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# ARCHIVES *of NIMH*



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An Official Journal of National Institute of Mental Health, Dhaka

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■ Volume 2 ■ Issue 1 ■ June 2019

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- Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not adequately supported by the data.

- Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not adequately supported by the data.

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## Editorial

### Depression among chronic medical illnesses

Many chronic illnesses have a strong effect on an individual's mental and emotional status, and, in turn, undiagnosed mental disorders can affect a person's ability to cope with an illness and participate in the treatment and recovery process. Depression is the most common complication of almost all chronic or serious medical conditions. In Bangladesh, the life-time prevalence of major depressive disorder is 4.6% among adult population and 1% among the children.<sup>1,2</sup> Up to a third of physically ill patients attending hospital have depressive symptoms.<sup>3</sup> In a Bangladeshi study, the psychiatric morbidity in chronic physically ill patients was found 57%. Among them, depressive disorder was 59.6%. That means, overall, depressive disorder in chronic physical illness was 34%.<sup>4</sup>

Major depression among persons experiencing chronic medical conditions like cardiovascular diseases, diabetes, respiratory diseases, obesity, cancer etc. increases the burden of their physical illness and somatic symptoms, causing increased functional impairment along with increased medical costs. Depression in long-term illnesses impairs ability for self-care and for maintenance of treatment regimens thus causing increased mortality. Yet, effective treatments, for depression exist. Many factors point to reasons that mental illnesses are not adequately addressed as evidenced by the literatures.

We should pay more attention to management of depressive disorders with medical illness. The role of liaison psychiatry is very much important for proper diagnosis and management of depressive disorder in physical illnesses. Early notification of depression in physical illnesses can reduce the disease burden. Specific treatments of depression in physical illness need attention to choose antidepressants which do not have any adverse effect on the concerned physical illness as well as those which do not interact with other drugs which are being used for that physical illness. Beside the pharmacotherapy, the role of cognitive behavior therapy has effective value to treat depression in physical illness. Primary care services need to improve ways of identifying depression associated with particular chronic illnesses.

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# Physical illness among psychiatric outpatients in a tertiary care hospital

Md Jahangir Hossain<sup>1</sup>, Md Abdus Salam<sup>2</sup>, Mohammad Muntasir Maruf<sup>3</sup>, Noor Ahmed Giasuddin<sup>4</sup>

## Summary

The presence of physical illness in psychiatric patients not only creates difficulties in the diagnosis and treatment, but also complicates the course of both illnesses. The aim of this study was to find out the proportion of physical illness in patients attending the psychiatric outpatient department in Zainul Haque Sikder Women's Medical College and Hospital. In this descriptive cross-sectional study, 345 respondents were evaluated in a period of 2 years. The respondents included in the study purposively were of ages between 18 and 60 years and fulfilled the criteria for psychiatric disorders according to the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision (DSM-IV-TR). Respondents of both sexes and from all socioeconomic and educational backgrounds were included. All the participants were subjected to assessment by history taking and examination; clinical assessment was carried out by a psychiatrist, and appropriate laboratory investigations were performed in relevant cases. This study showed that 41.74% of psychiatric patients had physical illnesses. The generalized anxiety disorder was the psychiatric group in which the highest number of physical illness was present (79.16%). Most prevalent physical condition was hypertension (17.6%). 37.5% of the physical illnesses were diagnosed for the first time at the time of psychiatric consultation. Physical co-morbidities are present in a substantial number of psychiatric patients. Early diagnosis and treatment of physical illnesses should be carried out to improve the physical health of psychiatric patients.

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## Introduction

Medical co-morbidity in individuals with established mental illnesses is an area of great concern.<sup>1</sup> The combined diagnosis of medical and psychiatric illnesses has been linked to increased functional and occupational disabilities<sup>2</sup>, poorer quality of life<sup>3</sup>, and accelerated mortality<sup>4</sup> compared with either diagnosis alone. Medical illnesses affect more than half of those with mental illnesses, particularly among older people.<sup>5</sup> Mental illness has been a strong barrier to effective medical care. Most mental illnesses are associated with medical morbidity and mortality, leading to lower quality of life, decreased functioning, and increased risk of early death.<sup>6</sup> It represents a major health problem, with a 15–30 years shorter lifetime compared with the general population.<sup>7</sup> Individuals with severe mental illness die earlier than those in the general population because of poor health, side effects of medication, and insufficient medical care.<sup>8</sup> There are important reasons for mental health clinicians to be interested in the physical health of their patients. Physical illness is prevalent among more than 45% of psychiatric outpatients and often remains undiscovered.<sup>9</sup> A number of reviews have shown that people with severe mental illness have an increased mortality, about two or three times as high as that in the general population.<sup>10</sup> About 60% of this increase in mortality is due to physical illness.<sup>11</sup> Generally poor levels of knowledge and skill on physical health monitoring in the workforce may contribute to the poor physical health of people with serious mental illnesses.<sup>12</sup> The aim of this study was to determine the pattern of physical illness in psychiatric patients attending the psychiatric outpatient department (OPD) at Zainul Haque Sikder Women's Medical College and Hospital.

## Materials and methods

This study was a hospital based descriptive cross-sectional study with purposive sampling. Study population were the patients aged between 18 and 60 years who came for psychiatric consultation for the first time in psychiatry OPD of Zainul Haque Sikder Women's Medical College and Hospital, Dhaka from January 2012 to January 2014 and were diagnosed as having psychiatric disorder according to the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision (DSM-IV-TR) criteria.<sup>13</sup> Patients of both sexes from all social and educational backgrounds were included. Patients with mental retardation, dementia, and physical disability were excluded. After a brief explanation about the study to the patients and any significant care-giver, an informed consent was taken. Total sample size was 345. The socio-demographic profile and information about illness (psychiatric diagnosis, co-morbid physical condition) were recorded on particular sheet. All the respondents were assessed for physical illness by history taking, physical examinations and appropriate laboratory investigations. All respondents underwent liver function test, kidney function test, random blood sugar test, complete blood picture, and urine analysis. In addition, some respondents underwent endocrine analysis, ECG, brain imaging, and ultrasonography, according to the findings of history and physical examination. Data were analyzed using SPSS (version 16).

## Results

The total number of the respondents was 345. Among them 53.33% was female. Their mean age was 38.43 ( $\pm 8.14$ ) years. Most of them were urban residents (56.52%), married (78.26%), housewives (45.22%). (Table 1)

**Table 1: Sociodemographic characteristics of the respondents (n = 345)**

Characteristics	Frequency (n)	Percentage (%)
<b>Sex</b>		
Male	161	46.67
Female	184	53.33
<b>Marital status</b>		
Married	270	78.26
Unmarried	53	15.36
Others	22	6.38
<b>Residence</b>		
Rural	150	43.48
Urban	195	56.52
<b>Occupation</b>		
Service	31	8.99
Housewife	156	45.22
Business	58	16.81
Unemployed	49	14.20
Others	51	14.78

Regarding the psychiatric diagnoses of the respondents, generalized anxiety disorder (GAD) was most prevalent (60%), followed by major depressive disorder (11.88%). (Table 2)

**Table 2: Psychiatric diagnoses of respondents (n=345)**

Psychiatric diagnoses	Frequency (n)	Percentage (%)
Schizophrenia	22	6.4
Major Depressive Disorder (MDD)	41	11.9
Generalized anxiety disorder (GAD)	207	60
Bipolar mood disorder (BMD)	21	6
Substance related disorder (SRD)	20	5.8
Others	34	9.9
Total	345	100

Among the respondents, 144 (41.7%) had co-morbid physical disorders. The most common physical diagnosis was hypertension (17.6%), followed by irritable bowel syndrome (6.95%) (Table 3). The respondents with generalized anxiety disorder had the highest number of physical comorbidities (79.16%) (Table 4).

**Table 3: Physical co-morbidities of the respondents (n = 144)**

Physical co-morbidities	Frequency (n)	Percentage (%)
Hypertension (HTN)	61	17.68
Hypertension (HTN) and Diabetes mellitus (DM)	10	2.90
Irritable bowel syndrome (IBS)	24	6.95
Peptic ulcer diseases (PUD)	18	5.22
Endocrine diseases (Endo)	13	3.77
Others	18	5.22
Total	144	100

**Table 4: Physical co-morbidities with individual psychiatric disorder (n = 144)**

Psychiatric disorders	Physical co-morbidities						Total (%)
	HTN	HTN & DM	IBS	PUD	Endo	Others	
Schizophrenia	2	0	1	0	0	0	3 (2.08)
MDD	5	3	0	1	5	2	16 (11.11)
GAD	48	7	22	17	7	13	114 (79.16)
BMD	1	0	1	0	1	1	4 (2.77)
SRD	4	0	0	0	0	2	6 (4.166)
Others	1	0	0	0	0	0	1 (0.69)

Majority of physical conditions were previously diagnosed (62.5%) but 37.5% respondents were diagnosed with their physical illness for the first time during psychiatric consultation. (Table 5)

**Table 5: Physical diagnosis categories (n=144)**

Traits	HTN	HTN & DM	IBS	PUD	Endo	Others	Total (%)
Newly diagnosed	30	1	8	1	5	9	54(37.5)
Previously diagnosed	31	9	16	17	8	9	90(62.5)

## Discussion

In a recent study conducted among patients attended at psychiatry outpatient department of a private medical college hospital in Bangladesh, it was seen that the presence of Major depressive disorder, Anxiety disorders, Schizophrenia and related disorders, Bipolar mood disorders, and Substance related disorders were 38.6%, 25.8%, 6.4%, 5.5% and 5.3% respectively.<sup>14</sup> These findings were similar to the current study. Physical co-morbidity in patients with established mental illness is an area of great concern. In this study, we found that 41.74% of psychiatric outpatients had physical illnesses; our results were in accordance with those of Aragone's et al., who stated that medical illnesses affect more than half of those with mental illness, particularly among older people, and of Moussavi et al., who reported that physical illnesses occur in more than 45% of psychiatric outpatients and usually remains undiscovered.<sup>5,9</sup> There are several reasons for why people with mental illnesses may experience physical health problems; Robson and Gray discussed four reasons: service-related factors, illness related factors, health behaviour of people with mental illnesses, as well as treatment-related factors.<sup>12</sup> In this study, the highest number of physical comorbidity (79.16%) was in the group of generalized anxiety disorder, which is more than the findings of the study by Ozocan M et al. (2006) and Hasim HM and Fwzy NM (2013) (56.1%, 43.8% respectively).<sup>15,16</sup> This may be related with the psychosocial factors among the respondents. In the current study only 11% depressed patient had physical comorbidity which is different from the study by Hasim HM and Fwzy NM and Rush STAR\*D study where the comorbidity was 50% and 90%, respectively.<sup>15,17</sup> This may be due to the fact that depressed patients were found less in this study. In this study the highest prevalence of physical diagnosis is hypertension 17.6% which was more among anxiety disorder patients. This may be related with physical examination done every patient properly. One of the important findings of the study is that physical diseases were diagnosed for the first time in the course of the study in 37.5% of the respondents. Further, it is our as well as others' (McIntyre and Romano, 1975) impression that most of the psychiatrists routinely fail to physically examine their patients either due to over work or they do not feel the need to do so.<sup>18</sup> Many of them feel uncomfortable with their ability to conduct such an examination.

