



Profile for People with Intellectual Disabilities in the Dhaka and Pabna regions of Bangladesh

Kabirul Islam¹, Mohammad Sarowar Uddin¹, Mohammad Safiqul Islam¹, Shafayet Ahmed Siddiqui¹, Md Saddam Hussain¹, Md Shalahuddin Millat^{1*}

Department of Pharmacy, Noakhali Science and Technology University, Noakhali-3814, Bangladesh.

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ABSTRACT

Intellectual disability (ID) is a mental ailment described by noteworthy limitations both in intellectual working and adaptive manners covering a range of everyday social and practical skills. About 2–3% of the general population globally are affected by ID. The objectives of this study was to explore the prevalence, etiology, abnormal behaviors, diagnosis, and treatment received of people with ID in Dhaka and Pabna regions of Bangladesh. This questionnaire-based cross-sectional study was conducted on 200 intellectually disabled admitted patients in three Bangladeshi psychiatric hospitals from June 2018 to November 2019. Patients and their guardians (in which cases patients were not capable to communicate) were directly questioned for collecting data. Males (76 %) were highly prevalent to ID than female (24 %) in Bangladesh ancestry. The age range was from 10 years to maximum 30 years. Unmarried peoples were highly dominant to ID than married peoples. Genetic (78%) was the most common cause of ID. Approximately, 80% of people with ID were used to hitting others. Sleep problem (44%) was the most frequently occurring associated disorders in people with ID. Blood test (88%) and interview with guardians (88%) were the most well-known methods for the diagnosis of ID while the most commonly used medicament was antipsychotics (86%) for ID in Bangladesh. The present study reflected the current scenario of prevalence, etiology, abnormal behaviors, associated illness, diagnosis, and treatment approaches of ID in Bangladesh.

Keywords: ID, prevalence, etiology, abnormal behaviors, diagnosis, treatment

INTRODUCTION

Intellectual disability (ID) is a type of mental sickness which is identified by a number of limitations both in adaptive behaviours and intellectual operational like reasoning, learning, problem solving etc. (American Psychiatric Association, 2013; Maulik et al., 2011). ID originates before the age of 18 (American Psychiatric Association, 2013), which includes a range of daily societal and practical abilities. It can be considered as mild, moderate, severe and profound. The prevalence of ID vary from 1% to 3% globally of which 75-90% of the affected individuals belong to mild intellectual disability (Harris, 2006; Maulik et al., 2011). Another study revealed that the prevalence of ID lies in 2-3% (Daily, 2000). According to Society for the Welfare of Intellectually Disabled-Bangladesh (SWID-Bangladesh) annual report 2017, there are 1,16,771 intellectually disabled people in Bangladesh (SWID-Bangladesh, 2017). This is more common

mental disorder in low to middle income countries (Wilson, 1990). People who are suffering from ID have a shorter life expectancy (Webb, 1999), higher mortality rate (Lennox, 1997) and elevated level of unsatisfied health desires (Cooney et al., 2006).

Intellectual disability can be induced by genetic or environmental factors (Kaufman, 2010). However, there is no specific cause of ID in 60% cases (Rauch et al., 2006). Ecological exposure to specific viruses, teratogens and radiation may cause ID (Kaufman, 2010). Genetic defects account for 45% of ID causes and may be caused by mutations in neurodevelopment (Batshaw, 2013). Down syndrome, fetal alcohol spectrum disorder, and velocardiofacial syndrome are the ultimate communal genetic features of ID (Daily, 2000). The causes of intellectual disabilities are categorised as prenatal, perinatal and postnatal. Prenatal causes include Down syndrome, fragile X syndrome, inherent fault of metabolism, brain deformity, maternal ailment and environmental impacts (alcohol, other drugs, toxins) while perinatal causes include labor and delivery associated proceedings (prominent to neonatal encephalopathy), anoxia at delivery etc. Again postnatal causes contain hypoxic ischemic wound, traumatic brain impairment, infections, demyelinating complaints, seizure ailments, severe and chronic societal dispossession, toxic metabolic syndrome and alcoholism etc. (Allison, 2009; Scior, 2011).

