Bangladesh is giving priority to Autism and Neurodevelopmental Disorders in many areas like protection of rights, inclusiveness, service and education.

Declaration of interest: None

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Autism spectrum disorder (ASD) is a category of neurodevelopmental disorders characterized by social and communication impairment and restricted or repetitive behaviors.¹ The reported prevalence of children with ASD has increased over time. This increase may be attributable to several factors, including broadening in the diagnostic criteria with ongoing revisions of the Diagnostic and Statistical Manual of Mental Disorders (DSM), the more inclusive definition of pervasive developmental disorder with the adoption of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) in 1994, increased public awareness of the disorder and its symptoms, recommendations for universal screening for ASD.² Systematic reviews suggest a prevalence rate of 1 per 100 in developed countries with a lower rate in developing countries. High rates (3%) have been reported in South Korea and Japan. These findings will need replication as cultural, or measurement issues may have contributed.³

Throughout its history, the United Nations has embraced diversity and advocated for the rights and well-being of people with disabilities, such as learning and developmental disabilities. It is a critical tool for fostering a more inclusive and caring society for all people, as well as ensuring that all children and adults with autism can live full and meaningful lives. The United Nations General Assembly overwhelmingly declared April 2nd as World Autism Awareness Day (A/RES/62/139) to emphasize

the importance of assisting persons with autism in improving their quality of life so that they can live full and meaningful lives as contributing members of society since 2008.⁴

As like the previous years, in 2022 world autism awareness day has been observed worldwide. This year's theme was "Inclusive Quality Education for All". There are several approaches to educate children with Autism. Most simply they can be classified as Inclusive Education- Regular primary schools providing education for all children; Integrated Education- A special unit within the compound of the regular school providing a resource room and resource teachers to support children with disabilities; Special Education- A segregated education setting that follows a special curriculum and provides teaching materials and aids and special teachers for children with disabilities; and lastly Vocational and technical education. Over the last decade, significant progress has been made in expanding educational opportunities for people with autism in general. However, when the COVID-19 pandemic spread over the world in 2020, most countries announced temporary school closures, affecting more than 90% of the kids globally. The pandemic's interruption of learning has halted years of progress and increased educational inequality. Many students with autism have been particularly badly hit and studies reveal that interruptions to routines, as well as services and supports

that they rely on have disproportionately affected them.⁵

The 17 sustainable development goals (SDG) which were endorsed by world leaders at the United Nations in 2015, present a roadmap for addressing the world's key concerns including inequality. As the cornerstone for enhancing people's lives and decreasing disparities, sustainable development goal 4 (SDG 4) focuses on guaranteeing inclusive and equitable quality education and fostering lifelong learning opportunities for all. SDG 4's particular aims include ensuring "equal access to all levels of education and vocational training" for people with disabilities, as well as constructing and renovating disability-friendly educational facilities that enable "inclusive and effective learning environments for all."⁶

The issue of inclusive education is inextricably tied to last year's world autism awareness day theme, "Inclusion in the Workplace." Panelists at last year's event underlined the importance of promoting inclusive, high-quality education for people on the autism spectrum so that they can realize their full potential and achieve long-term employment success. In this regard, inclusive education is the key to realizing the revolutionary potential of the sustainable development goals, which is to LEAVE NO ONE BEHIND. The main purpose of Inclusive Education for the children with autism is to provide a fundamental human right, educational opportunities to all children without discrimination, education that is accepted by society, having right to society and gain a sense of belonging, improved cognitive and social outcomes, etc.

The government of Bangladesh is giving priority to Autism and Neurodevelopmental disorders in many areas like inclusiveness, service and education. In 2011, Dhaka hosted a large international conference on autism and NDDs that was organized by the Government of Bangladesh (GoB), World Health Organization (WHO) and Autism Speaks. There were more than 1,000 delegates from 26 countries, as well as several dignitaries from the region, namely Sheikh Hasina, the Prime Minister of Bangladesh and the chief guest of the conference. That conference and the ensuing Dhaka Declaration on Autism Spectrum Disorders and Developmental Disabilities sparked a massive nationwide movement that put autism firmly in the public consciousness. Where 15 years ago Bangladeshis didn't know what these disorders were, today, the word "autism" is established in the Bengali vocabulary that even rural people know about.

Bangladesh has already established the necessary political will as evidenced by the passing of the Rights and Protection of Persons with Disabilities Act 2013,

Neuro-Developmental Disability Protection Trust Act-2013, Bangladesh Rehabilitation Council Act 2018 and Integrated Special Education Policy 2019 and the setup of the National Steering Committee for Autism & NDDs (NSCAND) in 2012. The government has already provided online training to 390 parents or guardians in 190 upazilas of 53 districts of Bangladesh amid COVID-19 situation to give home-based care and care of mental health of children and persons with autism. At the same time, 450 teachers from 115 schools in 105 upazilas of 60 districts have been trained and this is an ongoing process. Two online applications called 'Bolte Chai' and 'Autism Barta' have been created. Under the NDD Protection Trust, 'Autism and NDD Service Centers' are being set up in 14 upazilas this year as a pilot project and through these centers, 17 different types of services including international standard early intervention will be provided to NDD children and individuals with autism through multi-disciplinary team with social and medical methods.

Once upon a time, autism was a neglected public health issue. There was a negative perception in the society about this. However, Prime Minister Sheikh Hasina's daughter and school psychologist, Saima Wazed's relentless efforts have raised awareness about autism nationally and internationally. We can hope for a better future for the people with autism now.

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Psychiatric comorbidities with autism spectrum disorder in an adult clinical sample

Rifat Binte Radwan, Chiro Islam Mallik, Mohammad S I Mullick

Background: As part of continuity, prevalence of autism spectrum disorder (ASD) is nearly the same as children and is associated with other comorbid psychiatric disorders that have substantial impact on their life and complex the intervention.

Objectives: This study was aimed to examine psychiatric co-morbidity in referred adult ASD patients compared to non-ASD psychiatric patients.

Methods: In total, 36 adult ASD patients from a psychiatric consultation center in Dhaka city were included in the study consecutively who were referred for psychiatric consultation during the period of 2019. Equal number of age and sex-matched non-ASD psychiatric patients were selected for comparison. Socio-demographic information and clinical assessment-based on DSM-5 diagnosis of the cases were made.

Results: Patients' age ranged from 18-41 years with a mean of 26.72 ± 6.5 years. Male-female ratio was 1.6:1. Mean number of psychiatric disorders was 1.92 in patients with ASD and 1.67 in patients without ASD and the difference was significant ($P = 0.04$). Most three frequent co-morbidities among ASD patients were obsessive-compulsive disorder (27.8%), major depressive disorder (25%) and specific phobia (19.4%). All these disorders were significantly higher in ASD patients than in non-ASD psychiatric patients. Conversely, major depressive disorder (30.6%), bipolar disorder (19.4%), schizophrenia, generalized anxiety disorder and substance-related disorder (13.9% each) were higher among non-ASD patients.

Conclusions: Subsequent broad-based studies using extensive measures of psychopathology are required to confirm these preliminary findings. Greater understanding of the presence of other psychiatric disorders in ASD patients will turn this awareness into action.

Declaration of interest: None

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Keywords: ASD; adults; psychiatric comorbidity.

Introduction

An increasing number of autism spectrum disorder (ASD) children enter adulthood along with this lifelong disorder and face additional difficulties while coping up with daily challenges of life. ASD is well monitored in the child and adolescent population due to its vast impact in childhood.

Throughout the globe, the prevalence of ASD is ranging from 0.3 to 3% among children.¹⁻⁹ From these studies, it is found that prevalence of ASD in children of developed countries is way more than the children of developing countries. However, the trend of prevalence is increasing,

and it is likely contributed to by extrinsic factors such as increased awareness and diagnostics.^{8,9} Studies from USA showed that from 2010 to 2016, children identified with ASD has increased from one in 68 children to around one in 54 children (18.5 per 1,000 8-year-olds).^{10,11} In Bangladesh, there are a few studies exploring the prevalence of ASD among children ranged from 0.2-0.75%.^{12,14} As the ASD has adulthood continuity, the prevalence among the adult population for this disorder is expected to be more or less the same. With dramatically increasing prevalence, autism is rapidly becoming a disorder of adulthood as well.¹⁵ The developmental trajectory of children with autism shows both continuity and change.¹⁶ The lifelong continuity of ASD is also reported in studies. It is currently estimated that by 2026, in the UK alone, another 1.7 million adults will need some type of care; among whom minimum 1% will be adults and older individuals with ASD and learning disability.¹⁷ The first published information on the epidemiology of ASD among the adult population depicted that the prevalence of ASD in English adults was 9.8 per 1000.5 Earlier in May 2020, The Centers for Disease Control and Prevention published the first study to estimate the prevalence of autism in U.S. adults age 18 and older and that was 2.21%. It also reported that ASD prevalence among adults is increasing.^{15,18}

People with ASD suffer a lot due to the disorder itself; sadly, they suffer a lot when they have other comorbidities. Research has found that, beside the core symptomatology, ASD people are frequently affected by psychiatric co-morbidities and behavioral problems.¹⁹ Some studies of children with ASD have depicted comorbid psychiatric condition in higher rates which ranges from 70% to 80.9%.²⁰⁻²⁴ Several studies demonstrated that the frequently reported psychiatric disorders in children and adolescents with ASD include mood disturbance, anxiety disorders, attention deficit hyperactivity disorder, tic disorder and oppositional defiant disorder.^{21-23,25-27}

However, pediatric psychiatric disorders like emotional and behavioral problems tend to diminish over the period from childhood to adulthood and the probable reason behind this could be internalization of behavior, an adjustment to stable routine, emotional and physical maturation.²⁸ Pattern of co-morbidity among children and adolescents with ASD is much different from the pattern of comorbidity in adults with ASD.^{28,29} Frequently reported psychiatric disorders in adults with ASD include obsessive-compulsive disorder, major depressive disorder, specific phobia, social phobia, generalized anxiety

disorder. Another study reported that, among the adult ASD patients, 16% were suffering from depression, anxiety 10%, psychoses 7%, OCD 5% and learning disability 4%.¹⁹ These psychiatric comorbid conditions have immense potential to impact the outcome among adults, who have ASD from childhood.^{21,22,28,30} In a nutshell, presence of these comorbidities further worsen the already compromised cases of ASD^{31,32} and while being at a psychosocial rehabilitation, these comorbidities are more likely to cause interference with critical efforts.²⁷

There are very limited studies depicting the clinical characteristics of this lifelong disorder in adult population.²⁷ To plan the community service and optimize the quality care of these patients' lives, it is crucial to understand the adult outcomes associated with ASD.^{32,33} In Bangladesh, to the researchers' best knowledge, no study has yet been reported with the information on the adult ASD including co-morbidities of ASD exclusively in adults. The objective of the present study was to delineate the proportion and types of psychiatric co-morbidities among adult patients with ASD in comparison with non-ASD psychiatric patients. It has been hypothesized that adult patients with ASD have more psychiatric co-morbid conditions than other non-ASD general psychiatric patients.

Methods

This cross-sectional, quantitative, descriptive, and comparative type of study was conducted in a psychiatric consultation center in the city of Dhaka during the period of January to December 2019. The patients attend here from all corners of the country. A total of ³⁶ adults with ASD who were referred to the center for psychiatric consultation during the study period were included in the study consecutively. Similar number of age and sex-matched psychiatric patients with at least one non-ASD diagnosis were selected from the same center for comparison. The socio-demographic and relevant data were collected. It contained variables that were proved to be effective to compare the psychiatric disorders between patients with ASD and patients without ASD. These were age, sex, social background, economic status, educational background whether they had received mainstream education or special education, occupation, marital status, and family type. The third author (MM), who is an experienced senior consultant psychiatrist, to whom patients were referred confirmed diagnosis. The process of psychiatric diagnosis was clinical and phenomenally based. Detailed history of a subject was taken from the patient and attending reliable informants. After that clinical

examination, mental status examination and relevant investigations were carried out. The assessment was done either in single or in multiple settings as per requirement. The diagnoses were assigned by careful interpretation of all available information, clinical examination, and relevant investigations according to DSM-5. In the ASD group, any other associated diagnosis of psychiatric disorder was considered as co-morbid psychiatric disorder. On the other hand, in the non-ASD group, any other psychiatric disorder at the same time with one main psychiatric diagnosis was considered as co-morbidity. All collected data were cleaned by checking and rechecking for omissions, inconsistencies, and improbabilities. Data was edited, coded, and entered the computer. After managing data properly, it was analyzed in Statistical Package for Social Science (SPSS) version 20. Comparisons of psychiatric disorders were made between the two patient groups.