## Conclusion

Our results indicate that physical co-morbidities are present in a substantial number of psychiatric patients. Early diagnosis and treatment of physical illnesses should be carried out to improve the physical health of psychiatric patients. This will have a positive impact on their quality of life and will reduce disability. In addition, in order to administer appropriate psychiatric treatment to the patient according to the comorbid physical illness, there is a need to integrate physical and mental healthcare services. Further studies with large sample sizes to confirm the influence of physical comorbidity on psychiatric patients are required.

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# Major depressive disorder among caregivers of persons with schizophrenia

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## Summary

Presence of someone with schizophrenia in the home, especially after deinstitutionalization, can affect the work and social life of family members or the caregivers. This study was conducted to evaluate depression among caregivers of patients suffering from schizophrenia. This was a cross sectional study carried out in the department of psychiatry at North Bengal Medical College Hospital (NBMCH), Sirajganj, Bangladesh, during the period of January 2016 to June 2017 among purposively selected 50 respondents who were the primary caregivers of persons with schizophrenia attended the psychiatry outpatient department (OPD) of NBMCH. Mean age of the respondents was 38.98 ( $\pm 12.42$ ). Majority were from the age group of 41-50 years (28%) and 31-40 years (24%). Among the respondents, 58% were female and 42% male. Most of them were married (72%), muslim (74%), completed primary level of education (32%), house wife (46%) and of rural background (70%). Among them, 44% suffered from Major Depressive Disorder. This study reflects that significantly higher rate of caregivers experienced depression. So we should pay attention to not only the persons with schizophrenia but also those who are giving care to them.

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## Introduction

Schizophrenia is a heterogeneous syndrome that includes disturbances in language, perception, cognition, social relatedness, and volition.<sup>1</sup> The lifetime prevalence of schizophrenia has generally been estimated to be approximately 1% worldwide.<sup>2</sup> In Bangladesh the prevalence of schizophrenia is 0.6%.<sup>3</sup> Early onset of the illness, persistence of symptoms in the long run and chronic relapsing course of schizophrenia has far-reaching consequences for both the patients with schizophrenia and their relatives. Due to the illness, the patients may have diminished capacity for social relationships, they may not be able to take care of themselves and their day-to-day needs, and face reduced employment opportunities and if employed, may be less productive. The illness thus hampers independent living and may lessen life satisfaction. Family members of patients with schizophrenia are often confronted with uncertainty about the course of the illness, lack of reciprocity in relationship with the patient and the trepidation of unpredictable symptoms.<sup>4</sup> Therefore the presence of someone with schizophrenia in the home, especially after deinstitutionalization, can affect the work and social life of family members or the caregivers.<sup>5</sup> Caregiver burden in mental illness can either be objective or subjective. Objective burdens are negative symptoms; caregivers' lives are disrupted in terms of domestic routine, social activities and leisure, social isolation, financial difficulties and employment difficulties. Subjective burdens comprise emotional strain on caregivers, e.g. fear, sadness, anger, guilt, loss, stigma and rejection. Caregiving in patients with schizophrenia is an enormous task and most caregivers seem to be unprepared for the longitudinal course and duration of an illness like schizophrenia.<sup>6,7</sup> No wonder the caring relatives often experience grief and have to cope with stigma and social isolation, which leaves them with a feeling of shame, embarrassment or guilt. Thus, the illness leads to considerable emotional, financial and real world demands on those close to the sufferer, typically the parents or the spouses. Moreover, studies have shown that caregiving frequently leads to psychiatric morbidity, neglect of health of self and higher risk of mortality.<sup>8,9</sup> Caregivers of the patients with psychiatric illnesses such as schizophrenia have significant high level of depression. The commonest variables related to depression among caregivers were gender, socio-economic status, marital status, family size, education, relationship with the patient and the burden of care.<sup>10,11</sup> The objective of this study was to determine the prevalence of major depressive disorder among caregivers of persons suffering from schizophrenia.

## Materials and methods

This was a descriptive cross sectional study, carried out in the Department of Psychiatry, North Bengal Medical College Hospital (NBMCH), Sirajganj from January, 2016 to June, 2017. A total of 50 primary caregivers of persons with schizophrenia were selected as respondents by convenient sampling technique. Primary caregiver was defined as an adult relative living with the person with schizophrenia, in the same environment, for at least 12 months and was involved directly in giving care to the patient and most supportive either emotionally or financially, i.e. felt most responsible for the patient.<sup>12,13</sup> A semi-structured questionnaire was prepared to determine socio-demographic characteristics such as age, sex, marital status, economic status, social background etc. Major depressive disorder was diagnosed by using Bangla version of Structured Clinical Interview for Diagnostic and Statistical Manual IV Axis I disorders– non-clinician version.<sup>14</sup> Ethical issues were maintained properly. Data were analyzed using Statistical Package for Social Sciences (SPSS), version 15.0 for Windows.

## Results

In this study, majority of respondents were from the age group of 41-50 years (28%) and 31-40 years (24%) with the mean age of 38.98 ( $\pm$ 12.42) years (Table 1). Female were more (58.0%) than male. Most of them were married (72.0%) and came from rural area (66.0%). Maximum respondents were Muslim (74.0%). Regarding occupation, housewives were highest in number (46.0%) (Table 2).



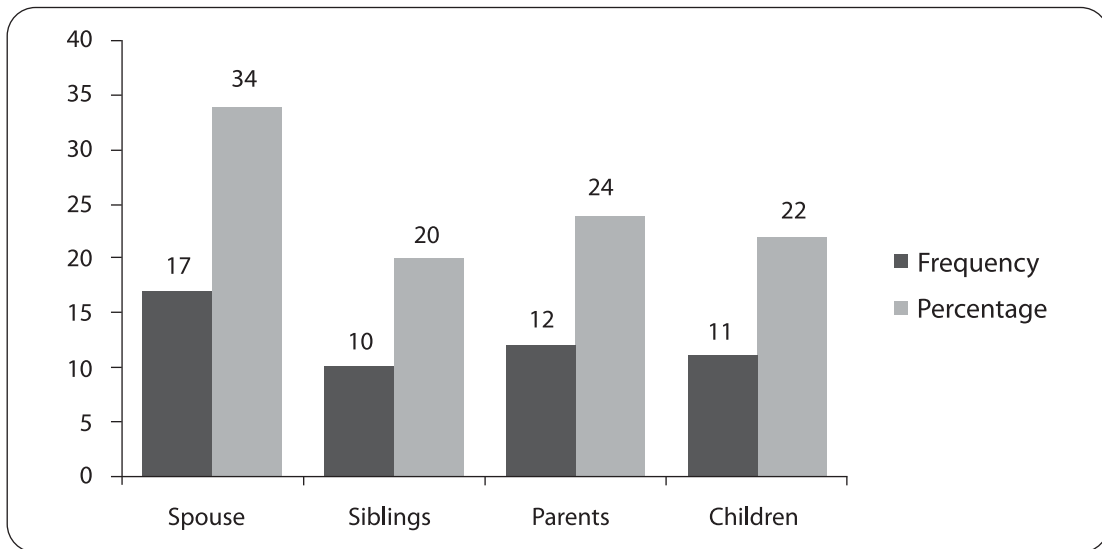
**Table 1: Distribution of the respondents according to age (n=50)**

Age (in years)	Frequency	Percentage (%)
Up to 20	2	4
21-30	11	22
31-40	12	24
41-50	14	28
51-60	8	16
61-70	3	6
Mean ( $\pm$ SD)	38.98 ( $\pm$ 12.42)	

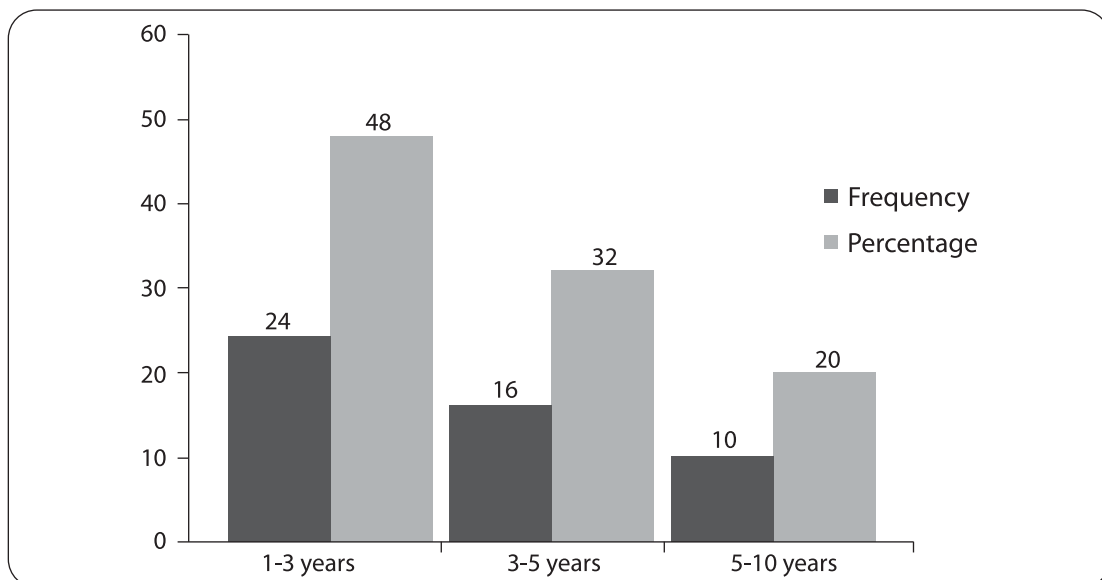
**Table 2: Distribution of the respondents according socio demographic variables (n=50)**

