

## Prevalence of Learning Disability in Primary School students in Kerman city

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Received for publication: 28 February 2014.

Accepted for publication: 17 July 2014.

### Abstract

The present study examined the prevalence of learning disabilities in primary school students in Kerman city. Respondents of the present study comprised of 793 primary students who were identified by cluster sampling technique. Instruments for students' data collection included intelligent, mathematic, reading and writing tests and questionnaire. Results of the present study indicated that frequency of learning disabilities in Kerman primary school was 40.74% and there was a significant difference between boys and girls. Math disability was 13.9 percent, reading disability was 36.9 percent, and writing disability was 4.5 percent. There was a significant different in math disability among boys and girls. Also there was a significant different in writing and reading disability among boys and girls.

**Keywords:** Reading Disability, Math Disorder, Writing Disorder, Learning disorder

### Introduction

Learning disorders are very common among primary school pupils, so they need a lot of care and attention in this regard because in this stage learning disorders recognized (Specht, 2004). Actually one of the main effective elements in increasing rate of students' drop out is learning disorders (Dunn et al, 2004). Learning disorders particularly show one of the most important and controversial issues of educational systems (Lyon, 1996).

Learning disorder in children and teenagers refer to lack of education development in reading, writing or math in compare to general IQ of children. Criteria of DSM-IV-TR regarding learning disorder involves a significant difference between the amount of education progress and level of IQ of a child or teenager and progress in reading, writing, or math in compare to other peers, it should be weak to a great degree (Sadock et al., 2007). Children with learning disorders aren't able to compete with their peers in some educational fields, while in some field do better than their peers. Learning disorder will lead to no progress in education, this is not expectable based on children's abilities and educational opportunities (Sadock et al., 2007).

Basically, learning disorders cause a terrible condition for children in school to progress. Sometimes, it leads to weakening spirit, low self-confidence, severe feeling of frustration and weak relationship with peers. Learning disorders are along with high risk of some problems such as lack of concentration, hyperactivity (ADHD), communicative disorders and depression. This is 1.5 times more probable for teenagers with learning disorder to leave school and approximately 40% of them

quit education too. Adult students, who suffer from learning disorders, are prone to problems related to employment and social compatibility. Learning disorders at least affect 5% of children in schools (Sadock et al., 2007). This number is for 5% of all students of public schools. In U.S.A, these students receive exceptional education services (Flecher et al., 2004).

Recent epidemiologic studies showed that life span for learning disorders is 9.7%; most prevalence of these disorders among children with exceptional health care is 28%, in compare to children with normal growth trend which is 5.4% (Sadock & Sadock, 2009). Approximately, 4% of children in U.S.A suffer from reading disorder. Studies show that prevalence of this problem is 2-8%. Learning disorders mostly refer to boys more than girls because of behavioral problems (Margalit, 1997).

It is estimated that, just math skill problem appears in about 1% of school children. Approximately, 1 out of 5 children with learning disorder have this specific problem. This disorder in girls probably is more common (Sadock & Sadock, 2009). Prevalence of writing disorder is not clear, but like reading disorder, it is estimated for 4% of school children. It seems that it is three times more common in boys (Sadock et al., 2007). Based on development theory of Piaget a major reason for appearance of problems in education is delay in accomplishment of some processes in students. Because students should achieve certain skills and knowledge from special fields to reach preparation level in learning those fields (e.g. math, reading, and writing) so that they can use classes. However, students suffering learning disorders need special care from their teachers, so that they can achieve required abilities and preparation for next learning stages. Based on cognitive psychological principals, learning disorders are due to disorder in processes like understanding, languages and memory. Based on this approach, due to differences in cognitive abilities of students, teaching should be based on teacher's knowledge that means teachers should consider these disorders in students while teaching. Finally, the best learning method should be chosen (Lerner, 1997).

