Prevalence of learning disabilities in Palestinian Children in Fifth and Sixth grade
(in West Bank and Gaza Strip)

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Abstract

Aims: The aim of this study is to estimate the prevalence rate of learning disabilities and difficulties in fifth and sixth class Palestinian children in West Bank and Gaza Strip.

Method: The sample consisted of 824 students selected randomly from fifth and sixth class in West Bank and Gaza Strip schools. There were 281 boys (34.1%) and 543 were girls (65.9%). The age of children ranged from 10 to 14 years with mean age of 11.06 years (SD = 0.79).

.**Instruments:** The teachers interviewed children in classes using Al Quds University group learning disability tests. These tests were able to identify learning disability in three academic domains (reading and writing in Arabic and English as a second language and mathematics).

Results: The study showed that 9% of children had learning difficulties, 27.8% had learning disabilities, and 63.2% had no problems in Arabic Language. For English language, 65% of children had problems, 10.5% had learning difficulties, and 24.5 % had learning disabilities. While 70.2% of children had no any learning problems in mathematics, 12.1% had learning difficulties, and 17.7% had learning disabilities.

No statistically significant differences in gender and Arabic, English language, and mathematics scores. Arabic language disability reached statistically significant differences toward Gaza Strip children. No site differences in learning disability in English language and Mathematics rates.

The results showed that there were statistically significant differences in English language level and mathematics toward children enrolled in governmental schools than those children in UNRWA and private schools

The results showed that total scores of Arabic language from schools records was positively correlated with total scores of Arabic, English Language and mathematics by children . Also, total scores of English language from schools records were positively correlated with total scores of Arabic and mathematics by children and not with English language scores. There were positive correlations between total scores of mathematics from school records and total scores of Arabic, English Language, total Mathematics scores tested by children themselves.

Conclusion:

This study showed that Palestinian children and West Bank and Gaza Strip reported higher rates of learning disabilities. Special education evolved as a means of providing specialized interventions primarily through prescribed instruction based on individual student progress on individualized objectives. A model oriented toward special education is appropriate for the area in many ways. It provides an opportunity for the classroom teacher or the peer specialized teacher to be able to identify children who may have learning difficulties in the classroom, determining why some of the children in the class are not doing well and creating a situation for improvement through assessment, referral, and the design of individualized instruction.

Keywords: Palestinian Children, 5th and 6th grades, prevalence, learning difficulties, disabilities.

Introduction

Learning disability

A learning disability is recognized by medical and mental health professionals as a neurobiological disorder of cognitive and/or language processing caused by atypical brain functioning. As a consequence of the brain dysfunction, the manner in which individuals with learning disabilities process and acquire information is different from the typical functioning expected for a child or adult who can learn without great and/or written expression. Frequently, a learning disability is difficulty. A learning disability may present academically in the areas of word decoding or identification, reading comprehension, calculation, mathematical reasoning, spelling, associated with atypical functioning in the area of spoken language, as well. A learning disability that is demonstrated in an academic setting may have associated consequences in other contexts. For example, an individual's daily activities in the home may be affected because of the potential for poor memory, poor reasoning, or poor problem solving associated

with the neurobiological problem. Additionally, social relationships and/or emotional functioning may be adversely affected because the individual's cognitive processing deficits cause him or her to make mistakes in thinking or behaving and/or to misunderstand the behavior of others (Rourke, 1995; Tsatsanis, Fuerst, & Rourke, 1997).

The National Joint Committee for Learning Disabilities (NJCLD) defined *learning disabilities* as a generic term referring to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities (Heward, 2000).

Heward (2000), operationalizing various definitions of learning disabilities, maintains that three criteria must be met in defining learning disabilities: (1) a severe discrepancy between the student's intellectual ability and academic achievement, (2) an exclusion criterion, and (3) a need for special education services.