Variables	Frequency	Percentage (%)
<b>Sex</b>		
Male	21	42
Female	29	58
<b>Religion</b>		
Muslim	37	74
Hindu	13	26
<b>Residence</b>		
Rural	33	66
Urban	17	34
<b>Marital Status</b>		
Married	36	72
Unmarried	14	28
<b>Education</b>		
Illiterate	10	20
Primary	14	28
Secondary	7	
SSC	11	22
HSC	3	6
Graduation and above	5	10
<b>Occupation</b>		
Service	10	20
Business	5	10
Farmer	6	12
Housewife	23	46
Student	2	4

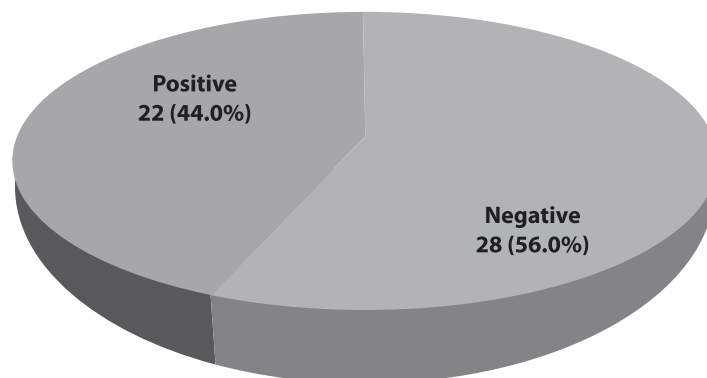
Most of the caregivers were spouse (34%), followed by parents (24%), children (22%) and siblings (20.0%) (Fig 1). The duration of giving care to the respondents was ranged from 1 to 10 years with the mean duration of 3.93 ( $\pm$  2.33) years (Fig 2). Major depressive disorder was found among 44% of the caregivers (Fig 3).



**Figure 1: Distribution of caregivers according to relationship with the patients (n=50)**



**Figure 2: Distribution of caregivers according to duration of giving care (n=50)**



**Figure 3: Distribution of respondents by major depressive disorder**

## Discussion

In our study, we found that majority of the respondents were from the age group of 41-50 years (28%) and 31-40 years (24%) with the mean age of 38.98 ( $\pm 12.42$ ) years. This is consistent with another study, where most of the caregivers were aged above 35 years.<sup>15</sup> In the present study there was 21 (42%) male and 29 (58%) female. This is similar with the result of some studies where majority respondents were female.<sup>7,18</sup> Male predominance of caregivers of patients suffering from schizophrenia was reported in other study.<sup>15</sup> In our society house hold works are mostly done by female and outdoor works mostly by male. This may be the cause that, female caregivers are more common in this study. In our study 34% respondents were in the middle class and 66% were in the lower class of socioeconomic status. This may be due to the fact that people of poor socioeconomic condition constitute the major bulk of the population in Bangladesh and our place of study was in a district level of north bengal region. This may be the cause of more poor class in this study. This result was correlated with another study where 51.6%, caregivers were in low socioeconomic group.<sup>5</sup> In the present study 72% caregivers were married and 28% were unmarried; Caregivers were aged person in this study and the mean age was about 39 years. Aged person are mostly married in our society which may be the cause of more married caregivers in this study. Most of the caregivers in this study were spouse (34%). In a Nigerian study, parents were the most common caregivers.<sup>17</sup> In our study we have found, 44% caregivers were suffering from major depressive disorder. One study conducted by Singh and De Sousa found that mild to severe depression was in 65% of the caregivers.<sup>7</sup> Magana et al examined the relation between caregivers' mental health and perceived burden and stigma and characteristics of the patient and caregiver. Interviews were conducted in Wisconsin, California and Texas with 85 Latinos caring for an adult person with schizophrenia. They found 40% caregivers met the standard CSE-D cut off score of 16 or higher, which classifies individuals as having elevated levels of depressive symptoms.<sup>11</sup> Another study conducted in the University Psychiatry Unit of the National Hospital of Sri Lanka (NHSL) to identify symptoms of caregivers' depression and they found 37.5% caregivers of persons with schizophrenia were suffering from depression.<sup>16</sup> A study done in KSA found that depressive disorders were higher among caregivers (18.33%) of persons with schizophrenia than control group (3.33%) ( $p < 0.05$ ),<sup>5</sup> whereas in another study, researchers have found that 5% caregivers of schizophrenic patients had major depressive disorder.<sup>19</sup> In a Bangladeshi study, 22.43% of the caregivers of persons with schizophrenia were suffering from different types of mental disorders. Among them, major depressive disorder was most prevalent (11.8%).<sup>18</sup> In another study, researchers have reported that 56% caregivers scored positively for depressive symptoms.<sup>20</sup> Caregivers of persons with schizophrenia are to face plethora of difficulties which includes financial burden, role burden, physical burden, time burden and emotional burdens. Stigma attached to schizophrenia also played an important part in the high prevalence of depression in the present study.

## Conclusion

In our study, we found that caregivers experienced significantly higher rate of depression Active assessment of depression in the caregiver of patients suffering from schizophrenia is crucial. Care to the caregiver is also very important to get better service for the patients with schizophrenia. Further study involving multicenter and large scale need to be conducted to evaluate depression among caregivers of patients suffering from schizophrenia.

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## Depressive disorders before and after renal transplantation

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### Summary

Chronic and debilitating diseases like chronic kidney disease have numerous psychiatric consequences and strongly affect the mental health status of patients. The objectives of this study were to assess and quantify Depressive Disorders among End Stage Renal Disease (ESRD) patients, waiting for renal transplantation and 3 months after Renal Transplantation. It was a descriptive and analytical, follow up study which was conducted in the department of Psychiatry, Bangabandhu Sheikh Mujib Medical University (BSMMU) from July, 2013 to September, 2014. Cases were taken from department of Nephrology, BSMMU and Center for Kidney Diseases & Urological (CKDU) Hospital, Shyamoly, Dhaka. Adult ESRD patients waiting for Renal Transplantation of either sex were included. A total of 45 patients were taken and SCID-I CV (Clinician Version) was applied for diagnosis of Depressive Disorder. Severity was assessed by Bangla version of short-form of the Depression Anxiety Stress Scale-21 (DASS-21-BV). Depressive Disorders were found among 51.1% of patients before renal transplantation and 28.9% of patients after transplantation. Severity scoring of Depression revealed, 8.7% had extremely severe, 21.7%, 39.1% and 30.4% had severe, moderate and mild level of Depression respectively before renal transplantation. After renal transplantation 13.1%, 21.7%, 21.7% of patients had severe, moderate and mild level of Depression respectively. Frequency of Depressive Disorders were significantly more before renal transplantation ( $\chi^2$  value=4.63,  $p=0.03$ ). Severity also significantly reduced 3 months after renal transplantation ( $\chi^2$  value=13.98,  $p=0.007$ ). Depressive Disorders are highly prevalent among ESRD patients. So, strong consultation-liaison psychiatric services are needed to provide proper treatment to this group of patients.

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## Introduction

Depressive disorder is a global public health concern and is one of the most common mental disorder in the world. In 2012, depression is estimated to affect 350 million people of the world and is a common complication of chronic illnesses.<sup>1</sup> In End Stage Renal Disease, when kidney function declines to < 12% to 15%, patient's survival depends on renal replacement therapy (RRT). Many psychiatric problems are also associated with this procedure. Among them depression is a frequent and most common problem.<sup>2</sup> A study in North America showed the frequency of depression is 25% to 30% among ESRD patients, especially after initiation of renal replacement therapy. It has also been recognized among renal transplant recipients.<sup>3</sup> Subjects living alone were 2.5 times more likely to be depressed as those living with others.<sup>4</sup> Female gender, unemployment, low income are risk factors for depression both in general and CKD populations. Younger age is associated with more mental distress than older age.<sup>5-7</sup> An Indian study revealed a successful renal transplantation dramatically improves the quality of life and the patients feel free from dependence on a machine, dietary restriction and loss of work days due to dialysis. The prevalence of depression in ESRD patients was 86.7% as compared to 56.7% in post renal transplant patients.<sup>8</sup> Another similar study in Turkey revealed, levels of satisfaction with quality of life after operation among recipients were 85.5% and among donors were 62.8% respectively.<sup>9</sup> Prevention and treatment of depression is crucial because it is strongly associated with several important outcomes of CKD. Recipients having depression experiences negative transplant outcome like return to dialysis, chronic allograft rejection, even death. Different authors concluded that monitoring the presence of depression and enhancing psycho-social support should be part of the routine care in the CKD population.<sup>3,10</sup> In Bangladesh a study was performed regarding Depressive Disorders among ESRD patients before and during dialysis revealed 53.3% of ESRD patients on dialysis having depressive disorders; 56.8% before initiating dialysis & 50.9% on dialysis treatment.<sup>11</sup> Another study was done about twenty years back regarding psychiatric aspects among patients suffering from severe renal failure revealed 54% of patients having depression as a part of psychiatric morbidity.<sup>12</sup> Therefore, in the view of above findings and paucity of Bangladeshi studies in this field, the current study was aimed at finding out the frequency and severity of Depressive Disorders among ESRD patients before and after renal transplantation and detection of association between socio-demographic variables and Depressive Disorders among this group of patients.

## Materials and methods

It was a descriptive and analytical, follow-up study. Study was done in department of Psychiatry, BSMMU. Cases were taken from inpatient and outpatient departments of Nephrology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka and Center for Kidney Diseases & Urological (CKDU) Hospital, Shyamoly, Dhaka. Adult patients diagnosed as ESRD (CKD-stage-V), decided for renal transplantation of either sex were included in this study. From present and previous treatment records 66 patients were recruited initially according to selection criteria. Among them 2 did not gave consent, 1 patient filled the questionnaire inappropriately, 6 of them withdrew themselves in the follow up interview, 5 of them suffered from acute graft rejection, 2 of them became unfit for renal transplantation due to donor and investigation related problems and 5 of them died after Renal transplantation before the follow up interview. Ultimately 45 patients were taken as sample. Informed consent was taken from the respondents and ethical issues were considered throughout the study. The participants were interviewed by semi-structured questionnaire (in Bangla) for socio-demographic and illness related variables. SCID-I (clinician version) was applied and the diagnosis was made with context of DSM-IV-TR. Severity of depression was measured by using DASS-21-BV (Bangla Version). Though the DASS-21-BV is a self-reported questionnaire, in this study almost all the patients filled up this during face to face interview. We narrated the statements of the questionnaire and the patients chose the appropriate one. A sum of the scores of seven questions of the sub-scales for depression were completed by the researchers by the scoring template and then evaluated as per the severity-rating index. Comparison of frequency of depression before Renal transplantation and three months after Renal transplantation was analysed by chi-square test and comparison of severity of depression scoring was analysed by chi-square test and paired student-t test. P-value  $\leq 0.05$  was taken as significant. Data analysis was performed by Statistical package for social science (SPSS) version-20.



