

Distribution of IQ among People Screened by Wechsler Abbreviated Scale of Intelligence (WASI) in a Tertiary Care Hospital, Bangladesh

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Received: May 11, 2017; Published: May 25, 2017

Abstract

Intellectual Disability (ID) is one of the important neuro developmental disorders. Recent research mention the prevalence is 0.05 to 1.55%. Psychometric evaluation is an important step of managing the morbidity and Wechsler Abbreviated Scale of Intelligence (WASI) is a shorter measure used in clinical setup. Up-to-date there is scarcity of local data regarding distribution of IQ among Intellectual Disability (ID) patients. This cross-sectional study reviewed 03 years Wechsler Abbreviated Scale of Intelligence (WASI) assessment conducted in the Department of Psychiatry, Bangabandhu Sheikh Mujib Medical University (BSMMU). The IQ evaluation was done by social worker and the Clinical psychologist. The assessment report contains the age, sex, address, IQ score of the patient and the research team reviewed these variables thoroughly. It was found that, among 565 referred patients 80.9% (457) were of child adolescent age group and 19.1% (108) were referred in adult aged. Among them male was 62.7% (354) and female was 37.3% (211).

Though there is eight different administrative divisions or zone in Bangladesh, most of the patients (91%) came from two divisions (Dhaka and Chittagong). Reviewing IQ score, 62.1% (351) of them equivalent to Intellectual Disability (ID) and 37.9% (214) are normal. There was no severe or profound variety of Intellectual Disability. This study unfolded the existing picture of severity pattern among Intellectual Disability (ID) patients in Bangladesh. Further broad based study needed which could be representative of national picture.

Keywords: Intellectual Disability; Wechsler Scale; IQ; Bangladesh

Introduction

Intellectual Disability (ID) is one of the neurodevelopmental disorders characterized by deficit in general mental abilities, such as reasoning, problem solving, planning, abstract thinking, judgment, academic learning, and learning from experience [1]. Recent meta-analysis found that the prevalence estimates 0.05 to 1.55% [2]. In all case of suspected Intellectual Disability, IQ assessment is mandatory along with history and physical examination [3]. There are various types of IQ tests and among them widely used are: Wechsler Intelligence Scale for Children (WISC), Stanford Binet Intelligence Test and Wechsler Abbreviated Scale of Intelligence (WASI) [3]. In clinical, psycho educational and research settings WASI is a short and reliable measure. The scale is also linked with Wechsler Intelligence Scale for Children- Third edition (WISC-III) and Wechsler Adult Intelligence Scale-Third edition (WAIS- III) [4]. Bangladesh is densely populated country with dynamic progression in health sector [5,6]. But still there is scarcity of local evidence about the pattern of severity among mental retardation patients. The study objected to see the distribution of severity among patients who comes in the department of psychiatry, of a tertiary care hospital for their impairment and went through IQ assessment by WASI. It also intended to see the socio demographic variables that available in the IQ report form.

The study result would act as a baseline data for ID patients and would open the options to improve the services status.

Materials and Methods

This cross-sectional study was conducted in the department of Psychiatry, Bangabandhu Sheikh Mujib Medical University (BSMMU). The study reviewed 03 year’s (2014 - 2016) Wechsler Abbreviated Scale of Intelligence (WASI) test report. There are four subtests of this scale - Vocabulary, Block Designing, Similarities and Matrix reasoning and it can be applied from ages 06 through 89 years [4]. Clinicians usually sent patients from inpatient and outpatient department to “Psychotherapy wing” for WASI evaluation to support or exclude diagnosis of ID. The evaluation procedure is supervised by Professor of Psychotherapy and coordinated by Clinical psychologist. WASI evaluation done by trained professional group that consists of Social Worker, trainee students of Clinical Psychology (Masters). Each of the members is trained on applying Wechsler Abbreviated Scale of Intelligence (WASI). The cutoff value of IQ for Intellectual Disability is < 70. The mild variety is 55 - 69 and moderate variety is < 55. The sub categories of Normal score are as follows: High average, Average, Low average and Borderline [4]. Presence of patient’s mother or personnel on charge of the patient is mandatory during assessment. Patient’s caregivers come to the psychotherapy wing for registration and appointment. Total 575 IQ report form found and among them 10 were excluded from the study due to incomplete information to generate IQ score. The remaining 565 WASI report form was rechecked with the help of “Wechsler Abbreviated Scale of Intelligence (WASI) Manual” to detect any mismatch with previous results [4]. Then extracted information was analyzed by SPSS 16 version. As the study reviewed only the previously performed IQ test reports anonymously formal institutional review board permission was waived and every aspect of ethical issues was duly maintained.

Results

The socio demographic data revealed the male gender and Dhaka city habitant preponderance (Table 1). It indicated higher referral from Dhaka division which is the capital city (Table 1, Figure 2). Among the respondents, ID was found in 62.1% and rests were in the “Normal” ranges according to IQ score (Table 2). Among the Intellectual Disability (n = 351), 71% (249) were tested in the child & adolescence age and 75% was found to have mild form of ID (Figure 1). The residence of 96% of ID patients resides in Dhaka and Chittagong (Figure 2 and 3). The subcategories of normal IQ report (n = 214) revealed that 87% of them are “Borderline” to “Low average” IQ score and 13% are “Average” to “High average” IQ score (Table 2).

