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RESEARCH ARTICLE

Prevalence of Dyslexia in Primary School in Dhaka: Its Effects on Children's Academic and Social Life

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Abstract

Like many children all over the world, many children struggle to learn to read in Bangladesh. Dyslexia is one of the major causes of reading disabilities among children. Though there is debate about the construct of dyslexia, its origin and remedy, there is so much evidence to support that dyslexia exist. Unfortunately, this reading disability is widely unknown in our education arena. Data on prevalence of dyslexia are important in developing policies in the field of special education. Present study is a cross-sectional study aimed at determining the prevalence of dyslexia in the primary school students in 4th grade of Mohammad area in Dhaka, Bangladesh. The sample of 133 students (54boys and 57 girls) was taken from 4th grade students of three primary schools with age between 10-12 years. Bangor Dyslexia Test (Miles, 1997), Raven's Progressive Metrices (Raven, Court & Raven, 1977) and the Academic Record of the students were used to screen out dyslexia. Descriptive and nonparametric statistics were used to determine the prevalence in dyslexia. Out of the total sample, 9.02 % were diagnosed with dyslexia. The prevalence of dyslexia observed in the population studied was relatively higher.

Gender differences were non-significant. Students with dyslexia are lagging behind their classmates substantially. Children's cognitive ability and academic failure poses a dilemma. Teachers and family members were found to display negative attitudes towards dyslexic children manifested in the form of insults, exclusion, psychological pressure, and physical violence. Many misperceptions were also identified based on their knowledge and level of education.

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INTRODUCTION

According to the International Dyslexia Association (2002), dyslexia is defined as a specific learning disability that is neurological in origin that affects approximately 20% of the population (International Dyslexia Association 2008). The data show that approximately one in five children will likely experience dyslexia and a significant number of children and families affected by dyslexia. According to the American National Institute for Child Health and Human Development, reading disabilities or dyslexia is the most prevalent neuro behavioural disorder in children (one in five), affecting both boys and girls nearly equally (McElgunn, 1996).

Estimates of the prevalence of dyslexia vary and are influenced by how dyslexia is defined and identified. Betts (1936) estimated that between 8% and 15% of children have varying degrees of reading disability, with about 4% of the school population being diagnosed as word blind, an earlier term that was used to describe dyslexia. More recent estimates suggest that 5% to 8% of the school-age population is the most accurate estimate of individuals who have

dyslexia (e.g., DeFries et al., 1978; Muter & Snowling, 2009; Sireteanu, Goertz, Bachert, & Wandert, 2005). Some estimates, however, are higher, ranging from 5% to 20% of the school-age population having dyslexia. The general objective of the study is to determine the prevalence of dyslexia in the student population and its impact on the children.

The specific objectives of the study are:

- a. To study the prevalence of dyslexia in primary schools in Dhaka, Bangladesh.
- b. To come up with a diagnostic tool that can be used to identify students with symptoms of dyslexia.
- c. To determine whether there is any significant correlation between students with dyslexia and learning outcome.
- d. Identify overall beliefs about dyslexia among primary school teachers in Dhaka.
- e. Identify perceptions about dyslexia among parents.

2. Materials and Methods

A cross-sectional design was followed in this study. This study has both qualitative and quantitative components. It primarily relies on quantitative methods to determine the prevalence of dyslexia. Focus group discussion and semi-structured interviews formed the basis of qualitative data collection. Some quantitative data has been collected from the previous academic assessment.

2.1. Sources of Data

Data were collected from primary and secondary sources:

2.1.1 Sources of primary data: Available primary data were collected from the study area. Valuable information was gathered by interviewing the parents.