Identifying reasons of learning disorders based on education is an important aspect which can help teachers in recognizing and categorizing children who suffer from learning disorders. Other types of learning disorder or problems that have physical cause such as inflammations of auditory system, can mislead teachers in identifying the kind of problem, so we should help teachers understand the reason of each problem and how to identify, categorize and rearrange them (Samoel & Vegalager, 2003).

But unfortunately, most students who suffer from learning disorders won't be identified before grade 3-4 of primary school because their teachers haven't got enough knowledge about learning disorder (Lyon, 1996). It is believed that, this problem is always probable to appear in students and if teachers can't identify this problem, students are labeled: lazy, irresponsible, with no interest and motivation. This is so important because students with above mentioned labels (lazy, irresponsible, with no interest and motivation) who have learning disorder, usually are deprived from suitable learning and education opportunities and probably they will experience common social and emotional disorders and will have low motivation and incomplete learning from their lessons (Lyon, 1996; Klassen & Linch, 2004).

It is clear that students with longer learning disorders, continue in each level and intensity without identification, categorization and rearrangement, the after that rearrangement would be much more difficult (Lyon, 1996). Nevertheless, if children with learning disorder be identified in the right time and be treated, implications would be positive (Gunderson & Siegel, 2001). On the other hand, attributing usual students with learning disorders is just another problem that can make educational and physiological problems for them (Sideridis, 2008).

Since 80s, most countries of the world arranged their plans in a way that students with learning disorders can participate and educate in usual classes instead of being placed in especial limited groups. This is a step towards uniformity of children with especial needs to be like usual students, this is done mostly in primary levels. It changed giving services to these students. Thus, it is the duty of usual class teachers to promote the knowledge and needed competence to deal with learning disorders in students (Steele, 2004).

Since teachers are the first formal reference for identification of learning disorder in children, they are very important in better recognition of such students, to remove their problem and prepare future educational plans for students and teachers. Therefore, in this study, researcher tried to determine the prevalence of this disorder in primary schools of Kerman.

### ***Objectives***

The objectives of the present study are:

1. To determine the prevalence of different types of learning disabilities in primary student.
2. To determine the prevalence of learning disability among male and female primary students.
3. To determine the prevalence of learning disability in different education levels.

### ***Hypotheses***

H<sub>01</sub>: There is a significant different in learning disability among male and female.

## **Methodology**

### ***Research design***

Research design of the present study is descriptive and cross-sectional.

### ***Participants***

The study population consisted of all primary students (male and female) studying in primary schools (private and government) of Kerman. Sample size was determined 793 students by cluster sampling method technique. Students who had scores below 12 were selected to complete questionnaire.

## **Measures**

### ***Teachers' survey of learning disability***

The teachers' survey of learning disability was designed by Jalili and Sahebi (1380). This Scale consists of 40-items. It is rated on a 2 point ranging based on 0=yes and 2= no. the minimum score for this survey is 0 and maximum score for it is 40. Nazer and office of education research in Birjand reported reliability results with acceptable Cronbach's coefficient alpha (Margalit, 1997).

### ***Child education questionnaire***

This scale assesses types of children education problems in math (19 questions), reading (6 questions), writing (5 questions). Teachers characterized each of the courses that students obtained scores less than 12.

### ***Reading, dictate and mathematics tests***

Diagnosis of learning disability often complete by a set of techniques. In the present study, reading, dictates and math tests was used. These tests produced by five teachers in third, fourth and fifth levels. Karimani and Rajabi (2005) reported high reliability for these tests with Cronbach's coefficient alpha values with a range from .73 to .80

### ***Wechsler intelligence test***

The Wechsler intelligence scales were developed by Wechsler. The child's verbal intelligence score is derived from scores on six of the subtests: information, digit span, vocabulary, arithmetic, comprehension, and similarities. The information subtest is a test of general knowledge,

including questions about geography and literature. The digit span subtest requires the child to repeat strings of digits recited by the examiner. The vocabulary and arithmetic subtests are general measures of the child's vocabulary and arithmetic skills. The comprehension subtest asks the child to solve practical problems and explain the meaning of simple proverbs. The similarities subtest asks the child to describe the similarities between pairs of items, for example that apples and oranges are both fruits.