## Results

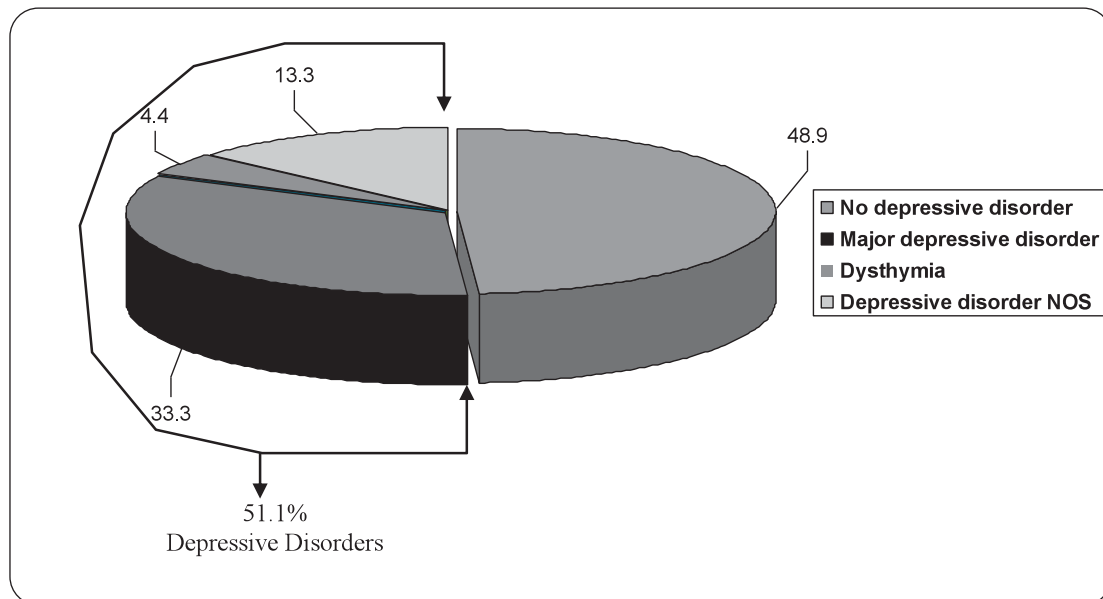
Among 66 approached, total 45 cases were participated in this study; therefore the participation rate was 68.1%. Most of the patients (68.9%) were within 18-37 years of age and next within 38-57 years (31.1%). Among the patients 84.4% were male and 15.6% were female. 26.7 % of patients read up to secondary level, 73.3 % completed graduation. Regarding occupation, 53.3% were service holder and 11.1% were housewife. Among the 45 patients, 73.3%, 24.4% and 2.2% were married, unmarried and widower respectively and 25 patients (55.6%) were principal earning member of their family. Most of them had poor family and social support and the status revealed 71.1% had no such support. Depressive Disorders were more among patients having poor family or social support. Proportion of the Disorders was more among patients suffer less than 1 year and more than 5 years. Hypertension was the most prevalent co-morbid medical illness (68.9%), Diabetes mellitus was the second (37.8%) and Dyslipidaemia was the third (11.1%). Patients having comorbid physical illnesses suffered more with Depressive Disorders. Reduction of working performance was found in 28 patients (62.2%). Negative impact on working performance significantly increased Depressive Disorders (Table 1).

**Table 1: Distribution of respondents according to socio-demographic and illness related variables (n=45)**

Characteristics	Frequency	Percentage
<b>Age (in years)</b>		
18-37	31	68.9
38-57	14	31.1
Mean $\pm$ SD: 35.04 $\pm$ 9.77; Range: 19-57 years		
<b>Sex</b>		
Male	38	84.4
Female	7	15.6
<b>Educational status</b>		
Up to secondary	12	26.7
Bachelor and above	33	73.3
<b>Occupation</b>		
Service	24	53.3
Housewife	5	11.1
Others	16	35.6
<b>Marital status</b>		
Married	33	73.3
Unmarried	11	24.4
Widower	1	2.2
<b>Main earner of family</b>		
Yes	25	55.6
No	20	44.4
<b>Familial or social support</b>		
Yes	13	28.9
No	32	71.1

Characteristics	Frequency	Percentage
<b>Duration of renal disease</b>		
< 1 year	10	22.2
1-5 years	31	68.9
>5 years	4	8.9
<b>Associated comorbidity</b>		
HTN	23	51.1
DM	9	20.0
Dyslipidemia	2	4.4
HTN & DM	5	11.1
HTN, DM and dyslipidemia	3	6.7
No history	3	6.7
<b>Working performance</b>		
Reduce	28	62.2
No change	17	37.8

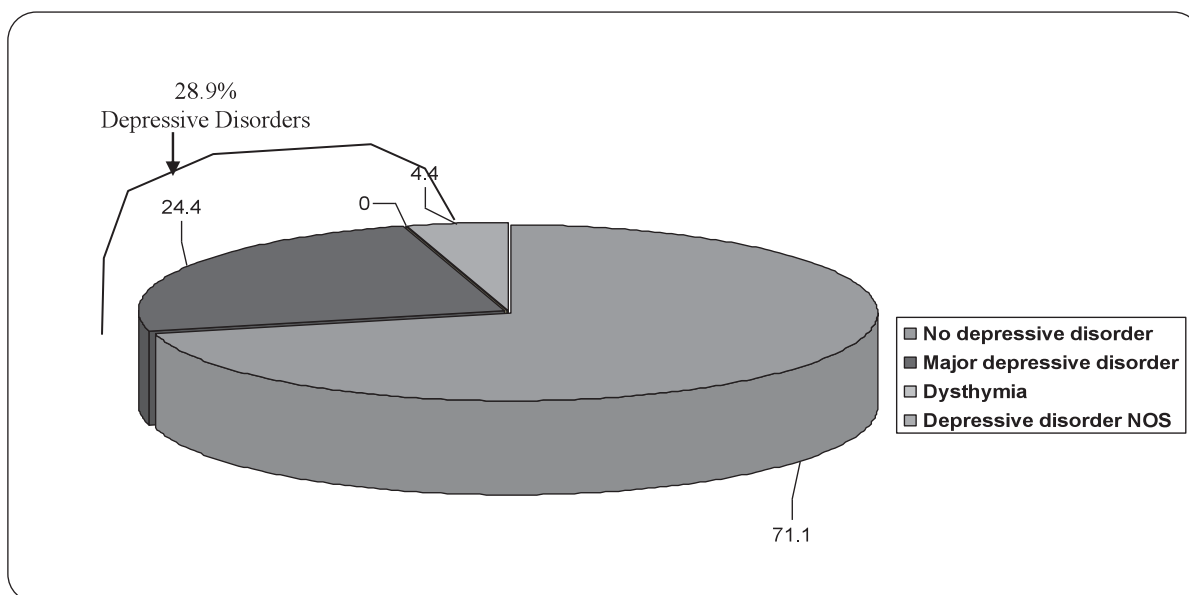
Most of the caregivers were spouse (34%), followed by parents (24%), children (22%) and siblings (20.0%) (Fig 1). The duration of giving care to the respondents was ranged from 1 to 10 years with the mean duration of 3.93 ( $\pm$  2.33) years (Fig 2). Major depressive disorder was found among 44% of the caregivers (Fig 3).



**Figure 1: Percentage and type of Depressive Disorders among ESRD patients before Renal transplantation (n=45)**

Subsequently after applying SCID-I-CV and assigning diagnosis according to DSM-IV-TR, Depressive disorders were found among 28.9% (n= 13) of patients 3 months after Renal transplantation in follow up visit. Major Depressive Disorder (MDD) was diagnosed among 24.4% (n=11) and 4.4% patients were suffering from Depressive Disorder NOS (DD NOS) (Figure 2).





**Figure 2: Percentage and type of depressive disorder among ESRD patients after Renal transplantation (n=45).**

The change of depressive status was highly significant that was found by paired student-t test with the value of DASS-21 score among the two groups (Table- 2).

**Table 2: Comparison of DASS-21 scoring before and after renal transplantation (n=45)**

DASS-21 score	Before renal transplantation (Mean±SD)	After renal transplantation (Mean±SD)	t value	p value
DASS-21 score	12.53±6.92	9.42±5.25	7.74	<0.001**
Range	(4-32)	(4-26)		

p value measured by Paired t-test, \*\* = highly significant

The frequency and percentage of Depressive disorders were significantly reduced after renal transplantation than before although the values of DD after transplantation were also high (Table 3).

**Table 3: Comparison of frequency of Depressive disorders before and after renal transplantation (n=45)**

Depressive disorders	Before renal transplantation No. (%)	After renal transplantation No. (%)	Chi-square	p value
Present	23(51.1%)	13(28.9%)	4.63	0.03*
Absent	22(48.9%)	32(71.1%)		
Total	45(100.0%)	45(100.0%)		

p value, Chi-square test, \* = Significant

Simultaneously the severity of the Depressive Disorders also significantly reduced following renal transplantation (Table 4).