The researchers were duly concerned about the ethical issues related to the study. Confidentiality of information was maintained. Informed written consent was obtained from the participants and their legal guardians after informing them about the nature, purpose and the procedure of the study. Moreover, the participants could withdraw from the study at any time. Participants did not gain financial benefit from this study. The present study posed a very low risk to the participants, as procedures causing psychological, spiritual or social harm were not included.

Results

In total, 72 cases were included in the study, among which 36 adults with ASD were referred to the psychiatric consultation center and the other 36 adults were referred for general psychiatric consultation. The cases ranged from 18 to 41 years with the mean of 26.7 ± 6.5 years. Table 1 shows the socio-demographic characteristics of both the groups.

Table 1: Socio-demographic characteristics ASD and non-ASD patients

Characteristics	ASD patients		Non-ASD Patients		Total		P value
	n = 36	%	n = 36	%	n = 72	%	
Age (in year)							
18-30	27	75	27	75	54	75	0.5
31-42	9	25	9	25	18	25	
Sex							
Male	22	61.1	22	61.1	44	61.1	0.5
Female	14	38.9	14	38.9	28	38.9	
Education							
No education	12	33.3	-	-	12	16.7	0.0
Mainstream education	14	38.9	36	100	50	69.4	
Special education	10	27.8	-	-	10	13.9	
Both mainstream and special education	1	2.8	-	-	-	-	
Occupation							
Unemployed	20	55.6	7	19.4	27	37.5	0.01
Employed	5	13.9	8	22.2	13	18.1	
Student	9	25	15	41.7	24	33.3	
Housewife	2	5.6	6	16.7	8	11.1	
Social Background							
Rural	11	30.6	17	47.2	28	38.9	0.1
Urban	25	69.4	19	52.8	44	61.1	

Characteristics	ASD patients		Non-ASD Patients		Total		P value
	n = 36	%	n = 36	%	n = 72	%	
Income group							
Low	3	8.3	13	36.1	16	22.2	0.01
Middle	23	63.9	19	52.8	42	58.3	
High	10	27.8	4	11.1	14	19.4	
Marital Status							
Unmarried	22	61.1	21	58.3	43	59.7	0.5
Married	14	38.9	15	41.7	29	40.3	
Family Type							
Nuclear	16	44.4	22	61.1	38	52.8	0.1
Joint	20	55.6	14	38.9	34	47.2	

It depicts that 75% of the cases were aged below 30 years and the rest 25% cases were aged from 31-42 years. Among the pool of two groups, from a total 72 cases, 22 were male and 14 were female in each group. Therefore, the age and sex of both groups were found to be matched. The male-female ratio was 1.57:1. On educational background, ASD patients were higher in no education (33.3%) and special education (27.7%) categories, and the result was significant as there were no non-ASD patients in these groups. In contrast, all the non-ASD patients had mainstream education and it was significantly higher than ASD patients (100% vs. 38%). In terms of occupation, students, employed and housewives were comparatively more found in non-ASD patients and those were 41.70%, 22.20% and 16.70%, respectively. On the other hand, unemployed individuals were hugely more in number among the ASD patients (55.6%) and that was significant. Whereas students in this group were approximately 25%, 13.9% were employed and only 5.6% were housewives. A bigger part of the subjects came from urban settings (61.1%) and the rest came from the rural area. On the economic background, 58.3% of subjects came from the

middle-income families followed by low-income (22.2%) and high-income (19.4%) families. The ASD patients came significantly more from the middle and high-income group (63.9% and 27.8%) and non-ASD patients came more from the middle-income group (52.8%). In the group of patients with ASD, around 61.1% cases were unmarried whereas in the non-ASD patients 58.33% were unmarried. Most of the ASD cases came from joint families and that was 55.60%. In contrast, most 61.10% psychiatric cases without ASD belonged to the nuclear family.

Proportion and mean of comorbid psychiatric disorders other than main diagnosis among the patients of both the groups is presented in Table 2. It reveals that among the patients with ASD, 83.3% had at least one or more comorbid psychiatric disorders whereas; this was found 55.5% among the non-ASD patients. This difference was highly significant (p= 0.02). Further, the mean number of co- morbid psychiatric disorders was 1.9±1.1 in patients with ASD and it was 1.6±0.72 in the patients without ASD. The difference was measured, and it was also highly significant (p=0.039).

Table 2: Proportion and mean of comorbid psychiatric disorders in ASD and non-ASD patients

Patient's Group	Co-morbidity n (%)		P value	Mean	SD	SE Mean	P value	Odds Ratio
	Present	Absent						
ASD	30 (83.3%)	6 (16.6%)	0.02	1.9	1.1	0.188	0.04	4
Non-ASD	20 (55.5%)	16 (44.4%)		1.6	0.7	0.120		

The frequencies of comorbidities were calculated and are presented in Figure 1. It shows that an overall higher frequency of comorbid psychiatric disorders was found among ASD patients in terms of two and three comorbidities (30.56% and 36.11%, respectively). On the other hand, non-ASD patients had lower frequency of psychiatric comorbidities as expressed in higher rate of no and single comorbidity (44.44% and 36.11% respectively).

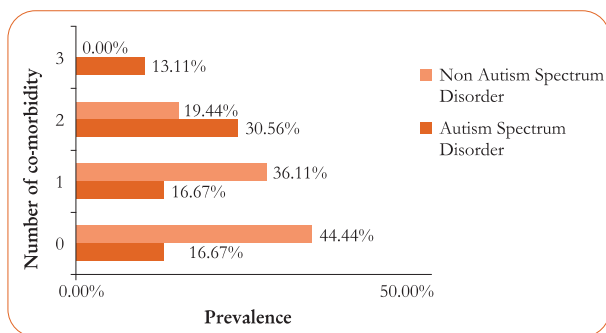


Figure 1: The frequency of comorbidities in ASD and non-ASD patients

Table 3 shows the types of specific comorbid psychiatric disorders. It depicts that among the ASD patients, the most frequent comorbidity was obsessive-compulsive disorder (27.8%) which was followed by major depressive disorder (25%) and specific phobia (19.4%) that were significantly higher than the non-ASD patient group. After these, attention deficit/hyperactivity disorder (ADHD), social phobia and intermittent explosive disorder were commonly found in this patient group and the frequency was 16.7%. Conduct disorder (11.11%) and generalized anxiety disorder came next in the line according to frequency. Moreover, both tic disorder and other specified disruptive impulse control & conduct disorder were found to be 8.33% each among the ASD patients. Apart from these, psychosis (not otherwise specified), sibling rivalry disorder, other specific anxiety disorder and oppositional defiant disorder were also diagnosed in the ASD patient group and their frequency was 2.8% each. Among the non-ASD patient group, the most commonly reported disorder was major depressive disorder, which was 30.6%. Bipolar mood disorder (19.4%) followed it. Schizophrenia,

generalized anxiety disorder, substance related disorder and conversion disorder were found to be 13.9% more frequent among this patient group. Panic disorder and illness anxiety disorder followed the frequency trail with 8.33% for each. Between these two groups, patients with obsessive-compulsive disorder, specific phobia, ADHD, social phobia and intermittent explosive disorder were found more in number and frequency in the ASD patient group and the difference is highly significant ($p=0.03, 0.03, 0.01, 0.05, 0.01$, respectively). Conversely, major depressive disorder, bipolar mood disorder, substance-related disorder, conversion disorder, schizophrenia and generalized anxiety disorder were more common in the non-ASD patient group than the ASD patient group. However, the difference was significant only for conversion disorder ($p=0.03$). Conversion disorder, panic disorder and illness anxiety disorder were not found in ASD patient group but found in non-ASD patient group in 8.3-13.9% cases, whereas, tic disorders, conduct disorder, other specified disruptive, impulse-control, and conduct disorder and attention-deficit/hyperactivity disorder were not reported in non-ASD patients but found among ASD patient group in 8.3-16.7% cases.

Discussion

This study was carried out to document the comorbid psychiatric disorders in ASD patients and compare them with other psychiatric patients without ASD who were referred to a psychiatric consultation center for assessment, diagnosis and treatment. In total, 36 adult patients with ASD suffered from high rates of psychiatric comorbidity at a frequency that was comparable to the psychiatrically referred adult patients without ASD.

At referral, most of the cases were young adults of below 30 years. ASD is an early childhood onset, pervasive and life-long disorder, which has not been considered with priority until recently in Bangladesh. Another reason could be that the reported prevalence of ASD in Bangladesh was 0.2%,¹² 0.84%³⁴ and 0.15%¹³ in 2005, 2009 and 2017, respectively. These detected cases came into the system of follow up gradually for a better living. Probably therefore, the age of 75% cases were below 30 years. Most of these

Table 3: Specific comorbid psychiatric disorders in ASD and non-ASD patients

Specific diagnosis	ASD patient Group		Non-ASD patient group		P value
	Frequency	%	Frequency	%	
Obsessive-Compulsive Disorder	10	27.8	3	8.3	0.03
Conduct Disorder	4	11.1	-	-	0.06
Major Depressive Disorder	9	25	11	30.6	0.40
Schizophrenia	1	2.8	5	13.9	0.09
Tic Disorders	3	8.3	-	-	0.12
Generalized Anxiety Disorder	4	11.1	5	13.9	0.50
Other Specified Disruptive, Impulse-Control, and Conduct Disorder	3	8.3	-	-	0.12
Attention-Deficit/Hyperactivity Disorder	6	16.7	-	-	0.01
Intermittent Explosive Disorder	6	16.7	-	-	0.01
Specific Phobia	7	19.4	1	2.8	0.03
Social Phobia	6	16.7	1	2.8	0.05
Substance-Related Disorder	2	5.6	5	13.9	0.21
Bipolar Mood Disorder	2	5.6	7	19.4	0.08
Psychosis Not Otherwise Specified	1	2.8	-	-	0.50
Sibling Rivalry Disorder	1	2.8	-	-	0.50
Other Specific Anxiety Disorder	1	2.8	-	-	0.50
Avoidant Personality Disorder	-	-	1	2.8	0.50
Panic Disorder	-	-	3	8.3	0.12
Illness Anxiety Disorder	-	-	3	8.3	0.12
Conversion Disorder	-	-	5	13.9	0.03
Borderline Personality Disorder	-	-	2	5.6	0.25
Somatic Symptom Disorder	-	-	2	5.6	0.25
Sexual Dysfunction	-	-	1	2.8	0.50
Oppositional Defiant Disorder	1	2.8	-	-	0.50
Agoraphobia	-	-	2	5.6	0.25
Antisocial Personality Disorder	-	-	1	2.8	0.50
Histrionic Personality Disorder	-	-	1	2.8	0.50
Delusional Disorder	-	-	1	2.8	0.50
Somatic Symptom Disorder	-	-	1	2.8	0.50
Dependent Personality Disorder	-	-	1	2.8	0.50
Dissociative Amnesia	-	-	1	2.8	0.50

cases were diagnosed before and referred to the psychiatric consultation center for regular follow-ups.