Also, non-verbal intelligence scores is derived from scores on the remaining seven subtests: picture completion, picture arrangement, block design, object assembly, coding, mazes, and symbol search. In the picture completion subtest, the child is asked to complete pictures with missing elements. The picture arrangement subtest entails arranging pictures in order to tell a story. The block design subtest requires the child to use blocks to make specific designs. The object assembly subtest asks the child to put together pieces in such a way as to construct an entire object. In the coding subtest, the child makes pairs from a series of shapes or numbers. The mazes subtest asks the child to solve maze puzzles of increasing difficulty. The symbol search subtest requires the child to match symbols that appear in different groups. Scores on the performance subtests are based on both the speed of response and the number of correct answers (Boyle et al., 2008).

#### ***Analysis of Data***

Data from the current study were analyzed using Statistical Package for Social Science (SPSS). Inferential statistics that was conducted in the data analysis was chi-square Analysis and t-student.

#### **Results**

##### ***To determine the prevalence of different types of learning disabilities in primary student***

As shown in Table 1, In terms of learning disability, most of the respondents (31.52%) were without learning disability. 13.8% of respondents reported math disability. Also, minority of the respondents reported writing disability (4.5%). In contrast, majority of the respondents had reading disability (37%) and 17.52% of the respondents had borderline intelligence.

**Table1: prevalence of different types of learning disabilities**

	Frequency	Percentage
Without learning disability students	250	31.52
Math disability	110	13.8
Writing disability	36	4.5
Reading disability	293	37
Borderline intelligence	135	17.52

##### ***To determine the prevalence of learning disability among male and female primary students***

As shown in Table 2, more than half of the boy respondents (59.1%) and less than half of the girl respondents (40.9%) reported math disability. Also, majority of the boy respondents (63.9%) and minority of the girl respondents (36.1%) reported writing disability. Finally, majority of the boy respondents (62.1%) and minority of the girl respondents (37.5%) reported reading disability. The results of chi-square indicated that there is a significant different in writing disability among male and female. This means that male respondents reported high levels of writing disability compared to female.

**Table 2: Prevalence of learning disability among male and female primary students**

	Gender		p-values
	Male (426)	Female (366)	
Math Disability	65 (59.1%)	45 (40.9%)	.448
Writing Disability	23 (9.63%)	13 (36.1%)	.005**
Reading Disability	182 (62.1%)	110 (37.5)	.001

\*Chi-square test

*To determine the prevalence of learning disability in different education levels*

As shown in Table 3, 7.5% of the first education level respondents reported math disability, 91% of them reported reading disability. Any one didn't have writing disability. In terms of second education level, 31.8% of respondents reported math disability, 76.5% of them had reading disability and 3% of respondents had writing disability. In terms of fourth education level, 30% of the respondents had mathematics disability, 71.7% of them had reading disability and 21% of the respondents reported writing disability. According to Table 3, students in fifth education level reported 50% mathematics disability, 60.9% of them had reading disability and 13% of them had writing disability.

**Table 3: Prevalence of learning disability in different education levels**

	Mathematics		Reading		Writing	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
First education level	5	7.5	61	91	0	0
Second level	42	31.8	101	76.5	4	3
Third level	22	26.8	60	73.2	13	15.9
Fourth level	18	30	43	71.7	13	21.7
Fifth level	23	50	28	60.9	6	13

**Conclusion and discussion**

In analyzing prevalence of learning disorders in students of primary school, results of the present study showed that prevalence of learning disorders in primary schools of Kerman is 4.074%. Rate of learning disorder in boys is significantly more than girls. However, in a study which conducted in 2000-2001 in Birjand, prevalence of learning disorders was reported 37.4%. In another study that carried out in Ardabil, in 2005-2006, prevalence of learning disorders reported to be 13%. In both studies prevalence of learning disorder in boys significantly was more than girls.