Learning disability have been identified and categorized. For example, dyslexia is a frequently occurring learning disability that affects reading and spelling. Research has shown that atypical brain functions involved in auditory-linguistic processing (e.g., phonological processing and rapid automatized naming) are found in many individuals with dyslexia (Shaywitz et al., 2002; Wolf, Bowers, & Biddle, 2000). Evidence exists that phonological processing and rapid automatized naming are core processes that predict reading skills (Kirby, Parrila, & Pfeiffer, 2003). However, some individuals with dyslexia have structural differences in their visual systems in the brain (Eden et al., 1996). The effects of visualspatial deficits upon learning may extend to other skills. Dyscalculia is a learning disability that affects mathematical calculation and/or math problem solving. Investigations are underway to determine the various kinds of atypical brain functions that cause dyscalculia. The dyscalculia research that utilizes neuroimaging is not as extensive as the dyslexia research, but studies of neurocognitive processes clearly have documented specific types of brain dysfunction (Swanson & Beebe-Frankenberger, 2004; Wilson & Swanson, 2001). Some subtypes of dyscalculia are a consequence of the auditory-linguistic deficits that also cause dyslexia while other subtypes may be a product of visual-spatial dysfunction (Hecht, Torgesen, Wagner, & Rashotte, 2001).

Prevalence and aetiology of learning disability

Prevalence rates vary depending on the study design and the population studied, but according to the World Health Organization the true prevalence of learning disability is close to 3%. Roeleveld et al., (1997) undertook a review of prevalence studies and reported 'an enormous gap in our knowledge about learning disability', and that many studies were hampered by imperfections in study design and estimates of prevalence rates. Individuals with mild disability represent the largest proportion (approximately 2.5% of the whole population); moderate learning disability involves approximately 0.4% of the population, and severe and profound levels combined account for approximately 0.1%. Epidemiological studies have been undertaken looking at the causes of learning disability, including demographic, parental and environmental factors. Down syndrome (DS), for example, occurs at the same rate in all populations regardless of race, geographical location or season of birth. The principal association appears to be that of an increased rate with increasing maternal age. A range of environmental factors have been studied, including fluoride in drinking water, radiation and thyroid dysfunction in mothers, but generally there is no evidence supporting an environmental agent as a causative factor for Down syndrome. Learning disabilities (LD) affect about 1–2.5% of the general population and 10–15% of school-aged children (American Psychiatric Association, 2000; Gillberg et al., 2003). LD frequently occurs together with behavioural, social and emotional problems (Gillberg et al, 2004). A variety of definitions can be found in the research literature, representing various problems and underlying causes. Four conceptualelements are common in most definitions of LD: (1) heterogeneity, (2) neurobiological nature, (3) discrepancy between learning potential and academic performance and (4) exclusion of sensory or motor impairments, mental retardation, emotional disturbance or environmental, cultural or economic disadvantages as causes of LD (Individuals with Disabilities Education Act, 2004; Lyon et al., 2001). Furthermore, the learning problems should interfere with school performance and/or daily functioning [American Psychiatric Association, 2000). Two subtypes of LD are extensively reported in the literature: Verbal Learning Disabilities (VLD) and Non-Verbal Learning Disabilities (NVLD) [Drummond et al., 2005; Johnson et al., 1967). The VLD subtype is characterized by relative deficits in language skills (e.g. dyslexia and Specific Language Impairment (SLI) (Bishop et al., 2004; Gordon (1999). Conversely, children with NVLD have impaired visual-spatial abilities (e.g. dyscalculia and Nonverbal Learning Disorder (NLD) (Forrest, 2004; Rourke et al, 2002).

LD frequently lead to secondary problems such as low self-esteem, behavioural problems, dropping out of school and social problems (Gillberg and Soderstrom, 2003). Early diagnostics and intervention are of great importance, because of the aforementioned secondary problems associated with LD. It has been argued that a multidisciplinary approach is the best way to achieve this (DeSpirito and Grebler, 1983; Oberklaid and White, 1985). Others, White et al., (2005) looked at the prevalence of learning disability and comorbid mental illness in an Australian community sample of 42,664 individuals living at home or in cared accommodation. The prevalence of learning disability in the sampled population was 1.25%. Fourteen percent of these people had an anxiety disorder. In concordance with Crews' study, depressive disorder was also common, with 8% fulfilling the criteria for this diagnosis. Psychotic disorder had been diagnosed in 1.3% of the learning disability population.

Previous study of Palestinian children in third and fourth class in West Bank and Gaza Strip showed that 28.2% of children reported learning disability in Arabic Language, 19.2% reported learning difficulties in English language, and 22.3% reported learning disability in Mathematics. There were no statistically significant differences in Arabic and English language scores between the two sites of the study. However, learning difficulties and disabilities in Mathematics scores were more in children from Gaza Strip (Thabet, Dajani, Adallah, 2013 in press).