**Table 4: Comparison of severity of Depressive Disorders before and after renal transplantation (n=23)**

Depressive disorders	Before renal transplantation (n=23) No. (%)	After renal transplantation (n=23) No. (%)	$\chi^2$	p value
Normal	0(0.0%)	10(43.5%)		
Mild	7(30.4%)	5(21.7%)		
Moderate	9(39.1%)	5(21.7%)	13.98	0.007*
Severe	5(21.7%)	3(13.1%)		
Extremely severe	2(8.7%)	0(0.0%)		
Total	23(100.0%)	23(100.0%)		

p value ,Chi-square test, \* = Significant

## Discussion

Present study observed Depressive Disorders among 51.1% (n=23) of patients before Renal transplantation. Major Depressive Disorder (MDD) was diagnosed among 15 patients (33.3%). Six (13.3%) were suffering from Depressive Disorder NOS (DD-NOS) and two (4.4%) were suffering from Dysthymia. Subsequently in follow up visit, Depressive Disorders were found among 28.9% (n= 13) of patients after 3 months of Renal transplantation. Major Depressive Disorder (MDD) was diagnosed among 24.4% (n=11). Two (4.4%) were suffering from Depressive Disorder NOS (DD-NOS) and one of (2.2%) dysthymic patient became a case of Major Depressive Disorder on follow up visit, the so called double depression. Frequency of Depressive Disorders were more before renal transplantation than after (51.1% & 28.9%). It was hypothesized in the study that the frequency and severity of Depressive Disorders were reduced following renal transplantation, which was established by the results. When the treatment starts, symptomatic improvement of physical condition also leads to improvement of mood with the hope of be cured. This might be a possible explanation of higher rate of Depressive Disorders among patients before renal transplantation and many psychological problems related to renal transplantation like use of life-long immune-suppressants such as steroids-which have their own side effects, fear of rejection, and necessity of regular medical supervision, financial support, poor liaison Psychiatric services may cause depression after renal transplantation. Different studies also had almost similar results like, Ozcurumez et al. (2004) had found 94.4% of recipients were highly satisfied about their quality of life after operation and Pawar et al. (2006) had stated that successful renal transplantation was associated with improvement of depression, IQ and life satisfaction.<sup>8,13</sup> In this study, more than 50% of patients were suffering from Depressive Disorders before renal transplantation and 33.3% had MDD, 13.3% had DD-NOS which have similarity with the study of Alim M (2013), where the researcher found 53.3% of ESRD patients on dialysis having depressive disorders; 56.8% before initiating dialysis and 50.9% on dialysis treatment. Among the 53.3%, 37% were suffering from MDD, 14.1% from DD-NOS.<sup>11</sup> In two other recent studies using validated instruments, the prevalence of Depressive Disorders had been about 26% (19% MDD, 4.84% dysthymia, 1.6% minor depression) and 27%, respectively; the majority of patients suffered from MDD.<sup>14,15</sup> Though proportion of DD was high among their patients, in our country it was almost double to that. Reason of disparity might be due to different socio-economic condition and treatment facilities between western world and Bangladesh. During interview almost all expressed their concern regarding on-going treatment expenditure. Moreover, western people take more care of their mental health and probably more optimistic.

In the study, age of most of the patients (68.9%) ranges from 18-37 years, which was similar to Ozcuruimez et al. (2004).<sup>13</sup> Indian researcher Chaturvedi SK and Pant VL (1985) found 84% the age range of 50 transplant recipient was from 20-39 years.<sup>16</sup> The proportion of Depressive Disorders were more in this age group may be due to their negative role transition in employment, family and sexual roles and un-acceptancy of ESRD in this age. Though the findings were dissimilar with Alim M (2013)'s study done in Dhaka, Bangladesh among ESRD patients on dialysis. He found that proportion of Depressive Disorders were more in lower age group (<30 years). Number of male respondents were greater than female, which showed similarity with Alim M (2013)'s study and Amira (2011)'s study.<sup>11,17</sup> But female suffered more with depression than male. Zalai M et al. (2008) also found young age, female gender, poor social support made patient vulnerable to depression.<sup>10</sup> Depression was more among higher education group before transplantation and single people which was not significant ( $p$ -value >0.05). The findings correspond with the results of Chaturvedi SK and Pant VL (1985)'s study and Akman B et al. (2004)'s study.<sup>3,16</sup> The exact causes were not clear, however unrealistic expectation, frustration, low self-esteem may be the cause of depression. In the study 71.1% of the recipients had no family or social support that was significantly associated with Depressive Disorders. Many researchers found this association like Zalai M et al. (2008) and Kimmel P et al. (2007).<sup>2,10</sup> Low perceived social support, marital problem, eating dissatisfaction was associated with Depressive Disorders. Lack of sharing of psychological strain social or familial disharmony may further aggravates Depressive Disorder. About 8.9% patients have renal disease duration >5 years, experiences more Depressive Disorder. The findings show similarities with the results of Chaturvedi SK & Pant VL (1985).<sup>16</sup> High frustration, inferiority feelings by continued renal disease may produce depression. Majority of them have co-morbid medical illnesses like Hypertension (68.9%), Diabetes mellitus (37.8%), Dyslipidaemia (11.1%). Significant reduction of working performance was found in 28 patients (62.2%). Presence of comorbid physical disease and negative impact on working performance were significantly associated with Depressive Disorder. The findings are consistent with those of Alim's study (2013).<sup>11</sup> Probably the stress aggravation by co-morbidities and economic crisis due to poor working performance along with ESRD may be the cause of depression. In the present study, severity scoring before renal transplantation revealed 2 cases (8.7%) were extremely severe, 5 cases (21.7%) were severe, 9 cases (39.1%) were moderate and 7 cases (30.4%) were mild. On the contrary, Severity scoring after renal transplantation revealed 3 cases (13.1%) were severe, 5 cases (21.7%) were moderate, 5 cases (21.7%) were mild. So, severity of Depressive Disorders reduced 3 months after renal transplantation than before. Proportion and severity of Depressive Disorders (DDs) were almost equal among the patients of both the hospitals but improvement of Depressive Disorders was more in BSMMU probably due to availability of better consultation-liaison psychiatric services. Different confounding variables that might affect the results of the study like- drug compliance, dietary habit of the recipients, substance abuse, other stressors were tried to ruled out with help of transplant surgeons, physicians and others hospital staffs and patient's care givers. But the effects of those variables could not be ruled out strictly due to lack of proper support. So results of the study should be considered keeping in mind the fact.

## Conclusion

The present study concluded that, the frequency and severity of Depressive Disorders among ESRD patients waiting for renal transplantation were very high and were reduced significantly following renal transplantation. But still the percentages were also high following renal transplantation. About one third of the patients had severe depression. So steps are required to treat Depressive Disorders among ESRD patients to reduce their sufferings and improve quality of life. Strong Consultation-liaison Psychiatric services, pre-transplant counselling and psycho education as well as close psychiatric follow up is required to reduce negative outcomes of renal transplantation.

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# Premature ejaculation among men attending in the sex clinic of a tertiary level psychiatric hospital

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## Summary

Premature Ejaculation (PE) has been considered as the most common male sexual dysfunction having significant adverse effects on the quality of life of the men and their sexual partners. The objective of the study was to determine the proportion of PE among men attending in the sex clinic of National Institute of Mental Health (NIMH), Dhaka, Bangladesh. This was a descriptive cross-sectional study conducted from August 2017 to June 2018 among the purposively selected 280 patients. The patients were of 18 to 60 year, and sexually active during at least the past 6 months. A semi-structured self-administered questionnaire, containing socio-demographic and clinical variables and Bangla version of Premature Ejaculation and Diagnostic Tool (PEDT) were used to assess PE. Results showed that mean ( $\pm$ SD) age of the respondents was 38.8 ( $\pm$ 8.44) years. 26.4% of the respondents were found to have Premature Ejaculation. Among the PE subtypes, lifelong PE, acquired PE, natural variant PE, and premature-like ejaculatory dysfunction, was 20.3%, 24.3%, 25.7% and 29.7% respectively. Presence of PE was slightly higher among the younger age (aged 20-40 years) group (51.1%) than the older age (aged 41-60 years) group (48.9%). Intra-vaginal ejaculatory latency time (IELT) of 51.1% of men was >3 minutes, 38.2% of men in the range of 2-3 minutes and that of 10.7% men was <1 minute. The high prevalence and adverse consequences illustrate the need for promoting awareness and standardized methods of PE diagnosis, assessment and treatment.

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## Introduction

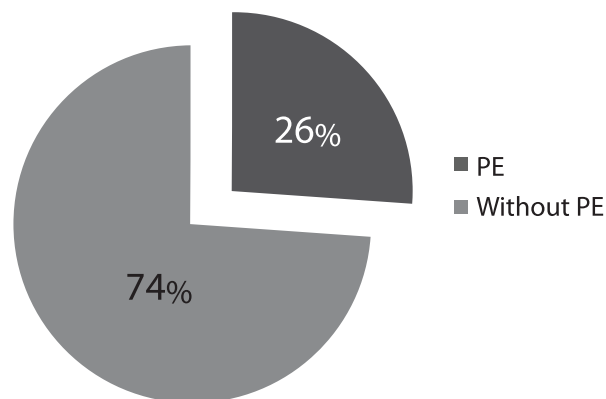
Premature ejaculation (PE) has been considered as the most common male sexual dysfunction.<sup>1</sup> The impact of PE is mostly felt psychologically and in interpersonal relationships<sup>2</sup> and it can have a significant adverse effect on the quality of life for the patient and his sexual partner's. Throughout history, PE has been defined in many ways by several professional organizations and individuals.<sup>3-6</sup> The Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision (DSM-IV-TR) by the American Psychiatric Association (APA) defines PE as persistent or recurrent ejaculation with minimal sexual stimulation before, on, or shortly after penetration and before the person wishes it, with the disturbance causing marked distress or interpersonal difficulty and is not due exclusively to the direct effects of a substance (e.g., withdrawal from opioids).<sup>5</sup> Most of these definitions are considered to be authority based rather than evidence based.<sup>7</sup> To overcome the shortcomings of former definitions, the International Society for Sexual Medicine (ISSM) Ad Hoc Committee of international experts in PE adopted a completely new evidence-based definition of PE in 2014. They classified premature ejaculation as lifelong or acquired, and proposed inclusion of an objective, quantifiable time to ejaculation, which is referred to as the intra-vaginal ejaculatory latency time (IELT). The IELT is defined as the time from vaginal penetration to ejaculation. Lifelong premature ejaculation is characterized by an IELT of <1 minute since first intercourse, whereas IELT of <3 minutes at any point in a man's life is considered to be acquired premature ejaculation.<sup>8</sup> But in reality, two more PE subtypes are present named 'natural variable PE' and 'premature-like ejaculatory dysfunction' which are considered to be authority based rather than evidence-based. Men with natural variable PE experience coincidental and situational rapid ejaculations, whereas men with premature-like ejaculatory dysfunction complain of PE in spite of normal, or even long ejaculation latency time.<sup>9</sup> So, with the varying definitions of PE the prevalence of PE differs. On average, most studies reported a prevalence ranging from 20 % to 31.6%.<sup>10-15</sup> There are very few published literatures on psychosexual dysfunction in Bangladesh and there is no established data regarding the prevalence of PE in Bangladesh, so far. Based on this fact, this study was designed to determine the prevalence of PE among men attending in sex clinic, NIMH, Dhaka, Bangladesh.

