

EVALUATION OF PREVALENCE AND DIVERSITY OF LEARNING DISORDERS AMONG ELEMENTARY SCHOOL STUDENTS IN RASHT CITY

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Abstract

The purpose of this study is achieved to amount prevalence and diversity of learning disorders among elementary School Students in Rasht City. The method of research is Causal - Comparison and after event. Statistical society of present study is constitute 56,292 people from the first to fifth grade students studying in rural and urban schools in Iran(Rasht) that among them nearly 5362 people was selected by using multistage cluster sampling method .and by using checklist of children characteristics with dyslexia reading, dyslexia writing and dyslexia in the accounts, which were given to teachers, along with assess students' performance in office of classroom activities was attempted to identify children suffering to insufficiency special to learning .In the second phase were randomly selected 30 students suffering from learning disorders, and 30 normal students of the same classes . Both groups have responded to Wechsler intelligence tests for children visual memory test of Andre Rey. Educational level of mothers was also investigation and comparison in both groups. Also a data collection method was individually and in place of education of students and was performed by a specialist examiner. Results showed that 6/5 % students of elementary schools in Rasht city are suffering from insufficiency special in learning. Prevalence disorders in boys more than girls and in fourth and fifth grade is higher than the other grade. Learning disorders in rural is more than urban and in first and second grade reading and writing disorder and mathematics disorder in the fourth and fifth grades, prevalent is higher. Student with Disorder have weaker Memory than normal students.

Keywords: Learning Disorders, Insufficiency Special for Learning, Dyslexia Reading, Dyslexia Writing, Dyslexia in the Accounts

1- INTRODUCTION

In recent years, efforts have been made in improving school quality and assessment in our country along with other countries(Gilaninia & et al,2011)In the range of individual and social life of human, there is many and varied things for "learning". Said that "human, human is to training" and training in principles and their nature, cannot be achieved except through learning. Despite the importance of social learning in human, there are children that have a natural

appearance, and physical development height and weight of their indicative of normalized, their intelligence is more or less normal but when they go to school and learn to read and write and calculate, be afoul new problems and themselves see different from the others .This status is caused perplexity of parents by specialists is known as learning disorders. Since the 1960s, children with learning disorders have been attend focus of education and psychological research and different estimates of learning disorders ways have been made among children (Kirk,et al,1997).

Learning disorders are called in various books of special learning problems, learning disabilities or specific disorders of learning by psychological association of America (2006) (DSM IV) is defined as significant no matches between the intelligence and the amount of skills expected in reading, writing, speaking, hearing application, reasoning, mathematics in comparison with other children of same age and similar intellectual ability. Of course three main types learning disorders include: reading disorder, mathematics disorder and disorder of written expression (Kronenberger, 2003)

Learning disorders are undeniable facts that can be observed in all societies and cultures. Children suffering learning disorders in the long term, ongoing are feelings of inadequacy, humiliation, separation and alienation and with deepens feeling tend toward depression and aggression and was reluctant to go to school and writing assignments Also showing poor performance uninterested in other academic skills of school, they show escape from the school and conduct disorder (Afrooz,2008).

People are who are the successful in the study, subject preservation and its recall. Necessarily should not be so popular with exceptional intelligence and memory(Gilaninia & et al,2011).If is not treated reading and writing problems of children that have learning disorder have hurt to learn knowledge and will impose repetition of failed experience to child and may reduce generally level of learning motivation. Such consequences can have long-term effects on educational status, acquiring skills and finally in occupational status of person that if this problems was not, the child was able to achieve of these skills (Lyytenin & Eriksen, 2006).

According to international estimates, about 8 percent of children and boys often suffer from learning disorders (Wallace, Mcfallin, 1997),Jesesky (1980) Rates of prevalence of this disorder is estimated in the general population of children, 3 to 15%.Mickel Bast & Bereshner(1968) Estimated that about 7 to 8 percent of children have learning disorders.Meyer(1971) 15 %,Briant(1972) 3 to 28 %,Kerk Vikenz(1975) 2/5 % have been reported.in Nelson idea (1998) Considering the definitions of conventional and accepted scientific and professional associations Estimated 5 to 10 percent can be rational and logical matter. The above statistics show that the population of students with learning disorders is increasing significantly. However, today is estimated at least 3 percent of school-aged children have learning disorders.