In the ASD patient group, most of the cases (38.9%) have received mainstream education. Since ours is a country of lower middle income, maintaining a life-long treatment for ASD patients is difficult. Moreover, providing special education and teaching basic life skill training to these patients is easier said than done. Even after that, 27.8% of patients with ASD had received special education and only one patient (hailing from a middle-income family), i.e., 2.8% of the ASD sample had received both the mainstream education and special education. Furthermore, 33.3% had not received any formal education at all in this group. All these findings are clearly indicative of gross academic failure of the ASD patients and that must have a severe impact on them. Patients with ASD are more likely to receive special education to lead a balanced life with this life-long disorder. They need to have basic training, certain adjustment in lifestyle and a strict routine. ASD patients usually utilize these special education services from their childhood by receiving extra tuitions, placement in special classes and they are more in need of mental health interventions including combination of pharmacotherapy and counseling.²⁷ Again, parents of the ASD patients also have expressed their satisfaction about receiving special education and a maintained life-style.³⁵

Comparing the other socio-economic variables, the occupation between ASD and non-ASD patient groups, a large proportion of the subjects, especially from the ASD cases, remain unemployed and that is 55.6%, which is almost three times more than the non-ASD patient group. This finding is supported by another study from Paris.³⁶ On the other hand, non-ASD patients have twice the chance of getting employed than ASD patients. Most of the cases came from the urban middle-income section. Studies from India, the country that has almost the same socio-economic-cultural condition have the same findings. The reason behind these findings is probably due to fact that the high-income families do not frequently seek

treatment for ASD from a public psychiatric center and families from the low socio- economic status do not have access to such facilities unless their children are acutely ill.^{37,38,39} It appears that both psychiatric patient groups, either with or without ASD have difficulties in having a long-term relationship. One interesting fact appeared in the family structure of psychiatric patients with ASD and that is approximately 55.6% of them comes from a joint family. Probably this is because multiple careers are needed to give proper attention and support to the ASD patients and this factor binds up all the family members to stay together. This theory is not supported by other studies though.

In the present study, majority of the ASD patients (83.3%) had comorbid disorders. On the other hand, around 55.6% non-ASD patients had comorbidities. Conversely, in the non-ASD patient group no comorbidity was found in 44.4% patients and it was 16.7% in the ASD patient group. Moreover, most of the psychiatric disorders were significantly higher in patients with ASD than in patients without ASD. Adult psychiatric patients with ASD were four times more likely to have comorbidities than those, who did not have ASD. This finding clearly supports that autism is a fertile field for nurturing other psychiatric disorders due to shared biological and environmental risk factors.^{40,41}

Substantial variability may exist among the reported rates of comorbid psychiatric disorders in adults with ASD. Several factors like small sample size, selection bias and range of study participants' intellectual findings can cause this variation.²⁰ In this study sample, the most frequent comorbid condition among psychiatric patients with ASD was obsessive-compulsive disorder, followed by major depressive disorder and specific phobia. Specific phobia was the most common anxiety disorder followed by social phobia and generalized anxiety disorder. These findings are consistent with the result of another similar study²⁷ that stated that the most common psychiatric diagnosis in adults with ASD were mood and anxiety disorders, followed by emotional and behavioral disorders like ADHD and

intermittent explosive disorder. There are some other studies which have found that a high rate (30%) of adult psychiatric patients with ASD have co morbid ADHD.^{25,29,42}

Obsessive-compulsive disorder, specific phobia, social phobia, intermittent explosive disorder and ADHD have high significance among adult ASD patients. In this sample, it appeared that adult psychiatric patients have three times more risk of having OCD if they have ASD. Similarly, patients with ASD have seven times more risk of having specific phobia and a significantly increased risk of having ADHD. These findings are supported by other studies of adult ASD patients.^{27,43} In a nutshell, it can be said that individuals with ASD have 65-90% risk of developing concomitant psychiatric disorders^{43,44} with however seemingly different pattern of co-morbidities. These patterns include higher rates of co-occurring anxiety, depression, bipolar disorder (7%) and schizophrenia or other psychotic disorders (7.8%).^{40,41} This variation in findings may be found due to the above mentioned factors.²⁰ At the time of evaluation, majority of the ASD adults (around 85.75%) who already had social phobia were also experiencing social anxiety and this finding is supported by the study in Boston, USA.²⁷ Both the studies found out that among anxiety disorders, panic disorder is the least frequent in adult ASD patients. Among mood disorders, major depressive disorder was found most frequently in both adult ASD and non-ASD patients. The high rate of major depressive disorder co-morbidity in adult ASD cases may result from having difficulty to communicate, social withdrawal, loss of appetite and having sleep disturbance, which are the characteristics of ASD itself.⁴⁵

Among the adult non-ASD cases, schizophrenia, substance related disorder, conversion disorder and illness anxiety disorder are commonly found. However, these disorders are rare in adult psychiatric cases with ASD. On the other hand, intermittent explosive disorder, tic disorder and conduct disorder are common in adults with ASD and comparatively rare in non-ASD cases. Overall, it can be said that adults

with ASD in their lifetime suffer from a significant higher burden of psychiatric disorders. It can be mentioned here that a good number of physical disorders were also present in the ASD patients that were not reported in this study. The co-occurring physical disorders will certainly add insult to the injury.

Naturally, comorbidity exists in psychiatry and expected in nearly half of the cases across age, gender and time. The main reasons for comorbidity are shared biological and environmental risk factors that create complex psychopathology. Considering comorbidity is one of the key issues in clinical psychiatry for adequate intervention to minimize multiplied distress and impairment.⁴⁶ It is widely acknowledged that individuals treated for incident mental disorders are at increased risk of subsequently developing other mental disorders. A nationwide population-based comprehensive cohort study in Denmark revealed that the age- and sex-specific risk of comorbidity was pervasive across all pairs of disorders and that this risk was temporally patterned with higher estimates during the first year after the onset of the first disorder, but with persistently elevated rates during the entire observation period. The comorbidity within mental disorders is pervasive and the risk persists over time.⁴⁷ This largest and most detailed examination of comorbidity within mental disorders provides new insights into the complex nature of comorbidity and its importance. Further in-depth studies on existence, cause and risk estimates of psychiatric comorbidities are required for better intervention and prevention of comorbidity.

The present clinic-based study has some limitations that need to be mentioned. The sample size was small and the data was limited to a one-year span. Diagnoses were clinically based. The diagnosis of intellectual disability was not included in the study which was one of the common comorbidities, because of their provisional nature of diagnosis in the record since the center was not well equipped with the adequate measures. All these limits the generalization of the results. Despite these limitations, this study is the first to depict the psychiatric co-morbidities

among the adult ASD population in Bangladesh and where an under recognition of the compared fact often interferes in optimizing patient care considering its longevity. Additionally, the effects of ASD and other psychiatric disorders on socio-demographic variables as well as the association of psychiatric co-morbidities in patients with and without ASD were also discussed.

Conclusions

This research shows that comorbid psychiatric disorders were frequently found in patients with ASD. This finding has important implications both in clinical practice and research opportunities. While evaluating a case of ASD, clinicians need to consider the possibilities of finding comorbid conditions, rather than consider them within the features of ASD. Subsequent broad-based, multi-centered studies using extensive measures of psychopathology are required to confirm these preliminary findings. Greater understanding of the presence of other psychiatric disorders in ASD patients will turn this awareness into action.

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Caregivers' burden of children with intellectual disability

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Background: Intellectual Disability (ID) is a life-long disability which has a major impact on the lives of the children who suffer and their caregivers. Caring for those who are intellectually disabled is often itself stressful as care-giving affects several aspects of caregiver's life negatively including poor physical and emotional state. Caregivers experience depression, burden, lack of social support and coping resources than non-caregivers. However, little attention is given to the health of the caregivers or families of these children.

Objectives: To find out the level of burden experienced by the caregivers and study their sociodemographic profiles.

Methods: A descriptive, cross-sectional study was conducted among the caregivers of intellectually disabled children attending the child guidance clinic in the outpatient department of National Institute of Mental Health (NIMH), Sher-e-Bangla Nagar, Dhaka. The Bangla version of the Zarit Burden Interview (ZBI-B) scale was applied to measure the level of burden experienced by the caregivers of the intellectually disabled children whose diagnoses were already confirmed by a psychiatrist using the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5). A semi-structured questionnaire was used to find out the sociodemographic variables. Data analysis was done by Statistical Package for Social Sciences (SPSS) version 24.0. Ethical clearance was taken from the authority of NIMH, Dhaka.

Results: The level of burden measured using the ZBI-B scale among the 66 caregivers of the intellectually disabled children, found that 41 (62.1%) of the respondents experienced severe burden and 25 (37.9%) experienced moderate to severe burden. Among them, 50% were in the age group of 31-40 years, 83.3% were females who were mostly mothers of the children (80.3%), 16.7% of the respondents were fathers and 3% were siblings of the intellectually disabled. The respondents attending the outpatient department of NIMH were mostly from urban residence (72.2%) and more than half of them were unemployed or housewives (59.1%). It was also found that with increasing age, level of burden increased and caregivers living in joint families experienced comparatively, less burden. Only 6 (9.1%) of the respondents admitted to have respite care provision, while the remaining 60 (90.9%) respondents did not have any respite care.

Conclusions: All caregivers experience burden taking care of intellectually disabled children. Therefore, education about the child's condition, encouragement, family support, counselling services, regular screening of mothers should also be included in the protocol for management of ID. Community based approaches will help in reaching people who are not even aware of hospital settings for the intellectually disabled children.

Declaration of interest: None

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Keywords: Caregiver burden; intellectually disabled children; tertiary care hospital.

Introduction

Intellectual Developmental Disorder (IDD) or Intellectual Disability (ID), according to the World Health Organization (WHO) has overall prevalence of 1-3% in the global scenario.¹ In Bangladesh, Rabbani et al (2009) reported that the prevalence of intellectual disability is 3.8% in the young children age group of 5 to 17 years.² In November 2013, an act for the protection of the persons with neurodevelopmental disorder was enacted in Bangladesh.³ However, as much attention and laws that have been passed for the rights and better future of the intellectually disabled children, very little attention is given on their caregivers. Caregiver burden is defined as “a multidimensional response to physical, psychological, emotional, social and financial stressors usually associated with the experience of caring”.⁴ Burden of care has two components, namely subjective and objective burden.⁵ Objective burden includes measurable effects such as financial and occupational burden, loss of social and leisure activities, household disruptions, restrictions on relationships within and outside the family, etc. Subjective burden is mainly the psychological sufferings of the caregivers themselves and is experienced by them as embarrassment, shame and guilt, sometimes even hatred, uncertainty, depression, etc. Stress occurs in a broader context than simply providing care for a child with an intellectual disability. Caring for those who are intellectually disabled is often itself stressful as care-giving affects several aspects of the caregiver’s life negatively including poor physical and emotional state. Caregivers experience depression, burden, lack of social support and coping resources than non-caregivers. Hence, we can assume that negative consequences of burden among the caregivers can affect the effectiveness of their care-giving whereas positive gains and satisfaction may enhance their care-giving ability.⁶

In Bangladesh, there have been only a few systematic interventions to raise awareness about children with disabilities at the community level. Several children with their caregivers visit the Child Guidance Clinic of NIMH every week from various areas of the country. While attending these children, the researcher started to grow an active interest in the caregivers who clearly appeared mentally, emotionally and physically distressed. The objective of the study was to find out the level of burden experienced by the caregivers and study their sociodemographic profiles.

Methods

A descriptive, cross-sectional study was conducted in NIMH, Dhaka. It is a 400-bed tertiary level hospital as well as a psychiatric research institute having both inpatient and outpatient departments with a Child Guidance Clinic. The study was carried out for 12 months from April 2020 to March 2021. The sample size to be interviewed was estimated to be 66 for this study. Convenient sampling technique was used to enroll participants and written informed consent was taken from all those who gave consent to participate in the study. Caregivers who got paid or did not live with the children were excluded from the study. Also, caregivers with severe mental disorder were excluded. Both male and female intellectually disabled children in the age group 7-17 years were included but those with co-morbid behavioral disturbances, mental disorders or any other physical illnesses were excluded from the study. Following enrollment, a semi-structured questionnaire containing sociodemographic and other variables was used. The Bangla version of the Zarit Burden Interview (ZBI-B)⁷ scale was applied to measure the level of burden experienced by the caregivers of the intellectually disabled children whose diagnoses were already confirmed by a psychiatrist using DSM-5. The Zarit Burden Interview is a popular caregiver self-report measure used by many agencies, originated as a 29-item questionnaire. The revised version contains 22 items. 21 of the items are supposed to measure several aspects of burden, whereas item 22 is a global measure of burden and is not usually included in factor analyses.⁸ Each item is a statement in which the caregiver is asked to endorse using a 5-point scale. Response options range from 0 (Never), 1 (Rarely), 2 (Sometimes), 3 (Quite Frequently), 4 (Nearly Always). The sum total of the score may range from (0 - 21) indicating little or no burden, (21 - 40) mild to moderate burden, (41 - 60) moderate to severe burden and (61 - 88) refers to severe burden. Data were analyzed with Statistical Package for Social Sciences (SPSS) Windows version 24.0. All ethical issues were considered and ethical clearance was taken from the authority of NIMH, Dhaka.