*Corresponding Author Email: millat404pharma@gmail.com

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Abnormal or aggressive behaviours are common in persons with ID and can create problems in everyday life. The common forms of aggressive behaviours are hitting, pushing, threatening gesture, scratching, kicking, pulling hair, pinching, biting, choking with others and verbal exploitation (e.g. revilement, screaming and name calling) (Sjgafoos, 1994). This type of behaviours are often exist for long time and more than one may be existed in the same individual (Stacey et al., 2012). Several study have revealed the type, prevalence, nature and extent of abnormal behaviour. These studies indicated that the prevalence of aggressive behaviours ranged from 8 to 17% among people living in institutions with intellectual disabilities (Baumeister, 1976; Griffin et al., 1986; Maisto, 1978; Sjgafoos, 1994). A survey among the population with intellectual disabilities in Queensland reported that the frequency of aggressive behaviours was greater (35%) amongst institutionalized individuals than people living in home (17%) (Sjgafoos, 1994).

ID is considered as one of the most vital causes for seizures in the general communal (Van Blarikom, 2006). On the other hand, similar to epilepsy, ID is still predicted to be inherently linked with autism, even though in recent studies there is a development headed lower than 50% of ID in autistic individuals (Dawson, 2007). Other studies revealed that possibility of epilepsy was adversely interrelated with IQ (Bartak, 1976; Jacobson, 1983). In recent times, a better frequency of seizures was commenced in personnel with ID (Hrdlicka, 2004; Mouridsen, 1999).

Three criteria are set by American Association on Intellectual and Developmental Disabilities to diagnose the ID. Various remarkable limitations in adaptive behaviors (communication, interpersonal skills, self-help skills and more) in different environment or significant limitations in mental abilities like intellectual functioning which become disclose in childhood or adolescence (Siperstein, 2009). Assessment of intelligent quotient (IQ) and adaptive behaviours are the common forms of diagnosis for ID. People with ID have an IQ < 70 in general (Sundaram et al., 2008).

ID is more precisely considered as disability rather than a malady. People with ID get support throughout the world from many agencies and programs (Hodapp, 2006). There are four comprehensive areas of mediation including psychosocial treatments, behavioural managements, cognitive-behavioural dealings, and family-oriented tactics. Psychosocial treatments are proposed primarily for playschool children as this is the best time for mediation (Matson, 2007). Though no exact medication is considered for ID, but many individuals with developmental disabilities have more medical difficulties and may possibly be recommended by a number of medications. For instance, antipsychotics or mood stabilizers may be suggested for autistic children having progressive delay to help their manners (Hay et al., 2007). Benzodiazepine is a psychotropic medications used in individuals with ID needs monitoring and vigilance as side effects occur usually (Kalachnik, 2002). Society for the Welfare of the Intellectually Disabled, Bangladesh (SWID-Bangladesh) is working to aid the people with ID throughout the country. We commenced the current study in order to examine the socio-demographic profiles, etiology, associated complications,

abnormal behaviour, diagnostic, and treatment pattern for ID patients in Dhaka and Pabna regions of Bangladeshi.

METHODOLOGY

Study Participants and Study Area: In the present study, 200 intellectually disable patients (152 male and 48 female) were enrolled from three mental hospitals of Bangladesh (Mental Hospital, Pabna; National Institute of Mental Health & Hospital, Dhaka; National Institute of Neuroscience & Hospital, Dhaka) during June 2018 to November 2019. According to The Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), proper diagnosis was confirmed by at least two skilled senior psychiatrists which was accomplished by reviewing the available information (i.e., personal history, hospital record, and family-history report). Before data assortment, every single participants and their guardians were evidently informed about the aim of the study and a written consensus was taken from each of the entities. The ethics board of Noakhali Science and Technology University (NSTU) revised and approved the protocol regarding this study (NSTU/Ethics/2018/367) and this study was also ethically allowed by the ethical approval committee of these respective hospitals.

Study Design and Formulation of Questionnaire: This cross-sectional study was carried out via both qualitative and quantifiable records. The questionnaire was settled after a comprehensive analysis of related literature. Although some unique questions were established in accordance with the research objectives. The questionnaire was made up of six segments with 32 questions. Segment A consisted of questions on socio-demographic information of the patients. Segment B consisted of etiology of ID. Section C was about the anomalous behavior of the patients. Associated ailments with intellectually disabled persons were considered in Section D. Segment E apprehended diagnosis pattern while section F contained the treatment tactics for persons with ID in Bangladesh. The questionnaire was designated in English language and translated in Bengali when interviewed the volunteer.

Data Assortment: Primary records were collected from the target individuals during last one year from June 2018 to November 2019. The questions of questionnaire were asked to the certain participants with a written consensus form that clarified the goal of the research and assured them about data confidentiality. Most of the cases, the patients were unable to communicate and the questions were asked to their guardians.

Data Processing and Statistical Analysis: The collected data were inserted into a Microsoft Excel spread sheet and disseminated for analysis. The survey results were analyzed by descriptive method using means and percentage. Microsoft Excel software was applied for records analysis and for chart, graph and diagram preparation.