Palestinian Education Authorities

There are various types of educational institutions in Palestine. Government schools comprise 70 percent of a total of 2,488 schools in 2009/2010. UNRWA supervises 20 percent of these schools, and the public and private sector supervise 10 percent of the total school population. Seventy-five percent of the students of the total number of 1.18 million male and female students attend government schools, whereas 25 percent go to UNRWA and private schools. http://www.thisweekinpalestine.com/details.php.

In our study we adopted the most common operational definition of unexpected difficulty became a discrepancy between an individual's IQ score and his or her achievement score in reading. According to the U.S. government eligibility of learning disabilities definition based on a "severe discrepancy" between ability and achievement (U.S. Office of Education, 1977). In order to achieve our study objectives we carried out two stage study design as follow:

The aim of this study is to estimate the prevalence rate of learning disabilities and difficulties in fifth and sixth class Palestinian children in West Bank and Gaza Strip.

Method

Study subjects

The sample consisted of 824 students selected randomly from fifth and sixth class in West Bank and Gaza Strip schools. There were 281 boys (34.1%) and 543 were girls (65.9%). The age of children ranged from 10 to 14 years with mean age of 11.06 years (SD = 0.79).

Instruments

The data was collected from students by using the following questionnaires:

Demographic questionnaire

Demographic information about the participants was obtained using a survey developed by the authors. This questionnaire includes sex, age, and place of residence.

Learning disability

Al Quds University group (Thabet, Dajani, Abdallah, 2013 in press) developed and tested group-screening tests. Learning disability screening instruments for children in second to ninth grades

Arabic Language

Fifth to sixth grades

It consists of 11 tests with 68 questions and 365 units. Questions included the following: 1) Open and merge of tones which consisted of 25 sentences in which the child will chose the missed word from few words in a bracket, 2) Understanding reading of words consists of paragraph and the child had to answer 8 multiple choice questions, 3) Dictation of 40 words, 4) Copy and comprehension: in the first part the child was asked to listen to the teacher reading a paragraph and then he asked to write the paragraph again and the second part included comprehension about the child school , 5) Listening: in which 150 words were shown and the child should chose the names of animal in two minutes, 6) Words: in which the child is give 100 wrong words concerning food, and he had to choose the words concerning the food, 7) Listening, the teacher will read the 10 sentences above the picture and child will chose the right of 4 pictures, 8) Listening: the teacher will read a paragraph and then he will ask the child 8 questions, 9) Reading of words: in this test there are 10 sentences and the child will chose the right picture for the sentence, 10) Listening: the teacher will read a paragraph and then he will ask the child 9 questions, 11) Understanding reading of words: which consist of paragraph read it very carefully and have to answer 9 questions.

English Language

It consists of 4 tests with total number of 80 questions containing 179 units. It includes 1) Listening and Linguistic wealth in which the child will listen to his teacher naming in English a word which is correct for one of the 4 pictures, for 51 words; 2) Reading in which the child will read correctly 75 words, 3) Dictation, 4) Reading 20 words, 5) Reading 20 words; 6) Reading in which the child will chose the right picture. It consists of 17 questions, 7) Listening, and 8) Reading.

Mathematics

It consists of 8 tests with total number of 122 questions containing 209 units. Questions included the following: 1 and 2) Numbers, 3) Exercises including basic additions, subtractions, and multiply; 4) Exercises, 5) Figures; 6) Arithmetic questions 7) Triangles, and 8) Sentences and pictures.

Intelligent quotient (IQ)

5th grade -A form

1. General information test- 18 questions.
2. Arithmetic consequences test- 18 questions.
3. Domino test- 30 questions- 18 questions.
4. Cubic's test- 18 questions.

5th grade -B form

1. Vocabulary wealth- 30 questions.
2. Arithmetic questions test- 15 questions.
3. Fill the logical picture-15 questions.
4. Words in pictures test -30 questions.

6th grade -A form

1. General information test-30 questions.
2. Arithmetic consequences test -30 questions.
3. Domino test-30 questions.
4. Cubic's test-30 questions.

6th grade -B form

1. Vocabulary wealth- 30 questions.
2. Arithmetic questions test- 30 questions.
3. Fill the logical picture-30 questions.
4. Words in pictures test -30 questions.