## Materials and methods

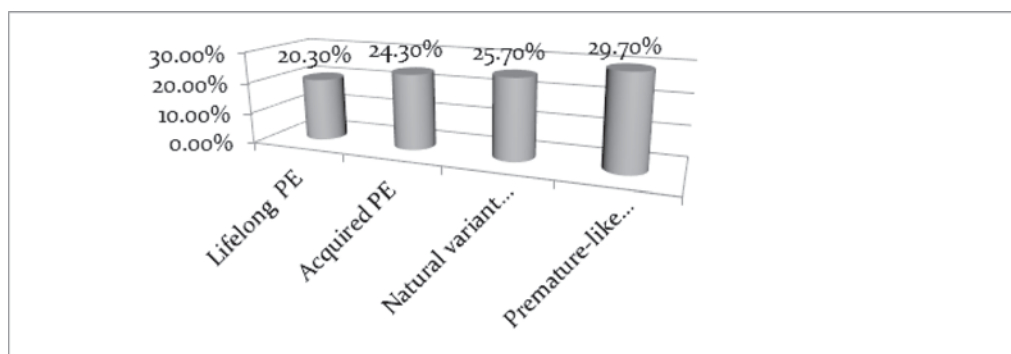
This was a descriptive cross-sectional study conducted from August 2017 to June 2018, among men attending in Sex clinic of NIMH, Dhaka, Bangladesh. A sample size was calculated using a single proportion formula to determine the prevalence of PE.<sup>16</sup> Considering the prevalence of men with confirmed PE of 20.3%<sup>17</sup> and precision of .05 with 95% confidence interval, the minimum required sample size was 267. After considering a non-response rate of 5%, a total sample size of 280 men was needed. Men aged 18-60 years who were sexually active for at least 6 months prior to the study were selected by purposive sampling technique. Those with unstable psychiatric illnesses, mental retardation, illiteracy were excluded. Before data collection, the patients were provided with information related to the study along with an information and consent form. Confidentiality was ensured, and written informed consent was taken. For data collection, a semi-structured questionnaire in Bengali prepared by the researcher containing socio-demographic and other variables was distributed to the respondents. The Bengali version of Premature Ejaculation Diagnostic Tool (PEDT) was applied to diagnose premature ejaculation (PE). The PEDT has a high level of agreement with the clinical diagnosis (according to DSM-IV-TR) and good test-retest reliability with an interclass correlation co-efficient of 0.888.<sup>17,18</sup> It consists of 5 items with 5 domains (ejaculatory control, frequency, minimal stimulation, distress and interpersonal difficulty) with 5- Likert scale (0-4) and the score-range from 0 to 20. A score of < 8 indicates no PE; 9 & 10 indicates probable PE; and >11 indicates confirmed PE. In this study, the PE cases included confirmed and probable cases of PE based on a Premature Ejaculation and Diagnostic Tool (PEDT) score of >9.<sup>19</sup> The English version of PEDT was translated and validated into Bengali by a local psychiatrist and consent was taken from him to use the tool in this study. After proper processing and handling, data were encoded. Analysis was done by Statistical Package Social Sciences (SPSS) for windows version 16. After thorough cleaning and editing of data, descriptive analyses were done and findings were presented by frequency tables and graphs.

## Results

The study identified socio-demographic and clinical characteristics of the respondents including age, religion, habitat, education, occupation, self-estimated IELT. A total of 280 men out of 290 eligible men responded with a response rate of 96.6%. The prevalence of PE among the men attending in sex clinic of NIMH, Dhaka, Bangladesh was 26.42% (n=74) (Figure 1). The prevalence of PE subtypes, namely, lifelong PE, acquired PE, natural variant PE, and premature-like ejaculatory dysfunction, were 20.3% (n=15), 24.3% (n=18), 25.7% (n=19) and 29.7% (n=22) respectively. (Figure 2). The mean ( $\pm$ SD) age of the respondents was 38.8 ( $\pm$ 8.44) years and mean ( $\pm$ SD) duration of relationship was 10.35 ( $\pm$ 8.44) years. 51.1% of the respondents were in age group of 20-40 years and 48.9% of them were in age group of 41-60 years. 52.1% of them studied upto primary and secondary level. Majority (74.5%) of the respondents resided in urban area and rest (25.5%) of them resided in rural area. Most of the respondents were Muslim (95%) and (5%) was found as Hindu. Almost two-third of the respondents (68.6%) were employed (Table 1).



**Figure 1: Proportion of the respondents with PE (n=280)**



**Figure 2: Proportion of PE subtypes among men with PE (n=74)**

**Table 1: Socio-demographic characteristics of the respondents (n=280)**

Characteristics	Frequency	Percentage
<b>Age (years)</b>		
20-40	143	51.1
41-60	137	48.9
<b>Habitat</b>		
Rural	70	25.5
Urban	210	74.5
<b>Religion</b>		
Islam	266	95
Hindu	14	5
<b>Education</b>		
Primary and secondary	146	52.1
Graduation and post-graduation	134	47.9
<b>Occupation</b>		
Employed	192	68.6
Unemployed	88	31.4

**Discussion**

Due to the absence of universally accepted PE definition, many prevalence studies conducted in the past reported conflicting results.<sup>20,21</sup> In this study, the PE cases included confirmed and probable cases of PE based on a Premature Ejaculation and Diagnostic Tool (PEDT) score of > 919 and proportion of premature ejaculation was found 26.4% (74 out of 280 men), which was consistent with previously reported majority of the study findings.<sup>10-15</sup> Due to the unavailability of published data on premature ejaculation among men in Bangladesh, we could not compare the results in Bangladesh context. In Malaysia, studies have reported prevalence of PE of 29.0%<sup>22</sup> and 49.1%.<sup>17</sup> First one is almost consistent with our study findings and the later study, which applied a similar methodology, a PEDT questionnaire, an operational definition, and was conducted in a clinical setting, but involved diverse ethnic groups, showed a much higher prevalence. Variations in culture and religion may contribute to this difference. In the present study, the proportion of PE subtypes, namely, lifelong PE, acquired PE, natural variant PE, and premature-like ejaculatory dysfunction, was 20.3%, 24.3%, 25.7% and 29.7% respectively. A well conducted study among men attending in a primary healthcare clinic in Kelantan, Malaysia using the same scale and similar methods detected those of the PE subtypes, 7.9%, 15.9%, 58.7%, and 17.5% respectively. This big difference may be explained by the difference in the study population, sample size and the study place. A recent epidemiological study conducted in Turkey found the prevalence of lifelong, acquired and natural variable PE, and premature-like ejaculatory dysfunction 2.3%, 3.9%, 8.5% and 5.1%, respectively.<sup>23</sup> This difference in proportion of PE-subtypes may be explained by the fact that this Turkish study was acquired a different approach i.e. they collected data from randomly selected 17 provinces of Turkey, they didn't apply any scale to diagnose PE and collected data by asking both partners. Whereas our study was conducted in 1 purposively selected Tertiary care hospital, Bengali version of PEDT was applied for diagnosis of PE. In our study, 51.1% of the respondents were in age group of 20-40 years and 48.9% of them were in age group of 41-60 years. Although data on the prevalence of PE according to age are limited, there is a widespread belief that the prevalence of PE decreases with age. Data from the 2004 survey of more than 11,500 men in the United States, Germany and Italy showed that the prevalence of self-reported PE was constant across age groups ranging from 18 to 70 years.<sup>24</sup> These studies had limitations



because they did not follow men longitudinally to assess changes in IELT with age. In another study of the Italian Society of Andrology with a sample of 12,558 men attending the Andrology Prevention Week 2001, it was shown that men with PE were younger than those without, but after adjusting for concomitant erectile dysfunction the risk of PE significantly decreased with aging.<sup>26</sup> So, it appears that the belief that the prevalence decreases with age is not fully supported by current data and more study is needed. In our study, 52.1% of them studied up to primary and secondary level and 47.9% studied up to graduate and post-graduate level. Illiterate people were excluded. Almost two-thirds of the respondents (68.6%) were employed and rest of them were un-employed. Different studies in other countries reported mixed findings with regard to socio-demographic factors, such as educational and economic status.<sup>25</sup> In another study, it was found that men who are more educated had a slightly increased risk. It was also found that stress related to socioeconomic status also increase the risk for PE.<sup>26</sup> In our study, majority (74.5%) of the respondents resided in urban area and rest (25.5%) of them resided in rural area. Most of the respondents were Muslim (95%) and rest of them (5%) was found as Hindu. Data regarding the association between habitat and religion with PE is scarce. So more study needed regarding these issues. Though optimum care had been taken by the researcher, still there are some limitations. The study was conducted in one purposively selected hospital in one city of Bangladesh. So, there might be some selection bias which limits the generalization of the results of all PE patients of Bangladesh. Moreover, in this study, patients with unstable psychiatric illnesses, mental retardation, illiteracy were excluded. But, in these groups of patients there might have some PE patients. So, there was a probability of underestimation of PE prevalence.

## Conclusion

In this study, proportion of premature ejaculation was found 26.4% (74 out of 280 men) and the proportion of PE subtypes, namely, lifelong PE, acquired PE, natural variant PE, and premature-like ejaculatory dysfunction, were 20.3%, 24.3%, 25.7% and 29.7% respectively. Despite of a number of limitations, this study will provide a brief report on the area of sexual health and serve as a basis for further analytical epidemiological studies in this area.

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# Understanding autism spectrum disorder and its treatment options

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## Summary

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder with impairments in social communication and interaction, restricted interests, and repetitive behaviors. According to a recent study, ASD occurs in approximately sixteen out of every 1,000 children. Children with ASD often suffer from mental retardation, seizure disorder, and psychiatric disorders such as depression and anxiety. Early detection and intervention of this condition can significantly improve outcome, with about one third of persons with ASD achieving some degree of independent living. Current research links autism spectrum disorder to biological or neurological differences in the brain. Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) scans show abnormalities in the structure of the brain, with significant differences within the cerebellum, including the size and number of Purkinje cells. In some families there appears to be a pattern of autism or related disabilities, which suggests there may be a genetic basis to the disorder, although at this time no one gene has been directly linked to autism. There are three large categories of treatment for this disorder: behavioral modification and communication approaches, dietary and nutritional approaches, and complementary approaches. This review paper discusses all of these broad categories and the sub-categories associated with them.

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## **Introduction**

Autism spectrum disorder is a complex neurodevelopmental disorder with core features of difficulty with social communication and interaction, restricted interests, and repetitive behaviors. A number of other associated symptoms frequently coexist with autism. According to recent study in USA, 1 in 59 individuals is diagnosed with autism, making it more common than pediatric cancer, diabetes, and AIDS combined. It is four times more likely to strike boys than girls. In families with one child with autism, the risk of having another child with autism is 3-8%. Pairwise autism spectrum disorder concordance was 31% for dizygotic and 88% for monozygotic twins.<sup>1</sup>

## **Materials and methods**

Literature search was performed with the key words "Autism", "Autism Spectrum Disorder", "Treatment of Autism", "Brain changes in Autism". Representative and leading researches from last 15 years were included in the study.