RESULTS

Socio-demographic Details of the Individuals

The study was conducted on 200 participants where 152 participants were male and 48 participants were female. Table 1 represents the socio-demographic data of the individuals. This socio-demographic information includes ages, marital status, educational status and region of the patients.

Table 1 Socio-Demographic Details

Variables	Male n = 152	Female n = 48	Total n = 200
Age			
10-15 year	24 (16%)	8 (17%)	32(16%)
16-20 year	40 (26%)	12(25%)	52(26%)
21-25 year	64 (42%)	16(33%)	80(40%)
26-30 year	24 (16%)	12 (25%)	36(18%)
Marital Status			
Married	12 (8%)	12(25%)	24 (12%)
Unmarried	140 (92%)	36(75%)	176 (88%)
Educational status			
No education	80 (53%)	12(25%)	92 (46%)
Primary	60 (39%)	32 (67%)	92 (46%)
SSC	12 (8%)	4 (8%)	16 (8%)
HSC	0 (0%)	0 (0%)	0 (0%)
Above HSC	0 (0%)	0 (0%)	0 (0%)
Living area			
Rural	88 (58%)	36 (75%)	124 (62%)
Urban	64 (42%)	12 (25%)	76 (38%)

Etiology of ID

The causes of ID are shown in Table 2. Among various etiological factors, hereditary was the most prominent (78%) cause of ID whereas only 6% of female developed intellectual disability during their child birth. Again, 67% of the patient was triggered by psychological tremor while 57% was affected by previous illness and lastly 6% of ID was initiated by drug's toxic effects.

Table 2 Etiology of Intellectual disability

Types	Male n=152	Female n=48	Total N=200
Psychological tremor	110 (72%)	23 (48%)	133 (67%)
Previous illness	95 (63%)	18 (38%)	113 (57%)
Genetic	126 (83%)	29 (60%)	155 (78%)
During child birth	0 (0%)	3 (6%)	3 (2%)
Drug toxic effect	9 (6%)	3 (6%)	12 (6%)

Abnormal Behaviors of the Participants:

The abnormal behaviors of the participants are represented in Table 3. Among the patients, 80% hit others and this feature was higher in male (87%) than female (58%). Stereotype movement was the second common abnormal manner which was seen in 70% of participants. Moreover, 66% of patients had verbal abuse problem while 60% belonged to self-injury nature. The self-injury nature was higher in male (66%) than female (42%). Many other anomalous behaviors were observed in the participants. The same patient possessed one or more than one abnormal behaviors and for this reason percentage exceeded above 100%.

Table 3 Abnormal Behaviors of Intellectually Disabled Person

Types	Male (n = 152)	Female (n = 48)	Total (n = 200)
Injures others	132 (87%)	28 (58%)	160 (80%)
Pushes others	36 (24%)	12 (25%)	48 (24%)
Self-injury	100 (66%)	20 (42%)	120 (60%)
Threatening gestures	44 (29%)	16 (33%)	60 (30%)
Stereotyped movements	112 (74%)	28 (58%)	140 (70%)
Verbal misuse	100 (66%)	32 (67%)	132 (66%)
Throws objects at others	32 (21%)	8 (17%)	40 (20%)
Scratches others	16 (11%)	8 (17%)	24 (12%)
Kicks others	52 (34%)	12 (25%)	64 (32%)
Bites others	16 (11%)	16 (33%)	32 (16%)
Spits on others	12 (8%)	8 (17%)	20 (10%)
Property destruction	60 (39%)	8 (17%)	68 (34%)
Self-talking/laughing	20 (13%)	8 (17%)	28 (14%)

Associated Disorders with ID:

Table 4 implies the associated illness of the patients with intellectual disabilities. Among all associated disorders, sleep problem (44%) was the most common diseases whereas others were sensory impairment 22%, epilepsy 28%, dementia 37%, schizophrenia 41%, behavior impairment 32%, bipolar disorder 36%, hearing problem 10% and obesity 7%. The identical participant had one or more than one associated ailments and that's why percentage overdid above 100%.