Variables	Frequency (n = 565)	Percentage (%)
Age		
Children	144	25.5
Adolescent	313	55.4
Adult	108	19.1
Sex		
Male	354	62.7
Female	211	37.3
Residence		
Dhaka	438	77.5
Chittagong	71	12.6
Mymensingh	16	2.8
Rajshahi	12	2.1
Khulna	12	2.1
Barisal	12	2.1
Rangpur	3	0.5
Sylhet	1	0.2

Table 1: Socio demographic characteristics of patients screened by WASI.

IQ score	Total Population n = 565 (%)
Normal	214 (37.9)
High average	01
Average	27
Below average	77
Borderline	109
Intellectual Disability	351 (62.1)
Mild	263
Moderate	88

Table 2: Distribution of IQ score screened by WASI.

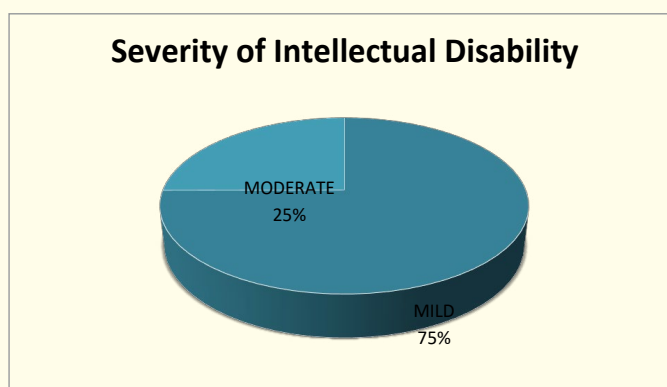


Figure 1: Pattern of severity among intellectual disability patients (n = 351) screened by WASI.

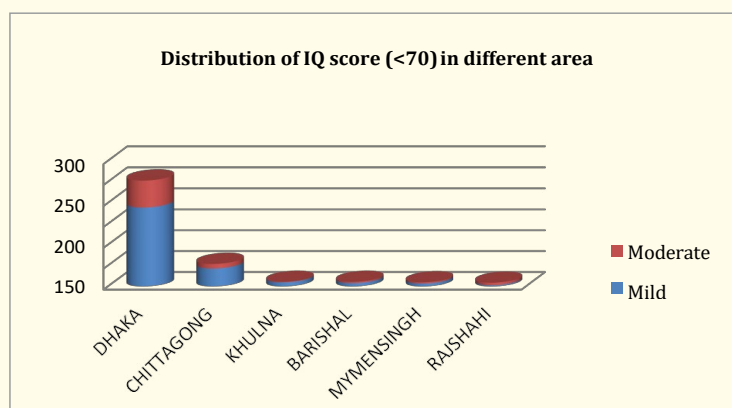


Figure 2: Distribution of IQ score according to eight different divisions of country (the Y axis indicates the number of ID patients and X axis indicates the residence of the patients, the two color of bar indicates mild and moderate variety of Intellectual Disability).



Figure 3: Location of all eight administrative zones (Divisions) of Bangladesh (Eight different colors indicates the individual division).

Discussion

It was aimed to look into the performed IQ reports those were referred to undergo IQ assessment based on clinical assessment in a tertiary care hospital. In three-year duration among 565 referred patients 351 patients were found to have ID and among the ID patients most were children and adolescent age group, 102 were of adult age group. That strongly suggests delayed referral or resource constrain for early detection of ID in Bangladesh [7]. The male seems suffers higher than female regardless age group which matches the global trend [3,8]. Bulk of the patient's residence was in capital city, Dhaka and port city, Chittagong. Though the average distance from Dhaka to other 7 divisions (Mymensingh, Sylhet, Rangpur, Rajshahi, Khulna and Barishal) is almost similar, patients from those zones were only 4% [9,10] (Figure 3). From the updated data, those zones still lack the mental health professionals to evaluate neuro developmental disorders and about 50% of total population of Bangladesh resides in those areas [8,9]. The findings suggest that half of our population still out of reach for evaluating intelligence by tools like WASI [9]. Previous study conducted by Uddin et al, supports poor mental health coverage in Bangladesh even among the physicians [6]. Among the ID patients, most of them were mild severity which rightly supports existing research evidence across the globe [3]. No severe or profound variety of mental retardation found which probably due to ignorance and unawareness of patient's care givers or lack of resource in community level to identify and proper referral [7].

Conclusion

This was probably the first exploration ever to explore the IQ pattern among clinical population which matches the global data. The WASI needs to be culturally adapted and validated here in Bangladesh. Though the data extracted from limited sample, it provided a baseline evidence for the researchers and baseline situation for policy makers. Further broad based research is needed to observe representative situation as well as to improve the services status for the ID patients of the country.

Acknowledgement

Authors express their gratitude to Mr Kabir M F Zaman, Social Worker, Department of Psychiatry, Bangabandhu Sheikh Mujib Medical University, for the excellent assistance during the study.

Funding

It's a self-funded study.

Conflict of Interest

None.

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Volume 3 Issue 5 May 2017

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