Results

A total of 66 respondents were interviewed for the study (N=66). Among them, 50% of the respondents were in the age group of 31-40 years and 83.3% were females. The respondents attending the outpatient department of NIMH were mostly from urban residence (72.2%) and more than half of them were unemployed or housewives (59.1%). Table 1 shows the sociodemographic characteristics of the caregivers.

Table 1: Sociodemographic characteristics of caregivers (N=66)

Variable	Frequency (n)	Percentage (%)
Age Group (year)		
21-30	13	19.7
31-40	33	50
41-50	17	25.8
51-60	3	4.5
Gender		
Male	11	16.7
Female	55	83.3
Marital Status		
Single	2	3
Married	57	86.4
Others	7	10.6
Family type		
Nuclear	40	60.6
Joint	26	39.4
Residence		
Urban	48	72.7
Rural	18	27.3
Educational Status		
No formal education	7	10.6
Primary	15	22.7
Secondary	10	15.2
SSC	13	19.7
HSC	4	6.1
Graduate and higher	17	25.8
Occupation		
Unemployed	39	59.1
Service	19	28.8
Self-employed	8	12.1

Among the respondents, 53 (80.3%) of them were mothers of the children. 11 (16.7%) of the respondents were fathers and 2 (3%) were siblings of the intellectually disabled. Only 6 (9.1%) of the respondents admitted to have respite care provision, while the remaining 60 (90.9%) respondents did not have any respite care. (Table 2)

Table 2: Relationship with the child, living with the child and respite care provision status of caregivers (N=66)

Variable	Frequency (n)	Percentage (%)
Relation with the patient		
Mother	53	80.3
Father	11	16.7
Sibling	2	3
Respite care		
Yes	6	9.1
No	60	90.9

The level of burden measured using the Zarit Burden Interview (ZBI) scale among the 66 caregivers of the intellectually disabled children found that 41 (62.1%) of the respondents experienced severe burden and 25 (37.9%) experienced moderate to severe burden. (Figure 1)

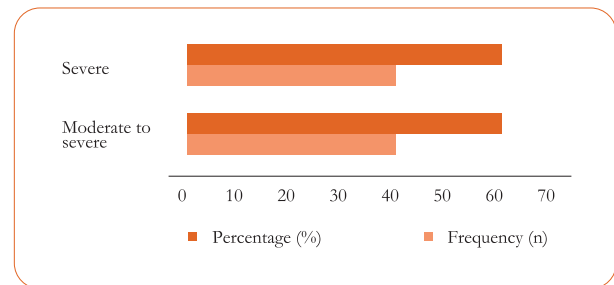


Figure 1: Severity of burden among caregivers (N=66)

Discussion

Among the 66 respondents interviewed, 50% of the respondents were in the age group of 31-40 years. Of the remaining half, 17 (25.8%) of them belonged to 41-50-year age group, 13 (19.7%) belonged to 21-30-year age group and only 3 (4.5%) of the respondents were in 51-60-year age group. These findings were close to the findings similar studies done in Tamil,⁹ Kerala,¹⁰ Kenya.¹¹

A great majority of the respondents (83.3%) were females who were mostly mothers of the children (80.3%), 16.7% were fathers and the remaining 3% were siblings. These findings were similar to Maheswari's study where great majority of the respondents (88%) were females and the remaining were male and especially fathers.⁹ Almost every study on caregivers of ID children showed that females,

especially mothers were the primary caregivers. Studies also show that mothers of children with intellectual disability displayed poor physical health and psychological state, impairment in social relationships and poorer perception of the environment, and the level of burden increased as the severity of ID increased.¹² In the African context, it is more acceptable for the woman to take up the role of the caregiver as the women are responsible for the emotional care of the children which may result in low self-esteem and loss of self and eventually be associated with maternal depression due to subjective care-giving burden among them.¹³

In this study, 17 (25.8%) of them completed graduation or postgraduation, 15 (22.7%) completed primary education, 10 (15.2%) secondary, 13 (19.7%) completed SSC exam, 4 (6.1%) completed up to HSC and 7 (10.6%) of them had no formal education. In an Indian study, majority of the respondents were found to be educated up to secondary level⁹ as well as in another study conducted by Kaur and Arora.¹⁴ These findings were not consistent with the current study.

Among the respondents, 39 (59.1%) were unemployed and most of them were homemakers. 9 (28.8%) were service-holders and the remaining 8 (12.1%) were self-employed. The findings were similar to many other studies^{5,9,11,15} where majority of the caregivers, up to 80% were unemployed or home-makers.

Only 6 (9.1%) of the respondents admitted to have respite care provision, while the remaining 60 (90.9%) respondents did not have any respite care in the current study. The burden related to financial costs is further aggravated by insufficient public resources at the community level, such as lack of schools for the intellectually disabled and proper health facilities to meet their health needs.¹¹

The level of burden was measured in this study using the Zarit Burden Interview (ZBI) scale among the 66 caregivers of the intellectually disabled children. It was found in the current study that 41 (62.1%) of the respondents experienced severe burden and 25 (37.9%) experienced moderate to severe burden. A comparison study was carried out by Singh et al.⁶ where family burden of intellectually disabled children was compared with that of normal children. The burden was much higher among the study group similar to this study. Another study showed that 20.0% of the caregivers experienced no burden, 32.2% of them had mild burden, while 41.7% of

them had moderate burden and 6.1 % of the caregivers had severe burden.⁹ These findings were quite different from the current study. Darsana et al.¹⁰ found in his study that 70% of the caregivers experienced moderate burden and 28% severe burden which was similar to the findings in this study.

Burden is experienced on various aspects such as poor financial support, lack of accessibility, poor usage of appliances, lack of knowledge and understanding about intellectual disability, lack of support from family, poor skill in disability management, physical health deterioration of caregivers, etc., all play a major role in causing burden.⁹ Studies also show that level of burden increase when there is more than one disabled child in the family¹⁶ and also presence of physical disabilities, other co-morbidities along with intellectual disability further increase the burden.¹⁷ A study by Manuel et al. found that 30% of the mothers suffered from depression.¹⁸ This association was reported by many studies^{19,20} which can be attributed to the degree of child dependency on the mother in daily activities of life, such as toileting, bathing, feeding, clothing and mobility, which increase the burden of caring.

Caring for those who are intellectually disabled is often itself stressful as care-giving affects several aspects of caregiver's life negatively including poor physical and emotional state.^{21,22} The negative consequences of burden on caregivers harm their care-giving effectiveness, whereas experiencing subjective gains and satisfaction may enhance their care-giving ability. In a study by Taanila et al,²³ found that parents who received information and advice on caring for their disabled children, reported positive feelings towards caring for them. Education about the child's condition, encouragement is therefore a way to go approach for reducing burden. Community based approaches will help in reaching people who are not even aware of hospital settings for the intellectually disabled children. This will also help to reduce stigma among the people in the community and also reduce the social burden caregivers suffer from because for most of the caregivers, their social and family life both have been disturbed by the so-called illness of their child.¹⁰ Widespread implementation of effective early intervention and child development programs²⁴ and parenting training programs²⁵ will help to break the cycle and shape health and well-being of the children as well as their caregivers.²⁶ Welfare programs should not only be directed towards handicapped person, but also towards the family who also suffers to a great extent.¹⁴ Only then there will be change of viewpoint about care of such children.

Conclusions

All caregivers experience burden taking care of intellectually disabled children. Therefore, education about the child's condition, encouragement, family support, counselling services, regular screening of mothers should also be included in the protocol for management of ID. Community based approaches will help in reaching people who are not even aware of hospital settings for the intellectually disabled children.

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Prevalence and risk factors for suicidal ideation in adults with obsessive-compulsive disorder

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Background: Suicide is highly prevalent in patients with obsessive-compulsive disorder (OCD) and an estimated 6 to 51.7% patients attempt suicide. Early determination of risk factors can provide an opportunity for prevention and intervention.

Objectives: To estimate the prevalence of suicidal ideation in OCD patients and assess association between sociodemographic factors and presence of suicidal ideation.

Methods: A cross-sectional study was conducted in OCD clinic, outpatient and inpatient settings at the Department of Psychiatry in Bangabandhu Sheikh Mujib Medical University (BSMMU) in between 2019 to 2021. By convenient sampling technique, 60 OCD patients were enrolled in the study. They were interviewed using a semi-structured sociodemographic questionnaire along with Bangla version of the Modified Scale for Suicidal Ideation (MSSI).

Results: Out of the total 60 patients, 18 (30%) reported to have suicidal ideation in the last two days before interview. Suicidal ideation was more common among females ($p=0.018$). Across age groups, educational statuses, occupational statuses, family types, marital statuses, residences, family history of mental illness and substance use pattern, presence or absence of suicidal ideations did not vary.

Conclusions: One-third of OCD patients reported suicidal ideations. Female gender appeared as a risk factor.

Declaration of interest: None

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Keywords: Obsessive-compulsive disorder; OCD; suicidal ideation.

Introduction

Obsessive-Compulsive Disorder (OCD), characterized by presence of obsessions and/or compulsions is a common chronic debilitating psychiatric disorder that affects 0.7% adults in Bangladesh.¹ Suicide which is a major public health problem and one of the top ten causes of death and burden of disease worldwide, across all age groups has been found to be intricately related with OCD.² Two systematic reviews indicated rates of suicidal attempts in OCD ranging from 1% to 51.7%.^{3,4} Research suggests

patients with OCD are at increased risk for suicide attempt compared to the general population and they had 3 to 10 times higher risk of dying by suicide compared to the general population, both in its uncomplicated and comorbid forms.^{5,6}

A wide range of risk factors have been identified for suicidal behaviors that include male sex, young and old age, social isolation, unemployment, unmarried, divorced,

presence of mental illnesses like depression, personality disorder, schizophrenia, substance use, chronic medical conditions, family distress, recent life events, previous suicidal attempt, etc., of which some of the risk factors of suicide are also prevalent in OCD patients such as depression, schizophrenia, family distress.⁷ Also, in South Asian countries, patterns of suicide appear to be different from Western countries.⁸ This study was attempted to fill up the evidence-based knowledge gap in this area. We felt that the findings would help to understand the Bangladeshi cultural perspective in suicidal behavior among OCD patients and improve the quality of life of patients.

Methods

A cross-sectional study was conducted in OCD clinic, outpatient and inpatient settings at the Department of Psychiatry in Bangabandhu Sheikh Mujib Medical University (BSMMU), Bangladesh in between 2019 and 2021. Beforehand, ethical clearance was taken from the respected authority before and informed written consent was taken from each participant. Individuals diagnosed with OCD and have age 18 or more were enrolled by convenient sampling. Exclusion criteria was patients who have severe organic or mental illness. A semi-structured questionnaire was used to collect sociodemographic data. Bangla version of the Modified Scale for Suicidal Ideation (MSSI)^{9,10} was used to obtain information about the nature and intensity of suicidal thoughts in OCD patients. Statistical analysis of the results was done by using computer based statistical software, SPSS-IBM version 23. P value of less than 0.05 was considered as statistically significant.

Results

Mean±SD age of the patients was 26.5±6.7 years with a range between 18-48. Majority of the patients (60%) were in 18-27 years age group, males (56.7%), came from extended families (83.3%), unmarried (56.7%), Muslims (98.3%) and resided in urban areas (70%). About 16.7% of them were abusing tobacco. Figure 1 depicts the distribution of severity of suicidal ideation in OCD patients. Out of the total 60 OCD patients, 18 (30%) reported presence of suicidal ideation.

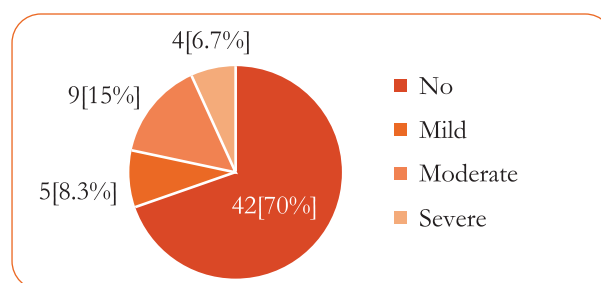


Figure 1: Frequency and percentage of severity of suicidal ideation in OCD patients (N=60)

While analyzing differences in suicidal ideation across various sociodemographic variables, we found suicidal ideation was significantly more common in females ($p=0.018$). However, across age group, educational status, occupational status, family types, marital statuses, residences, family history of mental illness and substance use, pattern of presence or absence of suicidal ideations did not vary (Table 1).