Since if data about the prevalence of this problem and also its variations at different ages and geographic regions and gender (male and female) are available, can with timely planning up to significantly reduce it problems and consequences. For example training learning skills or to more technical term of cognitive and metacognitive strategies helps to students with learning disabilities, have enhance knowledge about themselves and knowledge about their task of learning, and able to communicate new information to previous information (Seif, 2005). Therefore it is important to be paid to this case extraordinary and to fundamental question how is prevalence and diversity of learning disorders among elementary school students? And what variables are associated with this disorder? Response should have been appropriately.

2- RESEARCH HYPOTHESES

- 1 - Measurement of learning disorder Prevalence is different among elementary school male and female students.
- 2 - Measurement of learning disorder Prevalence is different among urban and rural elementary school students.
- 3- Measurement of reading disorder Prevalence is different among elementary school male and female students.
- 4- Measurement of writing disorder Prevalence is different among elementary school male and female students.
- 5- Measurement of Mathematical disorder Prevalence is different among elementary school male and female students.
- 6- Measurement of the combined disorder Prevalence (reading, writing and Mathematics) is different among elementary school male and female students.
- 7- There is different among Education level of mothers, two groups of students with learning disorders and normal students
- 8- There is different between intelligence (IQ), two groups of students with learning disorders and normal.
- 9- There is different between memory of two groups of students with learning and disorders normal students.

3- RESEARCH METHOD

The purpose of this study is achieved to amount prevalence and diversity of learning disorders among elementary school students in Rasht city. The method of research is causal - comparison

and after event. In this study have been used ratio Test for to show differences between gender, grade, and place of education and learning disorders and χ^2 test to show the relationship between mother education and learning disorders and T-test for comparison of normal and behavioral problems of students with learning disorders have been used.

Statistical society of present study is constitute 56,292 people from the first to fifth grade students studying in rural and urban schools in Rasht city that among them nearly 5362 people was selected by using multistage cluster sampling method and by using checklist of children characteristics with dyslexia reading, dyslexia writing and dyslexia in the accounts, which were given to teachers, along with assess students' performance in office of classroom activities was attempted to identify children suffering to insufficiency special to learning .In the second phase were randomly selected 30 students suffering from learning disorders, and 30 normal students of the same classes . Both groups have responded to Wechsler Intelligence tests for children visual memory test of Andre Rey. Educational level of mothers was also Investigation and comparison in both groups. Also a data collection method was individually and in place of education of students and was performed by a specialist examiner.

4- DATA ANALYSIS

H1: Measurement of learning disorder Prevalence is different among elementary school male and female students.

Table 1: Comparison of learning disorder elementary school students based on gender and grade

Grade	Group	Female	Male	P1	P2	Z	P
First	Disorder	31	37	0/064	0/074	0/617	P>0/05
	Total	483	498				
Second	Disorder	21	40	0/039	0/080	2/781	P<0/01
	Total	537	495				
Third	Disorder	27	38	0/047	0/066	1/276	P>0/05
	Total	563	569				
Forth	Disorder	27	41	0/052	0/068	1/122	P>0/05
	Total	518	599				
Fifth	Disorder	43	47	0/079	0/084	0/303	P>0/05
	Total	544	556				
Total	Disorder	149	203	0/056	0/074	2/672	P<0/01
	Total	2645	2717				

The results showed that:

Measurement of learning disorder Prevalence is not significant in first grade between male and female ($P>0/05$, $Z=0/617$)

In the second grade of elementary learning disorders prevalence between male and female in the 0 / 01 is significant ($P<0/01$, $Z=2/781$) Means prevalence of learning disorders among male students is more than female students in second grade elementary.

Measurement of learning disorder Prevalence is not significant in third grade between male and female ($P>0/05$, $Z=1/276$)

Measurement of learning disorder Prevalence is not significant in fourth grade between male and female ($P>0/05$, $Z=1/122$)

Measurement of learning disorder Prevalence is not significant in fifth grade between male and female ($P>0/05$, $Z=0/303$)

In total grades the prevalence of learning disorders among male and female in the 0 / 01 is significant. ($p<0/01$, $Z=2/672$) Means prevalence of learning disorders among male students is more than female students in the elementary schools. So with 99% confidence can be concluded that the prevalence of learning disorders among males is more than female.

Erfani(1997), Abolfathi(2003), Khan Mohammadi(2003), Karimi(2005), Gholami(2006) and Chan Ho Tsang, Lee and Chang (2008) also achieved to this results.

Satter (2002) believes that males is more than females suffering to learning disorders but the discussion of gender differences in the prevalence of the disorder is not a serious and strong as can be imagined.