Table 4 Disorders Associated with Intellectually Disabled Person

Types	Male n = 152	Female n = 48	Total n = 200
Sensory downfall	32 (21%)	12 (25%)	44 (22%)
Epilepsy	40 (26%)	16 (33%)	56 (28%)
Dementia	46 (30%)	28 (58%)	74 (37%)
Sleep problem	56 (37%)	32 (21%)	88 (44%)
Schizophrenia	62 (41%)	20 (42%)	82 (41%)
Behaviour depression	48 (32%)	16 (33%)	64 (32%)
Bipolar disease	60 (39%)	12 (25%)	72 (36%)
Hearing difficulty	16 (11%)	4 (8%)	20 (10%)
Obsessions	12 (8%)	2 (4%)	14 (7%)

Diagnosis of Intellectual Disability:

The diagnosis patterns for people with ID in Bangladesh are characterized in Table 5. Among all techniques, interviews with the guardians (88%) and blood test (88%) were the most preference method for ID diagnosis in Bangladesh. Again, 24% of ID patients were diagnosed by EEG while 54% was confirmed by urine test. Furthermore, 32% of the participants were identified by testing their intelligence. The lowest preference methods for diagnosis of ID were observation of the children (10%) and electrocardiogram (10%) respectively.

Table 6 denotes the treatment approaches for people with intellectual disabilities in Bangladesh. Among all treatment patterns, the treatment with antipsychotics was the most common (86%) principle of treatments. Sedatives (80%) and antidepressants (74%) were also in the top list for the treatment of ID. However, herbal, unani and ayurvedic were hardly preferred for the treatment of intellectual disability.

Treatment of Intellectual Disability:

Table 5 Patient Profiles Undergoing ID-linked diagnostic tests

Type	Male n = 152	Female n = 48	Total n = 200
Guardian's Interviews	144 (95%)	32 (67%)	176 (88%)
EEG (Electroencephalogram)	36 (24%)	12 (25%)	48(24%)
ECG (Electrocardiogram)	16 (11%)	4 (8%)	20 (10%)
Blood test	148 (97%)	28 (58%)	176 (88%)
Urine test	80 (53%)	28 (58%)	108 (54%)
Testing of intelligence	44 (29%)	20 (42%)	64 (32%)
Observation of the child	12 (8%)	8 (17%)	20 (10%)

Table 6 Profiles of Patients Receiving ID-Linked Therapy

Type	Male n=152	Female n=48	Total n=200
Herbal	8 (5%)	4 (8%)	12 (6%)
Unani	4 (3%)	8 (17%)	12 (6%)
Ayurvedic	12 (8%)	0 (0%)	12 (6%)
Homeopathy	32 (21%)	12 (25%)	44 (22%)
Speech therapy	32 (21%)	4 (8%)	36 (18%)
Physical therapy	20 (13%)	4 (8%)	24 (12%)
Family counselling	120 (79%)	28 (58%)	148 (74%)
Antipsychotics	152 (100%)	20 (42%)	172 (86%)
Sedatives	136 (89%)	24 (50%)	160 (80%)
Antidepressants	124 (82%)	24 (50%)	148 (74%)
Mood stabilizers	120 (79%)	20 (42%)	140 (70%)

DISCUSSION

The increasing prevalence of intellectual disability (ID) has become a worldwide public health concern, and the frequency of ID is extremely variable depending on the age and sex of the individuals, provincial, socioeconomic, racial and traditional features (Karam et al., 2015; Kaufman, 2010). The present study was conducted to estimate the socio-demographic details, etiology, abnormal behaviors, associated disorders, diagnosis, and treatment patterns for individuals with ID in Bangladesh. This study was for the first time in Bangladesh to analyze about intellectually disabled persons. We found that among 200 participants, the number of male was 152 (76%) and female was 48 (24%). So, we can claim that the prevalence of ID was higher in male (76%) than female (24%). A population based study on ID in Brazil revealed that the prevalence of ID in male is 52% and in female 48% (Hodapp, 2006). In the view of this study, the association between age and ID was higher at old stage. We found that individuals with ID had higher incidence at the age

range 21-25 years (male 42% and female 33%) while this prevalence was lower at the age range 10-15 years (male 16% and female 17%). A study in Scotland in people with ID revealed the higher occurrence of ID at old age (Hughes-McCormack et al., 2018). We also found that, unmarried people with ID had high frequency of ID (male 92% and female 75%) than married people (male 8% and female 25%). The study also provided the information about the regional status of the people with ID. People living in the rural or territory area had higher prevalence of ID (male 58% and female 75%) than people living in urban area (male 42% and female 25%). Again, educational status is also important factor to be considered for ID people. We observed that people with HSC or above HSC had no ID while people with no education (male 53% and female 25%) or primary education (male 39% and female 67%) had high prevalence of ID. This give a clear message that people with no education or primary education are highly susceptible for ID in Bangladesh descent.