Table 1: Differences in suicidal ideations across various sociodemographic factors in OCD patients (N=60)

Variable	Suicidal ideation		P value
	Present n (%)	Absent n (%)	
Age (year)			
18-27	11 (61.1)	25 (59.5)	0.833
28-37	5 (27.8)	14 (33.3)	
38-48	2 (11.1)	3 (7.1)	
Gender			
Male	6 (33.3)	28 (66.7)	0.018
Female	12 (66.7)	14 (33.3)	
Educational status			
Primary	5 (27.8)	4 (9.5)	0.287
Secondary	4 (22.2)	9 (21.4)	
Higher secondary	4 (22.2)	10 (23.8)	
Graduation and above	5 (27.8)	19 (45.2)	
Occupation			
Unemployed	2 (11.1)	5 (11.9)	0.338
Student	8 (44.4)	12 (28.6)	
Housewife	4 (22.2)	6 (14.3)	
Business	2 (11.1)	2 (4.8)	
Service	2 (11.1)	16 (38.1)	
Others	-	1 (2.4)	
Family type			
Nuclear	4 (22.2)	6 (14.3)	0.343
Extended	14 (77.8)	36 (85.7)	

Variable	Suicidal ideation		P value
	Present n (%)	Absent n (%)	
Marital status			
Married	10 (55.6)	16 (38.1)	0.167
Unmarried	8 (44.4)	26 (61.9)	
Residence			
Rural	5 (27.8)	13 (31)	0.531
Urban	13 (72.2)	29 (69)	
Family history of mental illness			
Yes	4 (22.2)	13 (31)	0.360
No	14 (77.8)	29 (69)	
Substance use			
Yes	1 (5.6)	9 (21.4)	0.126
No	17 (94.4)	33 (78.6)	

Discussion

Suicide is highly prevalent and an important cause of death in patients with obsessive-compulsive disorder. High levels of suffering, disability and impairment are associated with this disorder. But, suicidal behaviour in patients with OCD have received less attention.

So, the aim of the study was to determine prevalence of suicidal ideations in OCD patients and explore whether sociodemographic variables were associated with elevated risk of suicidal ideation. This section compares the findings with other published works on similar subjects while reflecting situation in real practice.

Angelakis et al. reported that suicidal attempts in OCD patients range from 1% to 46.3% while Albert et al. described the figure as between 6% and 51.7%.^{3,4} Balci and Sevincok observed 44 patients and reported that 26% had at least one lifetime suicidal attempt and 20-46% had suicidal ideations.¹¹ In this study about one-third (30%) of the patients reported to have suicidal ideation of which mild suicidal ideation was present in 8.3% patients, moderate in 15% and severe in 6.7%. In this regard, the prevalence found in this study is similar to previous study findings.

Moreover, patients with OCD have 3 to 10 times higher risk of dying by suicide compared to the general population.^{3,4} So, findings of this study about suicidal ideation are in line with previous reports on suicidal tendency in OCD.

In this study, enrolled patients' mean age was 26.5. Fenske

and Petersen (2015) reported that, 19.5 is the mean age of onset for OCD. Such difference may be due to small study population, delay in noticing symptoms or delay in treatment seeking.

Globally, death by suicide occurred about 1.8 times more often among males than females and in China and Bangladesh, male to female ratio found was 0.8.¹² In the western world, males die by suicide three to four times more often than do females; however, suicidal attempts are between two and four times more frequent among females.¹³ We can infer from this attempted suicide ratio, why in our sample females showed more suicidal ideation. In general population, high suicide risk is associated with the following occupations: farmers, doctors, nurses, dentists, veterinarians, pharmacists, the police, the military, sailors and artists.¹⁴ Main occupations found in this study were business, service, housewife, student, unemployed etc. From this pattern, inferences can be drawn that this study could not find the influence of occupation with suicidal ideation. In Asian countries, married females and divorced males may be more like to attempt suicide.¹⁵

However, in this sample of OCD patients no such pattern was observed. Such difference may be due to relatively small study population or convenient sampling technique. Reviews and epidemiological data also indicate that there exists wide urban-rural disparity in suicide, with suicidal rates often greater in rural areas.¹⁶ Family history of mood disorders, psychosis and suicide may confer higher suicidal risk among family members.¹⁷ This sample of OCD patients didn't show such patterns; reason could be that it was an urban dominated sample, so failed to generate enough statistical power to create such association. Additionally, when family history of mental illnesses was present, they were mostly anxiety disorders and OCD rather than mood disorders and psychosis. One patient reported family history of suicide in this study.

Finally, substance use disorders are among the most frequent psychiatric disorders found in suicides and between 19-63% of all suicides suffered from substance use disorders, mostly from alcohol, opioid, cocaine, inhalant use.^{18,19} In this study, 16.7% of the patients reported substance abuse, all were tobacco abusers, hence association might not be established.

Limitations include cross-sectional study design, which limits the strength of causal relationship. Also, sample was enrolled from a single center, so generalizability might be an issue.

Conclusions

Findings revealed one-third of the OCD patients experienced suicidal ideations in the past two days before interview. Female gender appeared to be associated with elevated risk of suicidal ideation.

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Anxiety in patients with chronic kidney disease: sociodemographic, clinical and biochemical associations

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Background: Chronic kidney disease (CKD) is an important contributor to global disease burden and presence of anxiety in CKD is associated with poor quality of life and increased mortality. The relationship of anxiety symptoms with kidney function and sociodemographic factors remains poorly investigated.

Objectives: To assess the relationship between anxiety with socio-demographic factors as well as some clinical biomarkers in patients with CKD.

Methods: A cross-sectional study was conducted in nephrology department of a medical college hospital in 2021. By convenient sampling technique, 103 CKD patients of stages 3-5D were enrolled in the study. Sociodemographic and clinical data including CRP, hemoglobin, serum albumin, serum iPTH, blood urea was recorded from patients' clinical notes and interview. CKD staging was done by KDIGO 2012 criteria. Severity of anxiety symptoms was assessed by the Generalized Anxiety Disorder Scale-7 (GAD-7).

Results: Among the patients, 53 (51.5%) were in CKD stage of 3-5 and 50 (48.5%) were receiving hemodialysis. A significant number of patients (28.1%) had shown moderate to severe anxiety. CKD patients' age showed negative correlation with anxiety score ($r=-0.400$, $p=0.000$). No significant correlation was found between GAD-7 score and urea reduction ratio, serum creatinine level, eGFR, hsCRP, blood hemoglobin and serum parathyroid hormone level.

Conclusions: Anxiety symptoms are highly prevalent in CKD patients. However no significant association with sociodemographic factors or biochemical parameters were observed.

Declaration of interest: None

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Keywords: Chronic kidney disease; anxiety; hemodialysis, GAD-7.

Introduction

Chronic kidney disease (CKD) is characterized by the presence of kidney damage or an estimated glomerular filtration rate (eGFR) of less than 60 ml/min/1.73m², persisting for three or more months.¹ The global burden of CKD is increasing and assumed to become the 5th most common cause of years of life lost globally by 2040.² While one in five adults in Bangladesh suffer from mental disorders, this number increases in many times when

associated with chronic diseases.^{3,4} Psychiatric problems like depression, anxiety, fatigue, suicidal tendency, impaired cognitive ability and decreased quality of life are widely reported in CKD, however, precise prevalence of anxiety symptoms are unclear. The prevalence reported range between 12% and 52% across different studies.⁵ Pathological anxiety can present with affective, cognitive, physiological or behavioral symptoms; the condition is

underdiagnosed in CKD but associated with high morbidity.⁶ Anxiety conditions can lead to substance abuse, major depression and adverse cardiac events.⁶ Also, it impairs one's ability to develop social relationship and worsen quality of life.

Some of the anxiety disorders are found to be associated with elevated level of circulating inflammatory biomarkers, such as high sensitivity C-reactive protein (hsCRP) which is also elevated in CKD.⁷ Other theories pointed to the vascular and hemodynamic similarities between renal and brain tissues for elevated risk of neuropsychiatric disorders in CKD.⁸ Brain damage related with inflammation, oxidative stress, involvement of renin-angiotensin system has also been hypothesized for emergence of anxiety symptoms in CKD.⁹ Considering the worldwide growing prevalence of CKD and increasing importance of mental health in chronic diseases, improving our knowledge about psychiatric disturbances and its predictors in CKD patients is important.

Selective serotonin reuptake inhibitors (SSRIs), commonly prescribed to manage anxiety have active metabolites that are renally excreted, leading to accumulation of potentially toxic metabolites in patients with decreased glomerular filtration rates. Therefore, identifying subjects with anxiety who may benefit from preventive measures before a complication begins to occur is also necessary.

Methods

A cross-sectional study was conducted at US-Bangla Medical College Hospital, Narayanganj, Bangladesh in 2021. Ethical clearance was taken from the respected authority before and informed written consent was taken from each participant. CKD stage 3 to 5D patients were enrolled from the outpatient department and hemodialysis unit of the hospital by convenient sampling technique. Inclusion criteria for the participants were age of 30 and above, and for stage 5D patients they had to receive hemodialysis treatment for at least 3 months. Exclusion criteria were previous diagnosis of psychiatric disorder (including depressive disorder), advanced dementia, active and severe illness at time of recruitment. Data included sex, age, marital status, education level, economic status, comorbidities, duration of dialysis, etc., were retrieved from medical records. From clinical notes information about biochemical variables such as hemoglobin (Hb), CRP, serum creatinine, serum albumin, parathyroid hormone (PTH) and blood urea were collected. GFR was calculated using Modification of Diet in Renal Disease (MDRD) formula. For descriptive purposes, patients were classified into CKD stages, according to the National

Kidney Foundation's Kidney Disease Outcomes Quality Initiative guidelines.

Bangla version of the Generalized Anxiety Disorder Scale-7 (GAD-7)^{10,11} was used in the study to assess the frequency and severity of anxiety symptoms over the previous 2 weeks. Each question rates symptom severity from 0 to 3 with total scores ranging from 0 to 21. Scores between 0-4, 5-9, 10-14 and 15-21 points correspond to minimal, mild, moderate and severe anxiety, respectively. This is calculated by assigning scores of 0, 1, 2, and 3 to the response categories of "not at all," "several days," "more than half the days," and "nearly every day", respectively, to the seven questions of GAD-7. Statistical analysis of the results was done by using computer based statistical software, SPSS-IBM version 23. P value of less than 0.05 was considered as statistically significant.

Results

Sociodemographic characteristics and selected biochemical parameters are shown in Table 1. A total of 103 CKD patients were enrolled for this study and among them 53 (51.5%) were in CKD stage of 3-5 and 50 (48.5%) were receiving hemodialysis. Hemodialysis group patients were older, had more incidences of comorbid diabetes mellitus, higher levels of PTH and lower levels of serum albumin and hemoglobin than CKD stage 3-5 patients.