H2: Measurement of learning disorder Prevalence is different among urban and rural elementary school students.

Table 2: Comparison of learning disorder elementary school students based on urban and rural regions

Grade	Group	urban	Rural	P1	P2	Z	P
First	Disorder	50	18	0/071	0/064	0/339	$P>0/05$
	Total	703	278				
Second	Disorder	44	17	0/058	0/06	0/038	$P>0/05$
	Total	752	280				
Third	Disorder	45	20	0/053	0/068	0/925	$P>0/05$
	Total	841	291				
Forth	Disorder	48	20	0/058	0/068	0/604	$P>0/05$
	Total	825	292				
Fifth	Disorder	65	34	0/068	0/121	2/617	$P<0/01$
	Total	820	280				

Total	Disorder	243	109	0/061	0/076	1/919	P>0/05
	Total	3941	1421				

The obtained results show that Z is not significant at the 5% level (Z=1/91, P>0/05) Means amount of disorders in urban and rural students in first to fourth grade are not significant .Only significant difference there is between the fifth grade students in rural and urban areas that this difference in level 0 / 01 is significant (Z=2/617, P<0/01). It can be said that the number of students with disorders in the fifth grade in rural schools is more than students with disorders in urban schools.

H3: Measurement of reading disorder prevalence is different among elementary school male and female students.

Table 3: Comparison of reading disorder elementary school students based on gender and educational grade

Grade	Group	Female	Male	P1	P2	Z	P
First	Disorder	3	3	0/006	0/006	0	P>0/05
	Total	483	498				
Second	Disorder	0	0	0	0	0	p>0/05
	Total	537	495				
Third	Disorder	0	1	0	0/001	0/751	P>0/05
	Total	563	569				
Forth	Disorder	0	0	0	0	0	P>0/05
	Total	518	599				
Fifth	Disorder	0	0	0	0	0	P>0/05
	Total	544	556				
Total	Disorder	3	4	0/001	0/001	0	p>0/05

So can be seen between Male and female students in first to fifth grade difference is not significant in terms of reading disorder And Z obtained is not significant.

H 4- Measurement of writing disorder Prevalence is different among elementary school male and female students.

Table 4: Comparison of writing disorder elementary school students based on gender and educational grade

Grade	Group	Female	Male	P1	P2	Z	P
First	Disorder	7	6	0/014	0/012	0/276	P>0/05
	Total	483	498				
Second	Disorder	0	3	0	0/006	1/760	p>0/05
	Total	537	495				
Third	Disorder	1	4	0/001	0/007	1/697	P>0/05
	Total	563	569				
Forth	Disorder	1	1	0/001	0/001	0	P>0/05
	Total	518	599				
Fifth	Disorder	4	2	0/007	0/003	0/940	P>0/05
	Total	544	556				
Total	Disorder	13	16	0/004	0/005	0/547	p>0/05
	Total	2645	2717				

So can be seen between Male and female students in first to fifth grade difference is not significant in terms of writing disorder and Z obtained is not significant.

H 5- Measurement of Mathematical disorder Prevalence is different among elementary school male and female students.

Table 5: Comparison of Mathematical disorder elementary school students based on gender and educational grade

Grade	Groups	Female	Male	P1	P2	Z	P
First	Disorder	1	0	0/0020	0	0/991	P>0/05
	Total	483	498				
Second	Disorder	7	5	0/013	0/010	0/451	p>0/05
	Total	537	495				
Third	Disorder	13	2	0/023	0/003	0/002	P>0/05
	Total	563	569				
Forth	Disorder	3	2	0/005	0/003	0/521	P>0/05
	Total	518	599				
Fifth	Disorder	6	2	0/011	0/003	0/002	P>0/05
	Total	544	556				
Total	Disorder	30	11	0/011	0/004	0/002	p>0/05
	Total	2645	2717				

So can be seen between male and female Male and female students in first to fifth grade difference is not significant in terms of Mathematical disorder and Z obtained is not significant.

6- Measurement of the combined disorder Prevalence (reading, writing and Mathematics) is different among elementary school male and female students.