Though the exact causes of ID is unidentified but genetic, mental shock, drug toxic effect and previous illness (Down sickness, Williams disorder, Fragile X disease, Moebius sequence, Noonan's disease, Tuberous sclerosis, Attention deficit hypersensitivity disorder) are considered to be responsible for ID (Karam et al., 2015; Kaufman, 2010). In our current study, we found that genetic was the most prevalent cause of ID (78%). A study disclosed that genetic deficits contribute to 45% of ID (Batshaw, 2013). Several study on ID revealed that genetic causes are attributable from 17% to 50% in case of ID (Kaufman, 2010; Karam et al., 2015; Moeschler, 2006). On the other hand, psychological tremor (67%), previous illness (57%) and drug toxic effect (6%) also showed increasing development of ID in Bangladesh.

Persons with ID were considerably stated by more boundaries in their everyday doings due to extensive health complications compared with healthy individuals (Karam et al., 2015). The abnormal or aggressive behaviors are common in people with ID and create problem in everyday life (Sjgafoos et al., 1994). In our study, we found that 80% of people with ID were used to hitting others and this abnormal behaviour was higher in male (87%) than female (58%). Other abnormal behaviours found in this study were stereotype movements (70%), verbal abuse (66%), self-injury (60%), property destruction (34%), threatening gesture (30%), kicking (32%), pushing (24%), throwing objects (20%), biting (16%), self-talking or laughing (14%), scratching (12%) and spiting (10%). We also found that, more than one or multiple abnormal behaviours were present in each participants. A survey among the population with intellectual disabilities in Queensland reported that 68% people hit others, 64% push others, 59% threat others and 58% had verbal abuse. This survey also revealed that, the frequency of aggressive behaviours was 35% among institutionalized personnel when 17% was in persons living at home (Sjgafoos et al., 1994).

A previous meta-analysis stated that epilepsy was predominant in autistic individuals with ID which was approximately 21.4% (Amiet et al., 2008). So, it is eminent that epilepsy develops more

commonly in persons with ID than in the general people. The incidence frequency of epilepsy in personnel with ID rises with the severity of the ID and stated in the literature which differs from 16.1% to above 50% (Van Blarikom, 2006). Sleep difficulties can be linked with decline in day deeds which increase puzzling behaviors throughout the day in both kids and adults with ID (Brylewski, 1999; Wiggs, 1996). Our present study stated that, sleep problem (44%) was the most common associated disorders which occurred more frequently in people with ID in Bangladesh. Although other concomitant diseases including; sensory downfall, epilepsy, psychiatric disorder, behaviour impairment, bipolar disorder, hearing problem and obesity etc. were present in Bangladeshi ID patients.

The American Association on Intellectual and Developmental Disabilities and the American Psychiatric Association (Diagnostic and Statistical Manual of Mental Disorders; DSM-IV) provided three criteria which must be followed for diagnosis of ID. Although our present study revealed that, blood test (88%) and interview with the guardians (88%) were the most established method of diagnosis for ID in our country.

Several studies signifying that, psychosocial intrusions diminish challenging behaviours (CBs) in individuals with ID (Harvey et al., 2009; Heyvaert, 2010; Luyben, 2009; Neidert et al., 2010). Serious health concerns may be caused due to the side effects of psychotropic medications and the absence of strong practical evidence that efficiently lessen CBs (Antonacci, 2008; Matson, 2009; Tyrer et al., 2008). Though our current study stated that, antipsychotics (86%) was highly established treatment technique for people with ID in Bangladesh. The additional treatment approaches were sedatives (80%), family counselling (74%), antidepressants (74%) and mood stabilizers (70%). The unani, herbal and ayurvedic were less frequently used for the treatment of ID in Bangladesh.

However, the constraints of the research was lesser sample size that did not represent the whole population of the country, the sample size was not scientifically selected, the quality of data was totally dependent upon the interviewer and there was no comparison with non-ID people. Despite these limitation, we become successful to find out the prevalence, etiology, abnormal behaviours, diagnosis and treatment approaches for people with ID in Bangladesh viewpoint. We hope that these findings will be helpful in further study in this arena.

CONCLUSION

Though mental ailment is mostly ignored in Bangladesh, but a great number of personnel are suffering from several types of mental sickness. Intellectual disability is a mental disorder which is highly prevalent in developing countries. Our current study reflects the up-to-date scenario of people with ID in Bangladesh. This study reveals multifactorial information categorized as socio-demographic information of the patients, etiology of intellectual disability, abnormal behaviour of the patients, associated diseases with intellectual disability, diagnosis and treatment tactics for people with ID in Bangladesh which will be co-operative to progress further studies.

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