SCREENING FOR DYSLEXIA AMONG SCHOOL CHILDREN OF ALLAMA IQBAL COLONY RAWALPINDI

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ABSTRACT

Objective: To screen out children at risk of Dyslexia in schools of Allam Iqbal Colony of Rawalpindi.

Study Design: Cross sectional study design.

Method: The sample consisted of 700 school children in the age range of 6 ½ - 11 ½ years. As a first step teachers identified children from their classes, who had any sort of difficulties in reading, writing, spellings, and language. Demographic information form and dyslexia screening test (DST) were used for assessment and other details we used. t-test and chi square tests for difference between groups of children with and without dyslexia.

Results: From the total population approached (700) the screened out cases were 39 (5.57%). More boys (71.8%) than girls (28.2%) were reported at risk. Between children with and without dyslexia there was no statistically significant difference for any demographic variable except the average monthly family income which was significantly lower among dyslexia cases.

Conclusion: A high percentage of children in schools in Pakistan are at risk of dyslexia and this requires immediate attention for nationwide identification of these cases and providing special educational services to this neglected group.

Keywords: At risk quotient, Dyslexia, Dyslexia screening test.

INTRODUCTION

Dyslexia comes under the umbrella of learning disabilities. Dyslexia is a disorder characterized by low scores on reading achievement regarding, age of the child, intelligence and age appropriate education. Depending on the definition used, 5% to 10% of the population is considered to have dyslexia according to international literature; however, because of the nature of the definitional issues an estimate of prevalence is specific to a particular sample and to the definition used in a study[1]. There has been a continuous debate and discrepancy about the assessment, diagnosis and prevalence of learning disabilities because different definitions, instruments and cut off scores have been used in different studies[2]. With a picture of the major cognitive deficits in dyslexia and the importance of speech and language the dyslexia tends to run in families[3-4].

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Gender has thought to be a critical factor in learning disabilities. In India 8.3% of the children in general population have reading disability. It has been strongly associated with male sex, parental education, parental socioeconomic status and history of delayed speech[5].

In Pakistan there is a limited number of researches conducted in this area and there are a few numbers of clinicians who can diagnose these children. We lack any reliable data about its prevalence, which can determine the magnitude of the problem in our culture[6]. This study was designed with an objective to screen the children to identify those who are at risk of developing dyslexia in schools of Allama Iqbal colony, Rawalpindi.

METHOD

Setting: Study was conducted in private primary schools of Allama Iqbal colony, Rawalpindi. All private schools in the colony were approached but due to the convenience and consent granted by the school authorities only 7 out of 15 private schools showed willingness to participate.

Inclusion Criteria: Children between the ages 6 ½ to 11 ½ were taken, since this is the age range recommended for screening by dyslexia screening test (DST) used in the present study.

Sampling Strategy

Step 1 Screening: As a first phase teachers were given a brief orientation about the research objectives, reading difficulties and possible consequences of these difficulties. They were, then, requested to identify those children from their classes, who were having any sort of difficulties in reading, writing, spellings, and language. This initial identification method has been previously applied to determine the prevalence of learning disabilities in Spain and Guatemala[7]. Total population approached in phase one through teachers was 700 which includes all the children in the classrooms of teachers who had been provided training for initial identification for learning difficulty of any sort. Number of children identified by teachers in this phase was 80 out of these 700 populations approached. However, 10 children were excluded because of being above or below the age range specified in the sample.

Step 2 screenings: In second phase 70 participants selected at a first step through

Demographic information form consists of basic information of the participants including age, child's gender, income level, marital status of parents.