Table6: Comparison of Mathematical, writing, reading disorder elementary school students based on gender and educational grade

Grade	Groups	Female	Male	P1	P2	Z	P
First	Disorder	12	16	0/024	0/032	0/759	P>0/05
	Total	483	498				
Second	Disorder	6	21	0/011	0/042	3/097	P<0/01
	Total	537	495				
Third	Disorder	4	19	0/007	0/033	4/221	P<0/01
	Total	563	569				
Forth	Disorder	12	27	0/023	0/045	2/023	P<0/05
	Total	518	599				
Fifth	Disorder	23	27	0/42	0/048	0/479	P>0/05
	Total	544	556				
Total	Disorder	57	110	0/021	0/040	4/045	P<0/01
	Total	2645	2717				

So can be seen between Male and female students in first and fifth grade difference is not significant in terms of combined disorder and Z obtained is not significant but between male and female Male and female students in second, third and fourth grade difference is significant in terms of combined disorder and Z obtained is significant. Overall we can say with 99 percent confidence. Between male and female elementary school students, there is difference in terms of combined disorders and a combined disorder is more common in males.

H 7- There is different among education level of mothers, two groups of students with learning disorders and normal students

Table 7: result χ^2 test based on Educational level of mother

Mother education level	Groups		χ^2	P
	Disorder	Normal		
Uneducated	3	2	2/401	0/663
Elementary	4	8		
Secondary school	5	3		
High school	16	14		
Bachelor	2	3		

Above table data shows that there is no significant difference between education level of mothers in both groups of learning disorders and normal($\chi^2=2/401$, $P=0/663$). In other words mother's education cannot be a predictor variable for learning disorders.

Erfani (1997) in their study concluded that there is no significant relationship between native language and learning disorders but there is a significant relationship between knowing to Persian language and learning disorders. Karimi(2005) In their study showed that there is a significant relationship between mother education and learning disorders. Rastkhaneh(1994) In their study showed there is no a significant relationship between learning disabilities and family economic situation. also Saltr (2002) believes that although children of low socio - economic levels or racial minority groups as inappropriate are sent more special classes but exactly is not clear that this increase due to real difference in disorders between this groups of children or have been seen by the existence of orientation political or even economic, such differences in the detection, diagnosis and referral of children.

H 8- There is different between intelligence (IQ), two groups of students with learning disorders and normal.

Table 8: result of t test for Comparison of Intelligence differences in the two groups

Group	Mean	T	df	Sig
Disorder	101/20	1/779	58	0/080
Normal	104/90			
Different	3/70			

As can be seen obtained t, Comparison mean of two groups with Learning disorders and normal is not significant ($T_{58}=1/779$, $P=0/080$). Therefore is concluded that there is no significant difference between groups in terms of intelligence. In other words learning disorders is not affected by intelligence.

Rastkhaneh (1994) to this results achieved that there is no significant relationship between dependent variable learning disabilities and independent variables intelligence, teaching history teacher, and socioeconomic status. Aaron and et al (2008) believe that an individual with dyslexia reading is usually based on the difference between intelligence and reading performance are distinct. America Psychiatric Association (2006) Learning disorders refers to significant discrepancies between the intelligence and skills expected levels in reading, writing, math reasoning compared with other children of similar age and intellectual ability.

H9: There is different between memory of two groups of students with learning and disorders normal students.

Table 9: result of t test for Comparison of memory differences in the two groups

Group	Mean	T	df	Sig
Disorder	16/80	4/694	58	0/000
Normal	21/86			
Different	5/06			

As can be seen obtained t, comparison mean of two groups with Learning disorders and normal is significant ($T_{58}=4/694$, $P=0/000$). Therefore is concluded that there is significant difference between groups in terms of memory.

Nariman & Rajabi (2005) in their study were determined weakness in visual memory is one of the factors associated with learning disorders. Azizian (2001) also believes that weakness visual memory is one of the factors in learning disorders. Jin and Ching (2001) also believe that children with learning disorders have more confusion in memory, matching, and visual memory compared to their peers. Rama (2002) also showed in their study, Students with mathematics problems have been defects in visual memory sequenced and their problems is more in visual memory.

5- CONCLUSIONS AND SUGGESTIONS

In this study from 5326 students were identified 352 students that have disorders that allocated 203 students means 7/4 % male and 109 student means 5/6 % female. Shows the learning disorder is more common among males. Results of this study is consistent with results of Miah Nahri (2006) and Alizadeh (2005), also adapt with estimated the America Psychiatric Association (DSM IV-2006).