Table 1: Sociodemographic and clinical characteristics of the CKD patients (N=103)

Characteristic	CKD Stage 3-5 (n=53)	CKD Dialysis (n=50)
Age (mean±SD)	55.2±12.7	59.2±6.8
Gender		
Male	31 (30)	24 (23.3)
Female	22 (21)	26 (25.2)
Education		
Below SSC	25 (24.2)	28 (27.1)
SSC	24 (23.3)	16 (15.5)
HSC and above	4 (3.8)	6 (5.8)
Residence		
Semi-urban	26 (25.2)	36 (34.9)
Rural	27 (26.2)	14 (13.5)
Marital status		
Married	43 (41.7)	36 (34.9)
Widow/widower	10 (9.7)	14 (13.5)
Monthly expenditure (1000 BDT)		
5-10	19 (18.4)	10 (9.7)
11-30	22 (21)	22 (21)
31-50	12 (11.6)	18 (17.4)

Characteristic	CKD Stage 3-5 (n=53)	CKD Dialysis (n=50)
Profession		
Service	6 (5.8)	14 (13.5)
Business	6 (5.8)	2 (1.9)
Cultivator	8 (7.7)	20 (19.4)
Dependent	21 (20.3)	14 (13.5)
Others	12 (11.6)	-
Comorbidity		
None	8 (7.7)	38 (36.8)
Diabetes	25 (24.2)	50 (48.5)
Hypertension	45 (43.6)	-
Investigation		
Serum creatinine	3.14±1.77	-
URR	-	65±7.0
eGFR	24.07±9.67	-
hsCRP	28.8±46.5	16.4±10.1
Serum albumin	3.48±1.05	3.08±0.79
Hemoglobin	9.99±2.17	8.86±1.44
iPTH	185.3±152.9	203.6±108.4

*URR, urea reduction ratio; eGFR, estimated glomerular filtration rate; hsCRP, high-sensitive C-reactive protein; iPTH, intact parathyroid hormone

The mean score in anxiety severity falls in the mild range. A significant number of patients (28.1%) had moderately to severe anxiety. Table 2 shows the severity of depressive symptoms in CKD patients. T tests and ANOVA were used to see the differences in anxiety severity between various sociodemographic variables (Table 2).

Table 2: Severity of anxiety symptoms in CKD stages (N=103)

Anxiety state	CKD stage 3-5 (n=53)	CKD dialysis (n=50)	Total (n=103)
GAD-7 score (mean±SD)			
	8.1±4.3	6.6±3.9	7.4±4.2
Anxiety severity			
Minimal	14 (26.4)	12 (24)	26 (25.2)
Mild	18 (34)	30 (60)	48 (46.6)
Moderate	17 (32.1)	6 (12)	23 (22.3)
Severe	4 (7.5)	2 (4)	6 (5.8)

GAD-7, Generalized Anxiety Disorder Scale-7, cell values are expressed as frequency (percentage)

No significant difference was observed between CKD stage 3-5 and hemodialysis patients. Patients with monthly expenditure between 11-30,000 BDT reported higher anxiety than others. No significant difference was observed between across different gender, residence, education, marital status or profession (Table 3).

Table 3: Differences in anxiety severity between different characteristics of CKD patients (N=103)

Variable	Frequency (n)	GAD-7 Score*	t/F	P Value
CKD group				
CKD stage 3-5	53	8.1±4.3	1.72	0.088
CKD dialysis	50	6.6±3.9		
Gender				
Male	55	6.7±3.1	-1.82	0.071
Female	48	8.2±5.1		
Education				
Below SSC	53	7.3±3.9	0.17	0.912
SSC	40	7.5±4.9		
HSC and above	10	6.8±1.5		
Residence				
Urban	62	7.1±4.2	-0.63	0.527
Rural	41	7.7±4.1		
Marital status				
Married	79	7.7±4.2	1.43	0.154
Widow/widower	24	6.3±4.1		
Monthly expenditure (thousand BDT)				
5-10	29	6.9±3.6	4.86	0.010
11-30	44	8.7±4.8		
31-50	30	5.8±3.1		
Profession				
Service	6	10.6±1.3	2.12	0.083
Business	20	6.8±2.5		
Cultivator	10	6±3.5		
Dependent	41	6.8±4.1		
Others	26	8.6±5.3		

*Mean±SD

There was moderately strong negative correlation between age and anxiety severity. No significant correlation was found between GAD-7 score and urea reduction ratio, serum creatinine level, eGFR, hsCRP, blood hemoglobin and serum parathyroid hormone level (Table 4).

Table 4: Correlation of GAD-7 score with age and biochemical profile of the CKD patients (N=103)

Variable	Pearson's correlation coefficient (r)	P Value
Age (year)	-0.400	0.000
URR (%)	0.086	0.551
Serum creatinine (mg/dl)	0.088	0.529
eGFR (ml/min/1.73 m ²)	-0.016	0.941
hsCRP (mg/L)	0.147	0.155
Serum albumin (g/L)	0.082	0.433
Hemoglobin (g/dl)	-0.007	0.947
iPTH (pg/ml)	0.051	0.610

URR, urea reduction ratio; eGFR, estimated glomerular filtration rate; hsCRP, high-sensitive C-reactive protein; iPTH, intact parathyroid hormone

Discussion

Mosleh et al. conducted a study in Saudi Arabia where 19.7% CKD patients showed anxiety symptoms¹² while Kumar et al. from India cited the figure as 28%.¹³ Through the administration of GAD-7 questionnaire, we found that most of the patients fall in the mild range of anxiety severity. A significant number of patients had moderate to severe anxiety. Similar findings were observed in some of the previous studies.¹⁴

Anxiety appears to be caused by an interaction between biopsychosocial factors where genetic vulnerability interacts with stressful and traumatic events to produce clinically significant symptoms.¹ Apart from age and monthly expenditure, we did not observe any significant correlates of anxiety symptoms in CKD patients. In general, the prevalence rate of anxiety disorders is reported to be lower among older adults compared to younger adults which was also found in our observation.¹⁵ People with less education, lower socioeconomic status tend to show more and persisting anxiety symptoms.¹⁶ Female gender and widowhood reportedly increase the risk of anxiety disorders.¹⁷ However, such associations may not be

found in patients with chronic disease.¹⁸ We observed no significant correlation between GAD-7 score and urea reduction ratio, serum creatinine level, eGFR, hsCRP, blood hemoglobin and serum parathyroid hormone level. Similarly, in patients on hemodialysis, hemoglobin, iron, TIBC, ferritin and albumin levels were not significantly correlated with anxiety.¹⁹

Personality traits are one of the factors that might explain anxiety symptoms in such patients. Traits like high neuroticism, low extraversion predict anxiety.²⁰ Cognitive styles such as tendency to ruminate, worry, intolerance of uncertainty, negative reappraisal of situations and looming cognitive style may also contribute to development of anxiety symptoms in CKD patients.^{21,22} One study reported acceptance, religion, planning, positive reframing, instrumental support, emotional support, self-distraction and venting were the most frequently used coping strategies in persons with chronic disease.²³ Lack of such strategies may thereof predict emergence of anxiety.

We acknowledge several limitations in our study. It was a single center study with a limited sample size. Also, as a cross-sectional study, we could only estimate the association and not the causal relevance of an exposure.

Conclusions

A significant number of patients with CKD showed moderate to severe anxiety symptoms. The symptoms showed no significant association with several routinely measured biochemical parameters; hence, personality traits, cognitive style and coping strategies might play important role in development of anxiety in CKD patients.

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Psychiatric morbidity among prisoners

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Background: Prisoners have high levels of mental illness and drug or alcohol dependence. Prison environment is highly stressful and often predisposes the prisoners to develop mental disorders which go undetected and untreated.

Objectives: To find out the prevalence of psychiatric morbidity among prisoners as well as to bring out some socioeconomic and demographic parameters in relation to psychiatric morbidity.

Methods: It was a cross-sectional study conducted in Dhaka central jail, Keraniganj. The duration of the study was six months starting from 01 May 2018 to 31 October 2018. All Bangladeshi male prisoners who were 18 years above and willing to participate were included in the study. Informed written consents from the respondents were taken. Those who refused to give consent and had severe cognitive impairment were excluded. Ethical issues were maintained all throughout the study. 438 prisoners were randomly selected out of which 276 cases were identified as having psychiatric morbidity by screening of common psychiatric disorders using General Health Questionnaire-12 item (GHQ-12). Socio-demographic data were collected by face-to-face interview using semi structured questionnaire. Psychiatric diagnoses were assigned by Consultant Psychiatrist according to Diagnostic and Statistical manual of Mental Disorders version 5 (DSM-5). Statistical analyses were carried out by using the Statistical Package for Social Sciences version 23.0 for Windows (SPSS Inc., Chicago, Illinois, USA). The mean values were calculated for continuous variables. The quantitative observations were indicated by frequencies and percentages.

Results: The age range of the prisoners were 19-65 years having a mean age of 32.5 ± 9.3 . Two third (63.0%) prisoners had psychiatric disorders, came from rural background (60.5%). Most of the prisoners were from low economic group (50.4%) and were charged with drug related offences (60.14%).

Conclusions: Psychiatric morbidity among prisoners is very common. It is evident that high rate of mental health problems exists in prisons like substance related disorder, anxiety disorder, adjustment disorder, antisocial personality disorder, depressive disorder and schizophrenia. To improve the overall health care service for the prisoners, psychiatric evaluation and treatment remain a fundamental element. Proper diagnosis and timely intervention of the mental health problems including substance related disorders may help in the reduction of occurrence or repetition of some offences.

Declaration of interest: None

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Keywords: Prisoners; morbidity; General Health Questionnaire-12 item (GHQ-12); Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5).

Introduction

In general, persons who are suspected to have committed an offence are arrested and brought to jail regardless of their mental condition. It has been recognized that the inmates in prisons have exceptional mental health needs. Studies show that the prisoners have high levels of mental illness and drug or alcohol dependence.^{1,2,3} It is well established that people with psychiatric problems are over-represented in prison populations. The prevalence of psychiatric disorder in prison population ranged from 37-70% found in empirical studies.⁴ It is a fact that the prison environment is highly stressful and often predisposes the prisoners to develop mental disorders. Many a time, the psychiatric problems of prisoners go undetected and untreated. The studies reported a high prevalence of psychiatric illnesses among men and women prisoners.^{2,5}

Conditions in jails often test or demand effective coping skills and this may lead to adjustment disorders. High rates of suicide was also reported among the prisoners.^{6,7,8} Individuals with antisocial personality problems have an increased chance of conflict with the criminal justice system. Substance abuse, on several occasions lead to increased risk of violent behavior. Considerable evidences indicate a high rate of substance related disorders among the prisoners.^{3,5,9} Men account for majority among prison population. Women prisoners, though small in number, also have an increased rate of psychiatric illness.^{3,8} Most of the jails show a high occupancy rate and 0.9% of the total inmates were reported to be mentally ill.¹⁰ A study observed 28.8% psychiatric morbidity among convict prisoners. There is a need for further exploration of the mental health problems in prisoners.¹¹

This study tried to ascertain the prevalence of psychiatric morbidity among prisoners in Bangladesh and to bring out some socioeconomic and demographic parameters in relation to psychiatric morbidity. The relationship between psychiatric morbidity among prisoners brought some awareness of need of treatment that definitely helped the patient in early social recovery and adjustment ad to find out an actual situation of psychiatric morbidity among prisoners in our country. It also encouraged further research in this aspect in Bangladesh.

Methods

It was a cross-sectional study conducted in Dhaka central jail, Keraniganj. The duration of study was six months starting from 01 May 2018 to 31 October 2018. All Bangladeshi male prisoners who were 18 years and above and were willing to participate were included in the study.

Those who refused to give consent and had severe cognitive impairment were excluded. Informed written consents from the respondents were taken. Ethical issues were maintained all throughout the study. 438 prisoners were randomly selected out of which 276 cases were identified as having psychiatric morbidity as well as screening of common psychiatric disorders by using General Health Questionnaire-12 item (GHQ-12). Socio-demographic data were collected by face-to-face interview using semi structured questionnaire. Psychiatric diagnoses were assigned by Consultant Psychiatrist according to Diagnostic and Statistical manual of Mental Disorders version 5 (DSM-5). Statistical analyses were carried out by using the Statistical Package for Social Sciences version 23.0 for Windows (SPSS Inc., Chicago, Illinois, USA). The mean values were calculated for continuous variables. The quantitative observations were indicated by frequencies and percentages.

Results

438 prisoners were randomly selected for the study. Among them, almost two third, i.e., 276 (63.0%) cases were identified as having psychiatric morbidity. (Table 1)

Table 1: Prevalence of psychiatric morbidity among prisoners (N=438)

Psychiatric morbidity	Number of patients	Percentage
Total screening prisoners	438	100.0
Psychiatric morbidity	276	63.0

The age range of the prisoners was from 19-65 years having a mean age of 32.5±9.3.

Table 2 shows the sociodemographic status of the normal and diseased individuals.