## **Results and discussion**

We have summarized the findings under different representative headings and sub headings.

### **Autistic brain overview**

Autism research indicates that autism may be a disorder of the cortex area of the brain which controls reasoning, problem-solving, memory, voluntary movement and sensation.<sup>2</sup> Research results include the following findings:

**Brain growth:** The brain of some children with autism grows larger and develops faster than children experiencing normal brain development at around 12 months. The expansion occurs primarily in regions that process visual information. Brain volume overgrowth is linked to the emergence and severity of autistic social deficits.<sup>3,4</sup> **Brain structure:** The sizes of certain areas of the brain, such as the corpus callosum and amygdala, are different in people with autism than in unaffected people. The corpus callosum has smaller middle and back lobes and the amygdala is larger than the same brain areas in people with typical brain development. People with autism may have multiple brain structure differences.<sup>3,4</sup> **Brain function:** The autistic brain functions differently than an average brain. The structural differences in the brain, such as minicolumns (a vertical column through the cortical layers of the brain; neurons within the microcolumn receive common inputs, have common outputs, are interconnected, and may well constitute a fundamental computational unit of the cerebral cortex), may cause a person with autism to think, perceive and react to things differently than a person with typical brain development.<sup>5</sup>

### **Causes**

Currently autism is viewed as a multifactorial disorder. It is thought that neurologic abnormality causes the disorder, but the exact cause is unknown in most cases. Researchers suspect that a number of different genes that, when combined together, increase the risk of getting autism. Environmental factors in prenatal, neonatal and postnatal periods like gestational diabetes, neonatal hypoxia, exposure to air pollution, parental immigration or sensory/social deficits, all seem to play roles in causation.<sup>6</sup> In some children, autism is linked to an underlying medical condition. Examples include metabolic disorders like untreated phenylketonuria;<sup>7</sup> congenital infections like rubella, cytomegalovirus, and toxoplasmosis;<sup>8</sup> genetic disorders like fragile X syndrome, and tuberous sclerosis;<sup>9</sup> developmental brain abnormalities like microcephaly, macrocephaly, and cerebral dysgenesis;<sup>10</sup> and neurologic disorders acquired after birth like lead encephalopathy or bacterial meningitis. These medical disorders alone do not cause autism as most children with these conditions do not have autism. Environmental factors and exposures may interact with genetic factors to cause an increased risk of autism.<sup>11</sup>

## Diagnosis

**Parents' Observations:** Parents are often the first to notice that something is not right with their child, such as – unresponsive from birth, cry excessively, not make eye contact, focus obsessively on an object for a long period of time, become indifferent to others, lose imaginative play skills, do not respond to their name, and become uninterested in playing with other children.

**Initial evaluation:** Initial evaluation includes observational data and a developmental screening. In addition, several tools are commonly used to screen for autism, including the Checklist of Autism in Toddlers (CHAT) and the Comprehensive Autism Ratings Scale (CARS). CHAT assesses using a scoring mechanism of key items that splits results into three risk groups. CARS was designed to help differentiate children with autism from those with other developmental delays, such as intellectual disability.

Because there is no medical test or biomarker for autism, diagnosis is based on observation of the child's behavior, educational and psychological testing, and parent reporting. A team of specialists is usually involved in the diagnosis. The team may include a neurologist, psychiatrist, developmental pediatrician, psychologist, gastroenterologist, audiologist, speech therapist, occupational therapist, and other professionals. Usually the team members evaluate the child, assessing his or her strengths and weaknesses, and then explain the test results to parents.

## Treatment

There is no standard treatment for autism, and different professionals have different philosophies and practices in caring for their patients. A common strategy includes a specialist, who will present each type of treatment, give the pros and cons, and make recommendations based on published treatment guidelines and his or her own experience. The decision of which treatment to pursue is made with this specialist (with input from other members of the care team) and family members, but the decision is ultimately of the parents. The specialist should help parents to understand exactly what will be done and why, and what can be expected from the choices.

There is no cure for autism, nor is there a standard therapy that works for all people with autism. Different approaches work for different people. Accepted interventions may work for some and not for others. Most people with autism show developmental progress and respond to a combination of treatment and education. There is some evidence that the earlier behavioral, educational, speech, and occupational therapy is begun, the better is the long-term outcome.<sup>12</sup> Treatment strategies used in autism include behavioral, educational, biomedical, and complementary therapies. It is important to consider evidence-based interventions as much possible.

### *Applied Behavior Analysis (ABA)*

ABA is a well-developed scientific tool that focuses on the analysis, design, implementation, and evaluation of social and other environmental modifications to produce meaningful changes in a person's behavior. ABA is based on the fact that an individual's behavior is determined by past and current environmental events in association with their genetic endowment and physiological variables. ABA uses observation, measurement, and functional analysis of the relationship between environment and behavior and uses changes in environmental events, such as antecedent stimuli and consequences, to produce practical and significant changes in behavior. In case of autism, ABA focuses on treating the problems of the disorder by altering the individual's social and learning environments.<sup>13</sup>



Comprehensive ABA attempts to treat multiple developmental domains, such as cognitive, communicative, social, emotional, and adaptive functioning. Early intensive behavioral intervention is the preferred target to close the gap between the person's level of functioning and that of typically developing peers. These programs tend to range from 30-40 hours of treatment per week. Initially, treatment is typically provided in structured therapy sessions, as the client progresses treatment in different settings and in larger community is provided. Training family members and other caregivers to manage problem behavior and to interact with the individual with ASD in a therapeutic manner is a critical component of this treatment model.<sup>13</sup>

#### *ABA Approach: Discrete Trial Training*

It is a structured ABA technique that breaks down skills into small, "discrete" components. It consists of a series of distinct repeated lessons or trials taught one-to-one. This technique is usually implemented when the person is young, before the age of six. Each trial consists of a prior, a "directive" or request for the individual to perform an action; a behavior, or "response" from the person; and a consequence, a "reaction" from the therapist based upon the response of the person. Parent training is a necessary part of an effective program. The person's progress is closely monitored by the collection of data on the performance of each trial. After a skill has been mastered, another skill is introduced, and the mastered skill is placed on a maintenance schedule.<sup>14</sup>

#### *ABA Approach: Pivotal Response Therapy*

Pivotal response therapy (PRT) is a behavioral intervention therapy for autism. Pivotal response therapy is based on the belief that behavior connects primarily on two 'pivotal' behavioral skills, motivation and the ability to respond to multiple cues, and that development of these skills will result in overall behavioral improvements. Play environments are used to teach pivotal skills, such as turn-taking, communication, and language. Pivotal response training involves specific strategies such as clear instructions and questions presented by the therapist, child choice of stimuli (based on choices offered by the therapist), intervals of maintenance tasks (previously mastered tasks), direct reinforcement (the chosen stimuli is the reinforcer), reinforcement of reason for purposeful attempts at correct respond, and turn taking to allow modeling and appropriate pace of interaction.<sup>15</sup>

#### *ABA: Reciprocal Imitation Training*

Reciprocal imitation training was developed to teach spontaneous imitation skills to young children with autism in a play environment. This procedure includes unexpected simulation in which the therapist imitates actions and vocalizations of the child. It can increase children's social behaviors such as coordinated attention after reciprocal imitation training, suggesting that both the imitative and the spontaneous play could be taken on a social quality.<sup>16</sup>

#### *ABA: Self-management Technique*

Self-management has been developed as an additional option for teaching school-age children with autism to increase independence and generalization without increased reliance on a teacher or parent. Self-management typically involves some or all of the following components: self-evaluation of performance, self-monitoring, and self-delivery of reinforcement. Ideally, it includes teaching the child to monitor his/her own behavior in the absence of an adult. Study shows that the preschool-age students using self-management training learned new activities using favorite toys that typically required assisted play. Children were prompted to engage in new behaviors with the toys, and were asked to take a token whenever they displayed a variation in the target behavior.<sup>17</sup>



### *ABA: Video modeling*

Video modeling uses predictable and repeated presentations of target behaviors; however, these behaviors are presented in video format, thus reducing variations in model performance. Video modeling has been shown to improve various skills in individuals with autism, including conversational speech: verbal responding, helping behaviors, and purchasing skills. This medium could increase vocabulary, emotional understanding, attribute acquisition, and daily living skills. Video modeling interventions have used both self-as-model and other-as-model methods. In the first instance, individuals act as their own models, and the video is edited so that only desired behaviors are shown. The second and perhaps more essential method of video modeling employs recording other individuals, typically adults or siblings, performing target behaviors.<sup>18</sup>

### **Vitamins, minerals, and dietary interventions**

Claims regarding the efficacy of vitamins, minerals, or other nutrients in autism are not backed by definite scientific evidence in most cases, but parents and physicians have reported improvement in symptoms in autistic people who were given certain supplements, including vitamin B12, Vitamin D, Omega-3 fatty acid, Folic acid, Camel milk, Probiotics and digestive enzymes.<sup>19</sup> Some persons with autism have food sensitivities and food allergies and dietary management is important to in these cases to maintain nutrition and health. Another focus of dietary therapy is on problems with intestinal digestion and absorption of nutrients in foods suspected to be present in some individuals with autism. Some parents and professionals have reported improvements in symptoms of autism when diets eliminating suspect proteins, such as gluten (found in wheat flour), are consistently followed. However, there are no studies to confirm their effectiveness.<sup>19</sup>

### **Medications**

Medication does not treat the underlying neurologic problems associated with autism. Rather, medication is given to help manage behavioral manifestations of the disorder, such as hyperactivity, impulsivity, attention difficulties, and anxiety. In most cases, medication is given to lessen these problems so that the person can receive maximum benefit from behavioral and educational approaches. Medications used in autism are psychoactive, meaning they affect the brain. Those used most often include the following:

**Antipsychotic drugs:** Risperidone, Aripiprazole and some other atypical antipsychotics are successfully used in autism. These drugs have been found to reduce hyperactivity, repetitive behaviors, withdrawal, and aggression in some people with autism.<sup>20</sup>

**Antidepressants:** Selective serotonin reuptake inhibitors (SSRIs) are prescribed for the treatment of conditions often comorbid with autism such as depression, anxiety and obsessive-compulsive behaviors. But emerging evidence suggests not using these drugs.<sup>21</sup>

**Stimulants:** Stimulants used to treat attention deficit hyperactivity disorder (ADHD) may help some people with autism. These drugs work by increasing the person's ability to concentrate and pay attention and by reducing impulsivity and hyperactivity.<sup>22</sup>

**Anticonvulsant drugs:** Anticonvulsants are frequently used to manage seizures in people with autism. Anticonvulsants may also be used to stabilize mood and/or behavior.<sup>23</sup>

### **Repetitive transcranial magnetic stimulation (rTMS)**

Transcranial magnetic stimulation (TMS) is a noninvasive method to excite neurons in the brain: weak electric currents are induced in the tissue by rapidly changing magnetic fields.<sup>7</sup> This way, brain activity can be triggered with minimal discomfort, and the functionality of the circuitry and connectivity of the brain can be modified. The outer part of the brain is called the neocortex. Within the neocortex are groups of cells called minicolumns. These minicolumns are the smallest unit of cells capable of processing information. Ordinarily, minicolumns include relatively large cells, called neurons, which allow communication not only within an individual minicolumn but also among different parts of the brain. Minicolumns in people with autism are smaller and more numerous than normal. In addition, neurons within each minicolumn are reduced in size.