Michael Bost and Boshez (1969), used criteria of expected educational level difference and actual operation level to identify children with learning disorders. Using these criteria showed that 15% of the sampling crowd had learning disorder. Based on results of studies of Samoel & Vagalager (2003), 7-8% of children suffer from learning disorder. Mayer studied 3000 children in second grade of primary school; he reported that learning disorder in this group was 15%, (Lyon, 1996). Emerson and Hatton (2008) reported prevalence of learning disorders 2.6%. Boil et al, (2011) analyzed prevalence of learning disorder in children of U.S.A from 1997- 2008, findings of their studies showed that 7.66% of children suffer from learning disorders. Also, Mogasale (2012) reported prevalence of learning disorder 15.17%. There is a big difference in reported statistics that causes doubt and caution and lack of assurance in taking decisions for this problem. Nevertheless,

this significant difference can be problematic in planning and investing for offering services in this regard (Specht, 2004).

It is noticeable that prevalence of learning disorders significantly is different from one place to another place, for instance; despite short distance between Iowa and Kentucky, the prevalence of learning disorder for students ageing 6-12 in Iowa is 3.3 times more than this amount in Kentucky. Also, it has been observed that there isn't an equal trend for identifying of these disorders by teacher training agencies (Sideridis et al, 2008).

In this study the prevalence of various learning disorders also has been analyzed, results included: From 793 pupils that were analyzed, 110 of them (13.9%) had math problem, 36 (4.5%) had writing disorder, 293 (36.9%) had reading disorder. In a study carried out in 2012 in India, prevalence of each disorder analyzed too. It has been reported that 12.5% of children suffered writing disorder, 11.2% suffered reading, and 10.5% suffered math disorder (Mogasale et al., 2012). Also, prevalence of various disorders analyzed based on gender, the results included: prevalence of math disorders in boys was 59.1%, in girls was 40.9%, which wasn't significant statistically. That means math disorders aren't significant in both genders. It has been reported for boys 62.1% and for girls 37.5%, it was significant statistically. That means reading disorders in boys are higher. Analyzing writing disorders in both genders showed that; for boys it is 63.9% and for girls it is 36.1%. It was significant statistically, that means writing disorders are significantly different in both genders. But anyway, boys had more problems than girls in this regard.

Prevalence of each disorder also had been analyzed based on educational grade of students. First grade students had 7.5% math disorder, 91% had reading disorders. None of them had writing disorder. In the second grade, 31.8% of students had math disorder, 76.5% had reading disorder, 3% had writing disorder. In third grade, 26% of students had math problems, 73.2% had reading disorder and 15.9% suffered from writing disorder. In fourth grade, 30% of children had math disorder, 71.7% showed reading disorder and 21.7% had writing problem. In fifth grade, 50% of children had math problem, 60.9% related to reading and 13% related to writing disorder. In our study the prevalence's were higher than other research. It means we must assess quality of educational environment and methods of teaching.

### **Practical Recommendations**

1-Training teachers in order to identify these disorders precisely should be part of retraining periods and increasing knowledge of teachers in primary programs of human force promotion.

2-Using stable and valid devices which are based on acceptable definitions of specialists of this issue are very vital.

3-It is essential for primary school teachers to be active through retraining periods about identification, treatment and rearrangement of learning disorders to prevent establishing learning disorders in higher grades of education.

4-It is recommended that cognitive evolution of children in pre-school stage from age of 4-6 should be analyzed using Piaget Tests of Mental Protection, so that by fast diagnosing treatment programs, so that we can rearrange learning disorder training before primary school.

According to high percentage of prevalence of learning disorders in this study, it is recommended to Education Department to consider and apply general reforms regarding educational methods.

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