Table 2: Socio demographic distribution of the prisoners with psychiatric morbidity (n=276)

Socio-demographic factors	Number (n)	Percentage (%)
Age group in years		
≤30	113	40.9
31-40	109	39.5
41-50	38	13.8
51-60	10	3.6
>60	06	2.2
Religion		
Islam	243	88.0
Hinduism	29	10.5
Christianity	03	1.1
Buddhism	01	0.4
Education level		
Illiterate	75	27.17
Primary	131	47.46
SSC	41	14.85
HSC	19	6.88
Graduate	7	2.54
Post-graduate	3	1.09
Occupation		
Unemployed	34	12.3
Service	109	39.5
Business	39	14.1
Day labourer	43	15.6
Student	25	9.1
Marital status		
Married	187	67.8
Unmarried	83	30.1
Divorced	6	1.1
Social background		
Urban	109	39.5
Rural	167	60.5
Economic background (BDT/month)		
Lower class (<10,000)	139	50.4
Middle class (10,000-30,001)	96	34.8
Higher class (>30,001)	41	14.8

Data was collected and analyzed to see psychiatric morbidity among the prisoners. (Table 3)

Table 3: Relevant psychiatric history of the prisoners with psychiatric morbidity (n=276)

Psychiatric history	Number (n)	Percentage (%)
Psychiatric morbidity		
Substance related disorder	166	60.1
Anxiety disorder	29	10.5
Adjustment disorder	20	7.3
Antisocial personality disorder	21	7.6
Depressive disorder	30	10.9
Schizophrenia	7	2.5
Others	3	1.1
Family history of psychiatric illness		
Yes	56	20.3
No	192	69.6
Not known	28	10.1
Past history of psychiatric illness		
Yes	60	21.7
No	216	78.3
Past history of psychiatric treatment		
Yes	22	8.0
No	254	92.0
Multiple marriage in parents		
Yes	82	29.7
No	194	70.3

The forensic history of the prisoners who had psychiatric morbidity are given in Table 4.

Table 4: Forensic history of the prisoners with psychiatric morbidity (n=276)

Forensic history	Number (n)	Percentage (%)
Type of charge		
Drug related offences	166	60.1
Violence	35	12.7
Fraud	18	6.5
Eve teasing	16	5.8
Robbery	11	4.0
Murder	7	2.5
Arms & bombs	6	2.2
Snatching	5	1.8
Kidnap	5	1.8
Theft	4	1.5
Suspicious movement	3	1.1
Type of prisoner		
Under trial	149	54
Convicted	127	46
Duration of stay in prison (months)		
<1	184	66.7
1-6	69	25.0
7-24	13	4.7
25-60	07	2.5
61-120	03	1.1
Past history of imprisonment		
Yes	20	7.2
No	256	92.8
Past history of imprisonment in family members		
Yes	20	7.2
No	256	92.8
History of substance abuse		
Yes	166	60.1
No	110	39.9

Discussion

In this study the total sample size was 438. Among them 276 individuals were identified as cases having psychiatric morbidity using the General Health Questionnaire-12 (GHQ-12). Further diagnosis of the cases was done by consultant psychiatrist using DSM-5. The prevalence rate of psychiatric morbidity was found 63%. It was also observed that majority (40.9%) of the patients belonged to age around 30 years. Mean age was found 32.5 ± 9.3 years with range from 19 to 65 years. All (100%) prisoners were male, 243 (88%) were Muslim, 131 (47.5%) completed primary education, 109 (39.5%) were service holders, 187 (67.8%) were married, 167 (60.5%) come from rural area and 139 (50.4%) come from lower income family. Similar observation was reported that the mean age was 34.49 ± 11.38 years with range from 18 to 78 years. Majority were males (87.0%), married (58.4%), belonged to a nuclear family (64.3%) and came from a rural background (68.2%). A significant majority (63.9%) reported an income of more than Rs. 5000/month prior to incarceration.¹² The rate of illiteracy and unemployment was less compared to the study probably due to the high literacy rate in the state and other social reasons. Another study¹³ also supported our observation with the prisoner's age ranging from 19-66 years with mean age 33.7 years while at the time of crime it was 30.4 years. Majority of the prisoners were males (97.5%), more than half of the prisoners (57.6%) were from rural areas. Average education in studied years was found 6.6 years with 20 (6.9%) illiterate and only 4 (3.4%) prisoners having master's degree. Half of the prisoners (50.8%) were unskilled workers and 16.9% were either in service or had their own business. Nearly two-third (65.3%) of the prisoners were married while 5.1% were widowed or divorced. Another study found that participants were aged from 17-76 years, with a mean age of 32.7 years.¹⁴ About half (49.0%) of the subjects were within the age group 25 - 34 years.¹⁵ More than half of the subjects were single (53%), with 392 (64.5%) practicing Christianity, 277 (45.5%) were unemployed.¹⁶ The studied sample consisted of 80 adult prisoners aged from 20 to 45 years with a mean of 34.82 ± 6.18 .¹⁷

In this series it was observed that almost two-third (63.0%) prisoners were suffering from psychiatric morbidity. Another study¹³ made a psychiatric diagnosis in 68.6% of the total population, where more than half of the subjects (57%) had a psychiatric morbidity. Studies from Australia, Iran and other parts of the world also found psychiatric morbidity in 80%, 57%, 55.4%, 51.4% and 43% of the studied subjects respectively using standardized

instruments.¹⁸⁻²³ Approximately similar findings were reported by many other studies.^{14,24} A study in India observed 28.8% prevalence of psychiatric morbidity which was lower than what was seen in this study.^{25,26} A study which showed an increased suicide risk in prisoners with mood disorders (32%) and psychosis (45%) remains in agreement with this study.²⁷ Another study found prevalence of psychiatric disorders in 33% of the population.¹³ Current mental disorders were diagnosed in 57.2% of participants with mood disorders having the highest prevalence.¹⁴ A systematic literature review showed that the prevalence of mental disorders among prisoners varies from 55-80% and rate of psychiatric morbidity was around three times higher in prisoners than normal individuals.²⁸

In this study, majority were diagnosed with substance related disorder 166 (60.14%) followed by 29 (10.51%) anxiety disorder, 20 (7.25%) adjustment disorder, 21 (7.61%) antisocial personality disorder, 30 (10.87%) depressive disorder, 7 (2.54%) schizophrenia and 3 (1.09%) with other morbidities. In comparison, a study¹² showed substance use disorder as the most common diagnosis (47.1%). Antisocial personality disorder was diagnosed in 19.2%, adjustment disorder in 13.7%, mood disorder in 4.3% and psychosis in another 6.3% of prisoners. It was also observed that psychotic disorders in prisoners were 6.7% individuals including 3.4% schizophrenia and 2.5% bipolar affective disorders. Neurotic disorders were seen in 26.3% prisoners. Depressive disorder was seen in 16.1% prisoners. Anxiety disorders were seen in 8.5% including generalized anxiety disorder and obsessive-compulsive disorder as 6% and 2.5% respectively. Somatoform disorder was seen in 1.7% prisoners.

In this study it was observed that 56 (20.3%) prisoners had family history of psychiatric illness and 23 (8.3%) has history of imprisonment in family. A study observed that total of 107 (42.0%) subjects had a previous history of imprisonment.¹² Another study reported that 47.5% were convicted and history of criminal behavior in family was found in 32.2% prisoners.¹⁵ In this current study it was observed that 60 (21.7%) prisoners had past history of psychiatric illness, 22 (8.0%) had past history of psychiatric treatment and 20 (7.2%) had past history of imprisonment. Similar observation was found in Kumar and Daria¹³ study where they showed one in 10 prisoners (9.3%) had previous history of imprisonment and history of criminal behavior in family was found in 32.2% prisoners.

In this series it was observed that 149 (54.0%) prisoners

were under trial and 127 (46%) were convicted. In another study it was observed nearly half of the prisoners (47.5%) were convicted while 52.5% were under trial.¹³ In this study it was observed that 184 (66.7%) prisoners were found to be staying in prison for less than 1 month followed by 69 (25.0%) for 1-6 months, 13 (4.7%) for 7-24 months, 7 (2.5%) for 25-60 months and 3 (1.1%) for 61-120 months. A majority (67.9%) of the subjects were found to be staying in prison for less than 1 month and this observation was support to our study.¹² Another study also found similar observation where they showed average stay of prisoners was 30 months.¹³ Duration of stay in prison before conviction in months was between 0-305 months with mean of 42.9 ± 65.6 months. However, a study conducted in United States found that 60.1% of the subjects had spent less than 24 months in prison detention.¹⁶ In the present study it was observed that 166 (60.14%) prisoners were charged with drug related offences followed by 35 (12.68%) for violence, 18 (6.52%) with cheating, 16 (5.80%) for eve teasing and 11 (3.99%) for robbery. Offences against property were the major types of crimes (34.5%) in another study.¹² A study reported a higher rate of affective disorders than this study (21% and 30%, respectively).^{14,25} In another study maximum numbers of prisoners were murderers (47.5%) while 20.3% of prisoners carried out drugs related crimes like drug trafficking.¹³ The commonest crimes in another study were armed robbery (37.7%), murder (16.4%), theft (21.1%), assault (7.1%) and manslaughter (2.3%).¹⁶ The main causes of admission as expressed by them were killing (75%) and attempted murder (25%).¹⁷

In this current study it was observed that 82 (29.7%) prisoners were found having multiple marriages in parents. It was also observed that 166 (60.14%) prisoners had history of substance abuse. A study showed history of drug abuse or dependence prior to imprisonment in 58.8% prisoners.²⁵

Conclusions

It is evident that high rate of mental health problems exists in prisons. A proper identification and diagnosis of the cases is required for treatment and rehabilitation of the patients. Psychiatric evaluation and treatment remain a fundamental element to improve overall health care service for prisoners. Almost two third prisoners had psychiatric morbidity and commonest psychiatric illnesses were substance related disorder, anxiety disorder, adjustment disorder, antisocial personality disorder, depressive disorder and schizophrenia. Many factors including the prison settings, socio-cultural differences and

methodological issues must be considered while dealing with the psychiatric problems of prisoners. So proper diagnosis and timely intervention of the mental health problems including substance related disorders may help in the reduction of occurrence or repetition of some offences. It is a primary need for Bangladesh in the field of epidemiological survey to find out the prevalence of psychiatric disorder among prison population and the relationship with psychiatric disorders, crime and prison, and thereby it will help to develop need-based prison psychiatry in Bangladesh.

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Sociodemographic characteristics of depressive patients attending medical outpatient department of Combined Military Hospital (CMH), Dhaka

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Background: Depression is the most common form of mental disorder in Bangladesh.

Objectives: To determine sociodemographic characteristics of depressive patients attending medical outpatient department of Combined Military Hospital, Dhaka Cantonment, Bangladesh.

Methods: It was a cross-sectional study conducted in the internal medicine outpatient department of CMH, Dhaka. Considering the inclusion and exclusion criteria, 444 samples were selected purposefully who were 18 years and above, irrespective of sex. The duration of study was six months starting from September 2018 to February 2019. Socio-demographic data were collected by face-to-face interview using semi structured questionnaire. Patient Health Questionnaire-9 (PHQ-9) score ≥ 5 (Five or more) was applied to screen out the positive cases. Data analysis was done by Statistical Package for Social Sciences (SPSS) version 22.

Results: Overall prevalence of depression in the study was (21.8%). Prevalence of depression was higher among young age groups of 18-40 years (75.2%). Majority of respondents were females (57.7%), came from rural background (71.1%) and achieved education level up to primary (38.1%). This study also found that majority of the participants were unemployed, i.e., housewives (43.3%), 53.6% were not married (i.e., single, widowed, separated or divorced) and were from low-income group (42.3%).

Conclusions: More than one-fifth of the participants showed depression among medical outpatients.

Declaration of interest: None

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Keywords: Depression; Combined Military Hospital (CMH); DSM-5.