Procedure of the study

The study team held meetings and conducted training for 6 hours to 50 teachers working in schools in West Bank and Gaza Strip. We explained to them the aim of the study and gave them prepared list of number of children to be interviewed in each class. A cover letter was send to each child's parent asking for their agreement and permission from them to include and interview their children in the study. Sociodemographic information questionnaire was send to parents and was collected the returned ones from children. Each interview with the targeted child lasted for 120 minutes. Children marks in the tested subjects (Arabic, English, and Mathematics) were given by school administration. The data collection was carried out from April to May 2005.

Statistical analysis

For this study we used SPSS ver. 18 to analyse the data. Frequencies and percentages were calculated after recoding the learning disability into three categories (no disability, learning difficulties, and learning disabilities). Means and Standard Deviations of different study subjects marks were calculated. Differences between means of subjects were tested using t independent test. Correlations between means were tested using Pearson Correlation Coefficient test. The p value was considered significant if $p = < 0.05$.

Results

Sociodemographic characteristics of the stud sample

The study sample consisted of 824 students selected randomly from fifth and sixth class in West Bank and Gaza Strip. Two hundred and eight one were boys (34.1%) and 543 were girls (65.9%). According to class, 55% children were enrolled in fifth class, 45% were enrolled in sixth class. According to place of residence, 65.5% were from West Bank and 34.5% were living in Gaza Strip. According to type of school, 47% were enrolled in governmental schools, 44.1% enrolled in UNRWA schools, and 8.8% enrolled in private schools. According to parental education, 38.4% of the fathers finished less than secondary education. 31.9% had secondary certificate, and 81.1 % had university degree. While, 44.5% of mothers finished less than secondary education, 31.4% finished secondary education, and 11.4% finished university

Table 1 : Sociodemographic characteristics of the study sample (N = 824)

Items	N	%
Gender		
Male	281	34.1
Female	543	65.9
Class		
Fifth class	453	55.0
Sixth class	371	45.0
Place		
West Bank	540	65.5
Gaza Strip	284	34.5
Types of school		
Governmental	372	47.0
UNRWA	349	44.1
Private	70	8.8
Paternal education		
Not educated	35	4.6
Less than secondary	260	33.8
Secondary	245	31.9
Diploma	73	9.5
University	139	18.1
Post graduate	17	2.2
Maternal education		
Not educated	48	6.2
Less than secondary	343	44.5
Secondary	242	31.4
Diploma	37	4.8
University	88	11.4
Post graduate	12	1.6

Means and Standard Deviations of student grads (GPA) in Arabic, English, and mathematics according to school record

From the records of the students in school, the general grade of the students was 74.1 (SD = 15.5), Arabic language as first language mean was 71.5 (SD = 17.9), mean English as the second language was 67.9 (SD = 18.8), and mean mathematics was 68.9 (SD = 17.6).

Table 2: Means and standard deviations of the student's subjects according to school records

Subjects	Mean	SD
Arabic Language	71.5	17.9
English Language	67.9	18.8
Mathematics	68.9	17.6
General	74.1	15.5

Means and standard deviations of student grads in Arabic, English, and mathematics according to study sample

The results of the study showed that mean Arabic Language scores was 187.7 (SD = 84.9), mean English Language scores was 119.4 (SD = 36.9), and mean Mathematics scores was 77.6 (SD = 12.6).

Table 3: Means and standard deviations of the student's subjects according to study sample

Subjects	Mean	SD
Arabic Language	187.7	84.9
English Language	119.4	36.9
Mathematics	77.6	12.6

Means and standard deviations of IQ tests

The study showed that IQ test (first part) mean scores for 79.8 (SD =10.74) and for the second part it was 84.60 (SD = 9.22).

Table 4 : Means and standard deviations of IQ tests

	N	Minimum	Maximum	Mean	SD
Total IQ for the first part	777	.00	86.00	79.71	10.74
Total IQ for the second part	772	.00	90.00	84.60	9.22

Prevalence of learning disability

The study showed that 9% of children had learning difficulties, 27.8% had learning disabilities, and 63.2% had no problems in Arabic Language. For English language, 65% of children had problems, 10.5% had learning difficulties, and 24.5 % had learning disabilities. While 70.2% of children had no any learning problems in mathematics, 12.1% had learning difficulties, and 17.7% had learning disabilities.