2.1.2 Sources of Secondary Data: Secondary data, mainly from research papers, journals and study reports on Dyslexia.

2.2. The Study Tools

The study applied both quantitative and qualitative for data collection. Before conducting the research, official permission was sought from the school Headmasters for data collection offer assuring them that information taken from their students would be kept confidential and would only be used for research purpose. Test instructions and test items were translated into Bengali. Raven's progressive Matrices were administered in groups and Bangor Dyslexia Test was administered individually. The total time spent on each student for modified Bangor test was 20-25 minutes. Identification of children's academic performance has been based on their results in the mid-year examination using the average score in Mathematics, English and Language. Focus Group Discussion (FGDs) and in-depth interviews (IDIs) with semi-structured guidelines have been conducted.

2.3 Sampling

The target population consisted of grade-4 students from 3 primary schools. The sample was taken from 3 schools of Mohammadpur Area of Dhaka, Bangladesh. Schools included were Shishu Shorgo School, Protiva Ideal School and Shymoli Public Schools. The schools were selected by purposive sampling because of the need for research with this population and convenience in location to the researcher.

2.3.1 Sample Size

The sample comprised of 133 students Grade -4 (65 boys and 68 girls) of three primary schools in the Mohammadpur area.

2.3.1 Sampling Technique

A stratified random sampling was used. A total of 306 students have been first subdivided into subpopulations based on their gender and a sample random sampling has been used within each of the strata. An eye examination has been performed by an ophthalmologist, assessing vision and ability to focus on and discern objects, as well as other tests and examinations pertaining to the eyes of 14 dyslexic students.

2.3.1.1 Sampling of teachers

The teachers were primary school teacher in Mohammadpur area having at least 3 years of teaching experience. Selection of this group came out of a need for research with this population and convenience in location to the researcher.

2.3.1.2 Sampling of parents

Parents having dyslexic children and those "at risk" children were invited to join a Focus Group Discussion. Of those 17 parents contacted, all of them accepted invitation, 10 parents (2 male and 8 female) joined the FGD.

3. Results and Discussion

3.1 Overall prevalence of Dyslexia

The sample included 12 (9%) students with “intellectually superior IQ” with at or above the 95th percentile, 35 (26.5%) students with “above average capacity” with at or above 75th percentile, 84 (63 %) students with “intellectual average” being at or between 25th and 75th percentile and 2 (1.5%) students “definitely below average in intellectual capacity” with at or below the 25th percentile. The researcher identified that 117 students were declared “pass by” the schools in the last two examinations.

Out of the total sample, 14 (10.5%) students were screened out with dyslexia. When results were analyzed in another way in which 2 students who failed in the last two examinations, falling in any category of IQ, but scored low on dyslexia were excluded and the prevalence rate reached 9.02%.

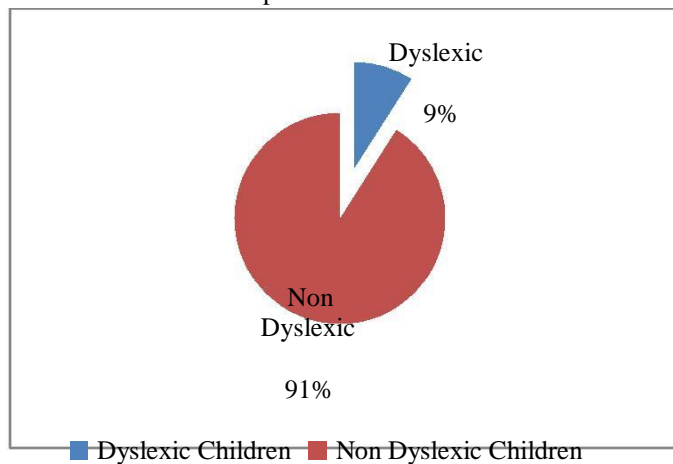


Figure 1: Prevalence of Dyslexia

According to DSM-IV-TR (APA, 2000), the epidemiological studies determined the prevalence rate of dyslexia in between 2 to 8%. The study results show a relatively higher rate of dyslexia prevalence.