Dyslexia Screening Test Junior

Dyslexia screening test Junior (DST)[8] was used to screen the children with dyslexia. Following the DSM IV TR criteria for dyslexia, DST identified junior school children at risk of dyslexia between the age ranges of 6 years 6 months to 11 years 6 months. It is a performance based, individually administered test and takes 30 minutes for a single individual. The DST test battery contains two types of tests; tests of attainment and diagnostic tests. Test of attainment consists of one minute reading, two minutes spelling and one minute writing. The diagnostic test comprises rapid naming, bead threading, postural stability, phonemic segmentation, backward digit span, nonsense passage reading, verbal and semantic fluency. To derive a composite score for screening purposes, score of all the tests are combined, and a composite score is yielded mainly called at risk quotient (ARQ)[8].

RESULTS

From the total population approached

Table-1: At Risk Quotient (ARQ) cases and non cases and demographic characteristics of the sample.

Variable	Dyslexic case N(%)/n=39	Non dyslexia cases N(%)/M(SD)	t/χ^2	p value
Gender			0.864	0.35
Male	28(61.3)	19(71.8)		
Female	11(38.7)	12(28.2)		
Marital status of parents			0.76	0.68
Two parent family	27(78.6)	22(87.1)		
Divorced	2(10.7)	3(6.5)		
Separated	2(10.7)	3(6.5)		
Age of the child	9.51(1.21)	9.72(1.43)	3.15	0.07

teacher identification process[7] were subjected to second level screening for dyslexia by using DST.

Instruments

Demographic information form (DIF)

through teachers (700) the screened out cases are 5.57%. The screening process yielded two groups of participants based on ARQ of dyslexia screening test; group A which included dyslexia cases, consisted of 39 (54.2%) participants and
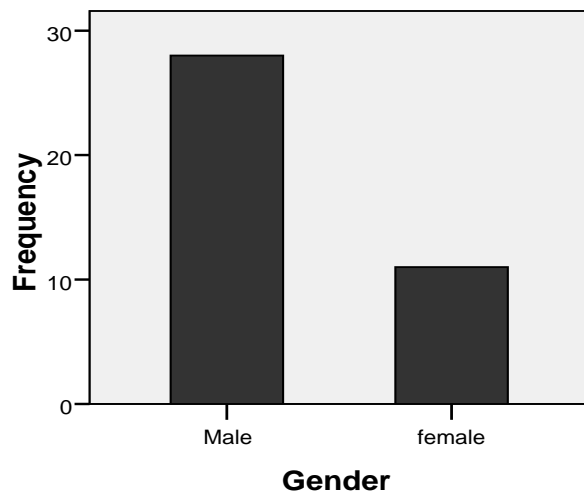
Figure-1: Sample distribution according to gender in Dyslexia group.

group B which included non dyslexia cases consisted of 31 (45.8%) participants. In dyslexia group we had 11 girls (28.2%), and 28 boys (71.8%; Fig-1). Table-1 further compares both groups for demographic variables. It shows that between dyslexic and non dyslexic group there is no statistically significant mean difference in gender, mean age and marital status of parents. However this difference is statistically significant for family's monthly income of the family showing average monthly family income of dyslexic cases lower than non dyslexic cases.

DISCUSSION

We had 5.57% children screened out in the present study for being at risk of dyslexia which is consistent with the statistics available from previous studies[1]. A higher frequency of male children is also consonant with previous studies. The previous studies showing lower family income and being male as risk factor also aligns with the findings of present study[5]. However some precaution is needed while interpreting these findings. This rate should be considered specific to the target sample due to small sample size of the present study. Due to security concerns in the current political scenario of Pakistan and other reasons it was challenging to take consent from schools in the locale and many schools refused to take part, hence limiting the scope of present study. Second due to different definitions and criteria used by researchers in different studies it is difficult to compare it with a ratio of at risk children from other studies[2]. Although been used in previous studies at first phase teacher identification for students can introduce some selection bias.

CONCLUSION

Screening of dyslexia using DST is complicated and requires resource and trained individuals[8], and hence large scale studies can be challenging keeping in view monetary constraints and trained workforce. However this should not be the reason for not initiating such projects for Pakistani children at risk of developing dyslexia. This study despite of being limited in scope also draws attention towards the need of special educational services for this highly neglected group in Pakistan.

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