Table 5: Prevalence of learning difficulties and disabilities

Subjects	*Normal*	*Learning difficulties*	*Learning disabilities*
Arabic Language	*63.2*	*9.0*	*27.8*
English Language	*65.0*	*10.5*	*24.5*
Mathematics	*70.2*	*12.1*	*17.7*

Gender differences in rate of learning problems

In order to find the differences between the boys and girls in rate of learning difficulties and disabilities, Chi Square test was applied. The results showed that 4.7% of girls reported learning difficulties in Arabic Language compared to 4.2% of boys, 17.9% of girls compared to 9.9% of boys reported learning disabilities. This did not reach statistically significant differences in children (χ^2 =2.03, df =2, p =0.36).

For English language, 8% of girls reported learning difficulties compared to 2.5% of boys, 13.5% of girls compared to 11% of boys reported learning disabilities. This did not reach statistically significant differences in children (χ^2 =3.52, df =2, p =0.16). This also was for mathematics in which 6.1% of girls reported learning difficulties compared to 6.1% of boys, 12.6% of girls compared to 5.1% of boys reported learning disabilities. This did not reach statistically significant differences in children (χ^2 =4.16, df =2, p =0.17).

Table 6: Sex differences in rate of learning problems

	Male	Female	Total	(χ^2	p
Arabic Language					
Normal	29.2	34.0	63.2	2.03	0.36
Learning difficulties	4.2	4.7	9.0		
Learning disability	9.9	17.9	27.8		
English Language					
Normal	29.5	35.5	65.0	3.52	0.16
Learning difficulties	2.5	8.0	10.5		
Learning disability	11.0	13.5	24.5		
Mathematics					
Normal	32.8	37.4	70.2	4.16	0.17
Learning difficulties	6.1	6.1	12.1		
Learning disability	5.1	12.6	17.7		

** P<0.01 *P<0.05 // P>0.05

In order to find the differences between the two sites in rate of learning difficulties and disabilities, chi square test was done. The results showed that 7.5% of children from Gaza Strip reported learning difficulties in Arabic Language compared to 1.4% in the West Bank, 18.9% of children from Gaza compared to 9% from West Bank reported learning disabilities. This reached statistically significant differences toward Gaza Strip children (χ^2 =5.98, df =2, p =0.05).

For English language, 4.5% of children from Gaza Strip reported learning difficulties compared to 6% from West Bank and 12% of children from Gaza reported learning disabilities compared to 12.5% from West Bank. This also was for mathematics in which 5.6% of children from Gaza compared to 6.6% from West Bank reported learning difficulties and 5.6% of children from Gaza Strip reported learning difficulties compared to 12.1% from West Bank. No site differences in learning disability in English language and Mathematics rates.

Table 7: Site differences in learning problems

	West Bank	Gaza Strip	Total	X2	p
Arabic Language					
Normal	26.9	36.3	63.2	5.98	0.05*
Learning difficulties	1.4	7.5	9.0		
Learning disability	9.0	18.9	27.8		
English Language					
Normal	38.0	27.0	65.0	0.8	//0.66
Learning difficulties	6.0	4.5	10.5		
Learning disability	12.5	12.0	24.5		
Mathematics					
Normal	53.0	17.2	70.2	4.8	//0.09
Learning difficulties	6.6	5.6	12.1		
Learning disability	12.1	5.6	17.7		

** P<0.01 *P<0.05 // P>0.05

In order to find the differences between the types of schools in rate of learning difficulties and disabilities, Chi Square test was done. The results showed that 3.9% of children from URWA schools reported learning difficulties in Arabic Language compared to 4.8% from governmental schools, 13.5% of children from UNRWA schools compared to 12.6% from governmental schools and 1, 4% from private schools reported learning disabilities.

For English language, 5.6% of children from UNRWA reported learning difficulties compared to 4.6% from governmental schools, 0.5% of children from private schools reported learning disabilities compared to 7.6% from UNRWA schools and 16.2% from governmental schools. The results showed that there were statistically significant differences in English language level toward children enrolled in governmental schools than those in UNRWA and private schools (χ^2 = 10.6, d.f = 2, p < 0.03).