This may impair brain activities that require longer projections (e.g., language), whereas reinforce those that depend on shorter connections (e.g., mathematical manipulations). According to Casanova et al., the extra minicolumns with extra-small cells may explain the hypersensitivity of some autistic patients as well as their seizures. It is possible to increase the "insulation" surrounding minicolumns, thus lessening sensory overload and the likelihood of seizures.<sup>24</sup> According to Casanova et al., the "main property of these minicolumn cells and projections is that they stand at 90 degrees to surface of the cortex. They are the only cells that do so. Transcranial magnetic stimulation (TMS) could flip the magnetic field in the cortex, thus reinforcing the insulation around the minicolumns.<sup>24</sup>

### **Stem cell therapy**

Children with autism suffer from two major conditions: Hypoperfusion and Immune Dysregulation.<sup>25</sup> Hypoperfusion of the brain in autism: Children with autism have shown impaired blood flow (hypoperfusion) to the brain. Hypoperfusion may contribute to functional defects not only by inducing hypoxia (an oxygen deficit that prevents normal brain function) but also by allowing for abnormal metabolite or neurotransmitter accumulation. The areas affected by hypoperfusion seem to correlate with regions of the brain that are responsible for functionalities that are abnormal in autism. Hypothetically, if perfusion can be improved through the revitalization of blood vessels (angiogenesis), then this should also allow for metabolite clearance and restoration of functionality.<sup>25</sup>

### **Immune dysregulation in autism**

Successful neurodevelopment is contingent upon a normal balanced immune response. Children with autism have immune systems that do not function normally; instead an autoimmune response of the nervous system appears to prevail. Astrocytes (supportive brain cells) that normally play a critical role in regulating perfusion and protection against central nervous system infection, have the potential to cause damage to the host when functioning in an aberrant (i.e. auto-immune) manner. Autistic children often have continually suppressed immune systems and chronic inflammation. Immune dysregulation is also very apparent in gastrointestinal health.<sup>25</sup>

### **Rationale for using Stem Cells to treat autism**

The administration of CD34+ umbilical cord cells and mesenchymal cells were proposed as novel treatments for the two pathologies associated with autism – hypoperfusion to the brain and immune dysregulation. Using these two kinds of stem cells together may potentially heal both the brain and the gut. Treatment of hypoperfusion defect with umbilical cord blood CD34+ stem cells. Angiogenesis - the formation of collateral blood vessels - is believed to be fundamental in neurological recovery. A promising method of increasing angiogenesis into damaged areas is by administration of CD34+ stem cells.<sup>25</sup> Umbilical cord blood has highly active CD34+ cells that, following injection into a patient, should induce angiogenesis in areas of cerebral hypoperfusion. Consequently, improved blood flow and oxygen to the brain should also improve nervous system functioning.

### **Immune modulation by mesenchymal stem cells**

The treatment of immune dysregulation in autism is expected to profoundly influence neurological function. The ability of mesenchymal stem cells to suppress pathological immune responses (e.g. inflammation) and to stimulate hematopoiesis (blood cell regeneration) leads to the possibility that these cells may also be useful for treatment of the defect in T cell numbers associated with autism. The review by Ichim et al. suggests that allogeneic mesenchymal stem cells administered to suppress inflammation may be used without fear of immune-mediated rejection.<sup>25</sup>

## Conclusion

As of the information known by today, there is no cure for autism, nor is there a standard therapy that works for all people with autism. Different approaches work for different people. Accepted interventions may work for some and not for others. Different professionals, each with excellent credentials and experience, may disagree about what is the best approach for the child. An individualized treatment plan designed to meet his or her unique needs is essential.

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## **Ice and psychosis: a case report**

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### **Summary**

Ice use is getting popular day by day in Bangladesh. This is a case report of a young lady of mid-twenties from urban background whose family complained that she used to take ice but she denied any history of substance use. On mental state examination, her mood was euthymic but there was delusion of grandiosity, delusion of control, delusion of persecution and systematised delusion. Finding of Magnetic Resonance Imaging (MRI) of brain was normal. We should check for history of ice use when a person of young or early adult age presents with the symptoms of psychosis.

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## Introduction

Ice is crystal methamphetamine. It's stronger, more addictive and therefore has more harmful side effects than the powder form of methamphetamine known as speed. Ice usually comes as small chunky clear crystals that look like ice. It can also come as white or brownish crystal-like powder with a strong smell and bitter taste. Other names for ice are Crystal meth, shabu, crystal, glass etc.<sup>1</sup> It is generally smoked (the effect almost immediately) or injected (effect within 15 to 30 seconds). It is sometimes swallowed (15 to 20 minutes for the effects) or snorted (3 to 5 minutes for the effects).<sup>1</sup> There is no safe level of ice use. The effects of ice can last for up to 12 hours.<sup>2</sup> High doses of ice and frequent use may cause 'ice psychosis'. Ice psychosis usually disappears a few days after the person stops using ice,<sup>1</sup> or till one month.<sup>3</sup> Availability and use of ice is increasing in Bangladesh day by day.<sup>4</sup>

## Case study

A young lady of mid-twenties came to visit in the outpatient department of Psychiatry of a private medical college in Dhaka, Bangladesh. As she stated, she belonged to a well reputed and wealthy family. Her father was one of the owners of one large jute mill in Bangladesh. She got married at the age of sixteen with one of highly reputed business tycoons in Bangladesh. She gave birth to twins five months back. Regarding family history, she stated that her brother was one of the owners of a Bank in Bangladesh and her husband was the owner of a group of companies. On mental state examination, she was a very well groomed and dressed young lady of mid-twenties. Eye to eye contact was established and maintained. Rapport was established instantly and it was flawless during the session. There was no eccentric behaviour and she was very bold and confident in her conversation during the entire session. Her speech flow and quantity was normal and there was no abnormality or incoherence. Her mood was euthymic and affect was congruent. She had the belief that there was a microchip implanted in her chest wall possibly in the heart area. It was implanted when she went on cardiac arrest after the recent delivery of her baby. She believed that she was mentally sound. She denied any history of substance use. But her informants described a complete different scenario. According to the reliable informants, she had been using multiple substances for last four years. At first, she was taking yaba for one year. Then she started taking ice with her friends. For last one year she was paranoid. But since child-birth, her behaviours and thoughts became completely eccentric. She believed that she delivered twin babies, though she just gave birth of a boy. Her family was affluent but not like as she was describing. Even her father, brother and husband were not businessmen at all which indicated that she had delusion of grandiosity. She had the belief that she had a chip implanted in her body that could control her bowel and bladder, which indicate that she had delusion of control. All the routine investigations and MRI of brain were done. There was nothing significant in the investigation reports.

## Discussion

Psychotic symptoms and syndromes are frequently experienced among individuals who use methamphetamine, with recent estimates of up to approximately 40% of users affected.<sup>5</sup> Though transient in a large proportion of users, acute symptoms can include agitation, violence, and delusions, and may require management in an inpatient psychiatric or other crisis intervention setting. In a subset of individuals, psychosis can recur and persist and may be difficult to distinguish from a primary psychotic disorder such as schizophrenia.<sup>6</sup> Differential diagnosis depends with careful assessment of the temporal relationship of symptoms to methamphetamine use, aided by state-of-the art psycho-diagnostic assessment instruments and use of objective indicators of recent substance use (i.e., urine toxicology assays), coupled with collateral clinical data gathered from the family or others close to the individual, diagnostic accuracy can be optimized and the individual can be appropriately matched to a plan of treatment.<sup>7</sup>

A methamphetamine-induced psychotic disorder is diagnosed when the observed psychotic symptoms exceed the known and expected effects of intoxication or withdrawal from methamphetamine. Dose-response relationship between methamphetamine use and psychotic symptoms showed with a five-fold

increase in the odds of psychotic symptoms in the presence of methamphetamine use.<sup>5</sup> Individuals with underlying primary psychotic disorders have substantially higher rates of illicit drug use, including amphetamines.<sup>7</sup> Two competing theories have been posited to explain the robust finding that psychosis can become chronic and persistent among methamphetamine users: either a pre-existing schizophrenia may be unmasked or triggered by methamphetamine use, or methamphetamine psychosis may share a very similar clinical course to that of schizophrenia. While the latter is supported largely by Japanese studies, in which investigators described a prolonged methamphetamine psychosis observed even among individuals without psychiatric risk factors or history, the notion of “latent schizophrenia,” expressed in response to methamphetamine use as a triggering event, is increasingly recognized as a Western theory.<sup>8</sup> A third, more recently proposed integrated theory contends that methamphetamine psychosis and primary psychosis are not distinct diagnostic entities, but rather fall along a continuum of psychosis. According to this model, the methamphetamine-psychosis association is understood within the framework of a stress-vulnerability paradigm; as such, the potential for an individual to develop psychosis both in the context and absence of methamphetamine use (for those with prolonged psychotic symptoms following cessation) is a function of one’s vulnerability.<sup>9</sup> Ice use is getting popular among the rich people in Bangladesh. Recently in Bangladesh, few factories were discovered producing this illicit drug.<sup>4,10</sup> Our case can be regarded as an example of psychosis which is clearly associated with prolonged ice use.

## Conclusion

Prolonged ice use can lead to psychosis. So, when a patient of young or early adult age comes with the presentation of psychosis, we should look for the history of ice use and plan the management accordingly.

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