In this study, most types of disorders are combined disorders (reading, writing and math) that Farzad Karimi (2005) in their investigation is concluded. From 352 students with disorders studied 243 student means 6.1 percent, in urban schools and 109 ie 7.6 percent in rural schools that learning disorders is more common in rural schools slightly but in records have been studied, such as hypothesis has not been tested that can be compared results with them, but can concluded that due to culture poverty in rural areas, increase child in family and lack of experienced teachers in rural areas and lack access to adequate educational facilities, the prevalence of learning disorders in rural areas is more than urban.

Prevalence of reading disorder in girls 0/11 percent in boys and 0/14 percent and in total population of sample 0/13 percent was calculated. Most prevalence of reading disorder in first grade with 1/35 percent and the lowest in the second and fourth and fifth grade is equal to 0, that this result toward announced America Psychiatric Association (DSMIV, 2006) and Chan Ho Tsang, Lee and Chang (2007) and Seifollah Gholami (1385) and Farzad Karimi (2005) is less comparability but with result Erfani (1997) is consistent. Khan Mohammadi (2003) has shown in his research that in reading disability and gender there is no difference. With regard to data from this study can be concluded that after changing Persian book of Elementary Schools to read and write books, Problems and disorders to read in elementary school students has declined significantly.

Measurement of writing disorder Prevalence is in girls 0/49 % and in boys 0/69% and in total 0/54 that is slightly more common in boys. Most Measurement of writing disorder Prevalence was calculated in first grade and the lowest in fourth grade with 0/17 that this result is consistent with result of Erfani(1997) but Psychiatric Association of America, Measurement of writing disorder Prevalence announced 3 to 10 percent and Seifollah Gholami 3/82 and Farzad Karimi (2005) Measurement of writing disorder Prevalence announced 20% in male and 12/7 in female.

Mathematical disorders prevalence was estimated in girls 1/13 percent and in boys 0/40 percent and in total sample 0/76 is slightly more common in girl. Most prevalence rate of mathematical disorders was calculated in third grade with 1/32% and the lowest level with 0/10 percent in first grade. America Psychiatric Association (DSMIV, 2006) has announced Mathematical disorders prevalence 5 %, (Quotes from Hasanpour and Alinejad, 2010)3/76%, Erfani (1997) 4/6 %. The highest prevalence rates in both genders in all the elementary level, combined disorders of reading, writing and Mathematics were estimated about 3/11 percent. These disorders was calculated in girls 2/15 percent and in boys 4/8 percent.in among grade, fifth grade 4/54% have highest prevalence rates combined disorders that this result Is consistent with result of Karimi(2005). This result indicates that according to intercommunicate primary different courses of together, having disorder in a subject can be underlying disorders in other courses .For example, if a student is having difficulty in reading ,this problem will be underlying the disorders writing and mathematical. Also high prevalence of combined disorders in the fifth grade show if minor problems and disorders students in lower grade (first and second) is not correction and resolved in higher level will occur with greater intensity and Finally, the successive failures will causes quit school students.

According to results can be concluded first grade students due to lack of experience reading and writing, in this course and third, fourth and fifth grade students, due to the complexity of mathematical concepts and lack of expertise teachers in the teaching of mathematics and teacher excessive expectations of students show further weakness in this course.

Thus according to achieved results presents following suggestions:

- Conduct an experimental study is recommended in order to predict learning disorders and the role of early intervention
- Use planners in the "measure design physical health and educational readiness of new students beginning to elementary school" from results of this research and measures for screening and identifying new students who may potentially be at risk of learning disorders.
- Recommended by Organization of Research, Planning and textbooks Compilation the Ministry of Education Be distributed and provide Specific programs of rehabilitation and occupational therapy for children who have learning disabilities in schools.

- To prevent from complications severe learning disabilities, in particular, achievement motivation, it is recommended after Short time during beginning of academic year to be used Specific test for identifying children who have learning disabilities because compensation programs to be carried out as soon as to about these children.

- Increase teachers' knowledge in the field of learning disorders through service training courses and training workshops.

- Raising the public's vision of society, especially parents toward characteristics of students with learning disorders in the field of social with normal students

- Allocation of compensatory programs and time opportunities more for these children in order to dominate educational concepts.

- Reduce the number of students in class that students are having disorders in them until provide Possibilities and opportunities special educational intervention for teachers.

-with regard to significant difference in the prevalence of learning disorders in males, is recommended to measure time enter to elementary school Officials and experts is shown more sensitive on gender and is applied with special tests Toward identify timely and treatment programs.

- with regard to high prevalence of learning disorders in rural areas is recommended if possible, also in rural areas is established particularly problems centers of learning or by sending experts to part-time are covered rural students.

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