This also was for mathematics in which 1.1% of children from private schools reported learning difficulties compared to 2.7% from UNRWA and 8.2% from governmental schools, 2.2% from private schools reported learning disabilities compared to 3.3% from UNRWA and 12.5% from governmental schools. This reached statistically significant level toward children from governmental schools in both mathematics learning difficulties and disabilities than UNRWA and private school (χ^2 = 10.6, d.f = 2, p < 0.03).

Table 8: School differences in rate of learning problems

	Governmental	UNRWA	Private	Total	X2	p
Arabic Language						
Normal	36.7	27.1	0.0	63.8	9.3	*0.05
Learning difficulties	4.8	3.9	0.0	8.7		
Learning disability	12.6	13.5	1.4	27.5		
English Language						
Normal	40.6	24.4	0.5	65.5	4.04	//0.39
Learning difficulties	4.6	5.6	0.0	10.2		
Learning disability	16.2	7.6	0.5	24.4		
Mathematics						
Normal	39.1	28.8	2.2	70.1	10.6	*0.03
Learning difficulties	8.2	2.7	1.1	12.0		
Learning disability	12.5	3.3	2.2	17.9		

** P<0.01 *P<0.05 // P>0.05

Relationship between school records scores of subjects and total scores of student's subjects

In order to find the relationship between the scores of children according to schools records in the three subjects and total scores of subjects tested by children themselves, correlation Coefficient test using Pearson correlation test was done. The results showed that total scores of Arabic language from schools records was positively correlated with total scores

of Arabic (r= 0.13, p = 0.001), English Language (r = 0.11, p = 0.001) and mathematics by children (r= 0.11, p = 0.001). Also, total scores of English language from schools records was positively correlated with total scores of Arabic (r= 0.10, p = 0.001) and mathematics by children (r= 0.0.08 p = 0.001) and not with English language scores. There was positive correlations between total scores of mathematics from school records and total scores of Arabic (r= 0.14, p = 0.001), English Language (r = 0.13, p = 0.001), total Mathematics scores tested by children themselves (r =0.15, p = 0.001).

** P<0.01 *P<0.05 // P>0.05

Relationship between school records scores of subjects and total scores of student's subjects

In order to find the relationship between the scores of children according to schools records in the three subjects and total scores of subjects tested by children themselves, correlation Coefficient test using Pearson correlation test was done. The results showed that total scores of Arabic language from schools records was positively correlated with total scores of Arabic (r= 0.13, p = 0.001), English Language (r = 0.11, p = 0.001) and mathematics by children (r= 0.11, p = 0.001). Also, total scores of English language from schools records was positively correlated with total scores of Arabic (r= 0.10, p = 0.001) and mathematics by children (r= 0.0.08 p = 0.001) and not with English language scores. There was positive correlations between total scores of mathematics from school records and total scores of Arabic (r= 0.14, p = 0.001), English Language (r = 0.13, p = 0.001), total Mathematics scores tested by children themselves (r =0.15, p = 0.001).

Table 9: Pearson Correlation Coefficient test

	Rate student in Arabic language at the end of the year former	Rate student in English language at the end of the year former	Rate student in mathematics at the end of the school year former
Total scores of Arabic language	.13 **	.11 **	.11 **
Total scores of English language	.10 **	.07	.08 *
Total scores of mathematics	.14 **	.13 **	.15 **

Discussion

The aim of the study was to estimate the prevalence rate of learning disabilities and difficulties in fifth and sixth class Palestinian children in West Bank and Gaza Strip.

The study showed that 27.8% of Palestinian children had learning disabilities in Arabic Language, 24.5 % had learning disabilities in English Language, and 17.7% had learning disabilities in mathematics. The study showed no statistically significant differences in gender of children related to learning disability. Our study findings rates of disability were higher than other studies in the same field.

Our study prevalence rate of LD is higher that found in other studies. In the United States, LD prevalence rates range from 2 to 10 percent (APA, 2002) and reading disabilities affect at least 80 percent of the LD population (Lerner, 1989; Lyon, 1995), though percentages can vary as a function of criteria used, ranging, for example, from 5 to 17.5 percent in children of school age (Katusic, Colligan, Barbaresi, Schaid, & Jacobsen, 2001).