Introduction

Behavioral and mental disorders accounted 12% of global burden of disease. It was estimated that 10% of the adult population was suffering from some kind of behavioral and mental disorder globally and it was 4 out of 10 leading causes of disability.¹ Depression is the most common form of mental disorder that leads Years Lived with Disability (YLD).² Etiology of depression is multifactorial which includes combination of genetic, psychological,

environmental and biological factors.³ Depression often occurs due to adverse life events, such as the loss of a significant person-object relationship or loss of health. However, it can also occur with no apparent cause. These problems can become chronic or recurrent and cause substantial impairment in an individual's ability to take care of their everyday responsibility.⁴ It was projected that by year 2020, depression will be 2nd in the ranking of YLDs

and by 2030, it is expected to become the leading cause of disability.⁵

In Bangladesh, there was limited data on the prevalence and other sociodemographic variables of depression due to scarcity of epidemiological studies. With the world’s eighth largest population with 170 million people, extensive research and studies was required to prepare the country to lessen the silent burden of depression. This study was designed with the aim of determining prevalence of depression and contribute to mental health and raise awareness among physicians.

Methods

This was a cross-sectional study and was carried out in internal medicine OPD of Combined Military Hospital (CMH), Dhaka Cantonment, in between September 2018 to February 2019. Patients aged 18 years and above attending internal medicine OPD of CMH, Dhaka were approached by purposive sampling method. The patients who were not interested in participating in the study, suffered from acute physical illness and acute confusional state, had visual or hearing impairment to such an extent that they could not participate in the study were excluded from the study.

Pre-designed structured questionnaire was prepared to determine the socio-demographic characteristics such as age, sex, residence, marital status, family type, etc. An informed written consent was taken from each participant of the study population by using consent form. PHQ-9 was used to assess whether the respondents had experienced symptoms associated with depression within 2 weeks before the interview. The PHQ-9 demonstrated acceptable reliability and validity. Sensitivity and specificity of PHQ-9 score ≥ 10 was 88% for major depression.⁶ Depression was measured using PHQ-9 with a 3-point severity scale over the last 2 weeks. Based on the instrument standard, a PHQ-9 score ≥ 5 was considered as significant for meeting the symptoms of depression. It was a very useful tool for accurate as well as rapid diagnosis of depression in clinical settings.⁶⁻⁸ Finally, DSM-5 criteria were applied to diagnose depression.

Results

During the study period, 1050 respondents visited internal medicine outpatient department. We randomly selected 550 out of the 1050 respondents. Among 550 respondents, 90 did not meet the selection criteria and 16 did not agree

to participate in the study. Finally, a total of 444 respondents met the selection criteria and agreed to participate in the study. Overall PHQ-9 positive was 112 (25.22%) among study subjects (Table 1).

Table 1: PHQ-9 finding of the respondents (N=444)

	Frequency	Percentage (%)
PHQ-9 positive (score ≥ 5)	112	25.2
PHQ-9 negative (score ≤ 5)	332	74.7
Total	444	100

Based on the instrument standard, a PHQ-9 score ≥ 5 was considered as significant for meeting the symptoms of depression. PHQ-9 positive (score ≥ 5) respondents were 112. These 112 respondents were assessed by a psychiatrist using DSM-5 criteria to diagnose depression and it was found that 97 out of 112 were PHQ-9 positive respondents. Overall prevalence of depression was 97(21.8%) among study subjects (Figure 1).

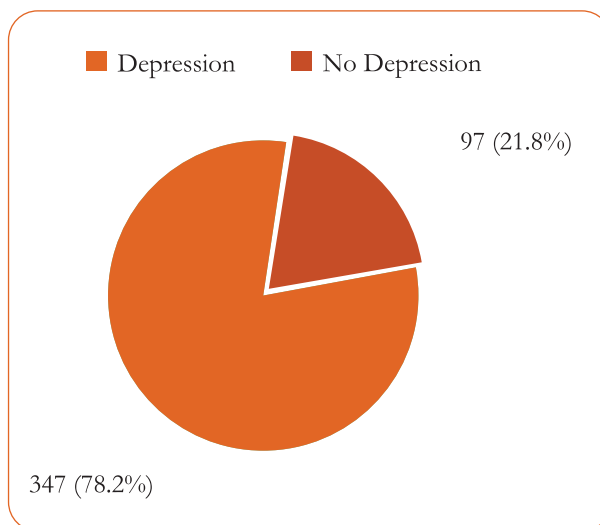


Figure 1: Prevalence of depression among study respondents

Table 2 shows the sociodemographic characteristics of the respondents.

Table 2: Sociodemographic distribution of the study respondents (N=444)

Sociodemographic factor	Frequency (n)	Percentage (%)
Sex		
Male	286	64.4
Female	158	35.5
Age group (year)		
18-30	122	27.4
31-40	173	38.9
41-50	57	12.8
51-60	92	20.7
Residence		
Urban	324	72.9
Rural	120	27
Religion		
Muslim	365	82.2
Hindu	63	14.1
Others	16	3.6
Occupation		
Service	149	33.5
Housewife	154	34.6
Agriculture worker	100	22.5
Day laborer	41	9.2
Education level		
No formal education	100	22.5
Primary	152	34.2
Secondary	95	21.4
Higher secondary	50	11.2
Graduation	47	10.5
Marital status		
Single	113	25.4
Married	283	63.7
Widowed	28	6.3
Separated	12	2.7
Divorced	8	1.8
Family type		
Nuclear	172	38.7
Joint	272	61.2
Monthly income (in Taka)		
<15,000	113	25.4
15,001-30,000	88	19.8
30,001-45,000	140	31.5
>45,001	103	23.2

Discussion

In the present study, prevalence of depression was found among 21.8% of the 444 participants. This finding was similar to the observation made in a study carried out by Kohli et al.⁹ in which 23.1% patients had depression. Several studies reported that prevalence of depression in primary care settings range from 21-40%.¹⁰⁻¹⁴ An Ethiopian study¹⁵ had showed higher prevalence rate of 24.5% and 49% in Thailand.¹⁶ Different Indian studies had reported prevalence of depression in outpatient department ranging from 4.3%-39.3%.¹⁷ A meta-analysis has reported overall prevalence of depression of 19.5% in various mainly urban primary care practices across more than ten countries.¹⁸

In the present study, depression was found to be more among females, separated/widowed, and those who were unemployed. Different studies have also shown that depression was more common among female gender.^{10,11} Similarly depression was also reported to be more prevalent in widowed or divorced in a study carried out by Poongothai et al.¹⁹

In this study, 57.7% respondents were females and 42.3% were males, similar to the study of Kohli et al.⁹ who detected that depression was more in females. Increased prevalence of depression in females can be explained by hormonal influence who were more likely to experience exposure to sexual abuse and domestic violence.

In this study it was found that among depressive respondents' highest percentage (75.2%) had age group in between 18-40 years. A study conducted in India, in the medical outpatient department (OPD) with a total population of 395, reported a prevalence of unrecognized depression of 23.8% using the Primary Care Evaluation of Mental Disorders (PRIME-MD) questionnaire and noted that depression was seen in a younger age group.²³ In an accordance study of Ponnudurai et al., it was shown that depression was more common among younger subjects.²⁰ Kohli et al.⁹ reported that 66% of the patients belonged to 18-30 years age group which was correlated to the present study.

In this study 73.2% respondents were Muslims and rest 26.8% were Hindu and others. Kohli et al.⁹ reported Hindu participants were significantly associated with depression in their study. This result was not consistent with this study as Bangladesh is a Muslim predominant country.

Education level of this study showed that 38.1% respondents were educated up to primary level, 22.7% up to higher secondary and 16.5% were illiterate. Similar results were reported by Kohli et al.⁹ It showed that

literate used to seek medical care early for depression, perhaps due to greater awareness.

In the present study majority (43.3%) respondents were unemployed 25.8% (i.e., housewife and agriculture worker). Kohli et al.⁹ noted occupation was not found to be significantly associated with depression but unemployment, such as housewife was a risk factor for depression.

In present study, female gender, illiteracy, agriculture worker, semi urban, younger age, widow, separated and divorcee were associated with higher prevalence of depression. The single, widowed, separated and divorced women had no close person to confide in. A published study¹⁵ reported that those women were 1.6 times as likely to have depression compared to men, younger (16-35 years) age was an alarming age group. Another Pakistani study reported the same as they found depression was more prevalent in patients aged less than 40 years, i.e., younger age group, females, lower literacy and low-income group.²¹

Our study found that majority (43.3%) respondents were from lower income group (<15000 Tk), 33.0% respondents had monthly income of 15000-30000 Tk. A study in Ethiopia by Tilahunet al.¹⁵ reported low income was significantly associated with depression. Another study done by Patel and Kleinman²² corresponded similar findings. This might be because an insufficient income led to a feeling of being in a stressful and unsafe situation which triggered depression. People experiencing poverty faced difficulties to fulfill basic needs and was unable to afford the treatment which interfered with their ability to participate in the productive activity. Higher levels of hopelessness towards the present rather than the future and lower level of satisfaction with life were some of the psychological impacts of low socioeconomic status.

Conclusions

Despite a number of limitations, this study provided the baseline information about depression among medical outpatients which was prevalent in the health-care service and often went undiagnosed and unmanaged.

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3. Main text should include the following sections: Introduction, Methods, Results and Discussion. A Conclusions section is not mandatory in the main text.
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.
6. In total, up to 5 tables and figures may be included in the print version of each paper. Additional tables and figures may be included as online only supplementary material.

Review Article

1. There is no word limit or maximum number of references, tables or figures.
2. The abstract and main text should be structured in the same way as original articles (above).
3. We require authors to follow some standard protocol for systematic reviews before data extraction on an accessible, searchable site.

Short Communication

1. A short communication is suitable for recording the results of complete small investigations or giving details of new models or hypotheses, innovative methods, techniques, images in clinical practice, letter to editors or short reports.
2. The word count should not exceed 1,200 words (excluding references, tables and figure legends) and may include 1 figure or table and up to 10 essential references.
3. Short reports require an unstructured summary paragraph not exceeding 100 words.

Case Report

1. We want to publish cases worthy of discussion, particularly around aspects of differential diagnosis, decision making, management, clinical guidelines and pathology.
2. For case reports we recommend a maximum of 2000 words. Images in articles should be no more than 500 words.
3. Please anonymize the patient's details as much as possible, e.g. specific ages, ethnicity, occupations.

Editorial

1. The word count should not exceed 1,500 words and may include 1 figure or table and up to 5 essential references.
2. Editorials require an unstructured summary paragraph not exceeding 50 words.
3. A brief biographical detail (up to 25 words) for each author must be submitted with the manuscript.

Other Considerations

General outline for article presentation and format

1. Use double spacing
2. Font size should be 12 in Arial or Times New Roman
3. Margins should be customized as 5 cm from above and 2.5 cm from rest of the sides.
4. Title page should contain all the desired information

5. Do not underline, italicize, place quotation marks or use all capital letters in your title.
6. References according to the journal's instructions – abide by the rules of Vancouver system.

How to write references for your reference list

Vancouver Style

Title Page

The title page should have the following information:

1. Article title.
2. Author(s) full names.
3. The name of the department(s) and institution(s) to which the work should be attributed.
4. Disclaimers, if any.
5. Contact information for corresponding author: The name, telephone number, and e-mail address of the author responsible for correspondence about the manuscript.
6. Source(s) of support in the form of grants, equipment, drugs, or all of these.
7. The number of tables and figures.

Statistics

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.

The number of decimal places to which numbers are given should reflect the accuracy of the determination and estimates of error should be given for statistics. Use of effect sizes with confidence intervals is encouraged but not mandatory. Authors are encouraged to include estimates of statistical power where appropriate. To report a difference as being statistically significant is generally insufficient, and comment should be made about the magnitude and direction of change.

Abbreviations and Symbols

1. Use only standard abbreviations; use of nonstandard abbreviations can be confusing to readers.
2. Avoid abbreviations in the title of the manuscript.
3. The spelled-out abbreviation followed by the abbreviation in parenthesis should be used on first mention unless the abbreviation is a standard unit of measurement.

Review Process

All papers published in this journal are peer reviewed. All submissions are initially assessed for suitability by the Associate Editor(s). After the initial assessment, submissions are single-blind peer-reviewed by two independent, anonymous expert reviewers and the assigned Handling Editor. The Handling Editor will recommend a decision to the Editor-in-Chief who is responsible for making the final decision.

The editor(s) will decide whether the submission is suitable to be sent out for review. This review process can take up to 1–2 months. If you have concerns about the timetable, we encourage you to discuss these with the journal's editor(s). The editor(s) will make a decision regarding your paper based on the reviewer reports. It is common for an article not to be accepted in first draft and you may be asked to revise and resubmit.

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