3.2 Gender Difference in Prevalence of Dyslexia

	Male students	%	Female students	%
Dyslexic	7	58.33	5	41.66
Total sample (n)	65	48.87	68	51.12

Table 1: Frequencies and percentages of Prevalence of Dyslexia

This study indicates that the prevalence rate for boys is higher for boys than for girls. Bhakta et al. (2002) studied 1192 children in both genders and reported that boys and girls aged 8 years were identified with dyslexia 21.6% and 6.5% respectively, while in age 12 they appeared with approximately same percentage i.e. 4.5 for boys and 4.1 for girls.

3.3 Findings from FGDs and IDIs with parents

3.3.1 Parents' Perception of dyslexia

Parents' interpretation of dyslexic condition was full of common senses and intuition, which are no error-free sources of knowledge. Janet (2005) explained common senses and intuition as risky knowledge sources. She

observed, “Common senses uses our personal experiences and the experiences of those we know as the source of practical knowledge...Common sense places far too high premium on personal experience as a basis for universal truths. She defined intuition as “Intuition can be thought of as direct access’ knowledge; it refers to a way of knowing that operates on ‘gut feelings’ without the use of intellect”.

3.3.2 Parent’s perception poses a dilemma

The contrast between cognitive ability of their children and their academic failure poses a dilemma for parents. Most of the parents consider their children “intelligent “and not “dull”. The following graph shows parents perception of their children’s intellect.

3.4. Findings from FGDs with Teachers

3.4.1 Teachers’ background knowledge on Dyslexia

Findings from study have indicated that teachers lack essential knowledge needed to teach struggling readers, particularly children with dyslexia. Unfortunately, the education and certification requirements for our educators has generally been woefully lacking in information regarding reading disabilities, specifically dyslexia. This puts our educators at a distinct disadvantage when dealing with dyslexia in the classroom. There is always the exception to the rule, but sadly this is a broad problem within the education programs offered by Primary Teachers Training Institutes (PTI) and universities offering M.Ed.

3.4.2 Confusion between autism and dyslexia

Some participants confused autism with dyslexia. As many children with autistic spectrum disorder also have difficulties learning to read and write, they tend to confuse both the disabilities. A teacher said, *“I think that they are almost same. Both of them are related to learning disorders in children. I am not able to understand how to diagnose it.”* (TJ10).

3.4.3 Teacher’s perception of dyslexic condition

The study findings show that teachers have negatives attitudes towards students. Some of the opinions they offered are as follows:

- *These Students are stupid or lazy; if they only tried harder they could do better in school. (TJ3)*
- *They are slow readers. (TJ1)*
- *Their parents are not conscious and parental guidance is essential. (TJ7)*
- *They only watch television. (TJ3)*

3.4.4 Dyslexia and learning outcome

Students with dyslexia are lagging behind their classmates substantially. All the teachers interviewed expressed unanimously that students with dyslexia do not deserve to be in class 4.

A teacher said, *Had I have the option to place them according to these students competency, I would have put them either in class 1 or 2.*

4. Conclusion

It is important to recognize that behavioral difficulties in school may be a sign of dyslexia. Any sign of problems in learning to read, even very early in a child’s school career, should be taken seriously and investigated. The common assumption that the child will grow out of the problem is not a valid one in most cases. We know that early identification and early intervention can prevent most serious reading difficulties, or at least reduce the severity of them. Any school difficulties or behavioral problems should be investigated immediately. School phobia and/or somatic complaints that appear on school days are a sign of a possible learning disability.

5. Recommendations

Physicians and education professionals have an important role to play in the identification of children at risk for dyslexia. In addition to recognizing the signs of possible dyslexia, testers may be able to conduct some brief screening tests, including some standardized tests of reading, spelling and arithmetic. There is evidence that significant numbers of dyslexics are represented in populations of runaway homeless street youths (Barwick, 1996) and juvenile offenders (Snowling, 2000). It is important that we recognize these difficulties early and make an attempt to eliminate them or reduce their severity. Physicians and Education professionals have a particularly important role in recognizing a child who is at risk for dyslexia and helping the parents obtain the proper assessment.

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