Our study rates of learning disabilities were even higher than those in African countries. In a survey in Kweneng District in Uganda of a sample of 2,256 children, over eight percent (8.1%) of these children were found to have serious learning difficulties. In another district of the North East, 11,648 schoolchildren were tested and 8.9 percent of them had learning difficulties. However, over 37,000 children in primary and junior secondary schools are requiring special needs services in Botswana, although a report by Kisanji (1994) indicated the figure should be over 60,000. There are also 5,000 children with other disabilities. Some disability counts reported for other African countries are over 20,000 children with special needs in Ethiopia, over 70,000 in Kenya, more than 2,000 students with specific disabilities in schools in Namibia, over 1,500 with specific disabilities) which is less than 0.1 percent of those expected to receive help) in Zambia, more than 4,000 with specific disabilities in Tanzania, and more than 1 million children requiring special needs services in Nigeria (Uganda National Institute for Special Education, 1995). As a rough estimate, children with learning difficulties make up 20 percent of any given class. These are children who are experiencing problems in specific learning activities in the class and hence perform below average.

The results showed that 7.5% of children from Gaza Strip reported learning difficulties in Arabic Language compared to 1.4% in the West Bank, 18.9% of children from Gaza compared to 9% from West Bank reported learning disabilities. This reached statistically significant differences toward Gaza Strip children. For English language, 4.5% of children from Gaza Strip reported learning difficulties compared to 6% from West Bank and 12% of children from Gaza reported learning disabilities compared to 12.5% from West Bank. This also was for mathematics in which 5.6% of children from Gaza compared to 6.6% from West Bank reported learning difficulties and 5.6% of children from Gaza Strip reported learning difficulties compared to 12.1% from West Bank. The results showed that 3.9% of children from URWA schools reported learning difficulties in Arabic Language compared to 4.8% from governmental schools, 13.5% of children from UNRWA schools compared to 12.6% from governmental schools and 1,4% from private schools reported learning disabilities.

For English language, 5.6% of children from UNRWA reported learning difficulties compared to 4.6% from governmental schools, 0.5% of children from private schools reported learning disabilities compared to 7.6% from UNRWA schools and 16.2% from governmental schools. This reached statistically significant level toward children from governmental schools in learning difficulties and learning disabilities from UNRWA schools. This also was for mathematics in which children from governmental schools had significantly reported in both learning difficulties and disabilities than private and UNRWA schools.

Our study was consistent with study of Guatemala and Spain children (Jim´enez and de la Cadena, 2007). In the interviews with Guatemalan teachers 178 children were identified with reading and spelling disabilities. This represents 32 percent of the total sample of 557 students. Eleven percent were identified with reading disabilities, 9 percent with spelling

disabilities, and 12 percent with reading and spelling disabilities. In the Spanish sample, 291 students (i.e., 28 percent) of the 1,408 children were identified with LD in reading and spelling. Spanish teachers reported that 6 percent of the children showed reading disabilities, 8 percent spelling disabilities, and 14 percent both. In the Guatemalan sample, 17 percent were identified with a specific LD (8 percent were dyslexics and 9 percent showed spelling disabilities). Only 5 percent, however, were identified with a specific LD in the Spanish sample (2 percent were dyslexics and 3 percent showed spelling disabilities). These findings suggest that, although reading disorders are increasingly believed to have a biological origin (e.g., Kaplan et al., 2002; Olson, 2002), not only linguistic variables but also cultural and environmental variables can play important roles in the frequency and haracterization of reading problems.

Most practitioners and researchers currently report a prevalence of mathematical disabilities between 3% and 14% of children (Barbaresi, Katusic, Colligan, Weaver, & Jacobsen, 2005; Desoete, 2007; Dowker, 2005; Shalev, Manor, & Gross-Tsur, 2005). Mathematical and reading disabilities co-occur more frequently as comorbidities than would be expected by artifactual causes (chance, sampling bias, population stratification, definitional overlap, and rater biases). The comorbidity rate varies from 17% to 43% (Desoete, 2008; Fuchs & Fuchs, 2002). In addition, the severity of the mathematical disability is found to be associated with a lower IQ, inattention, and also with spelling problems (Shalev et al., 2005).

Bravo-Valdivieso (2001) suggested that it is likely that the prevalence of children with LD in South American countries is greater than in the United States or in European countries because of factors like poor nutrition, cognitive-verbal development, and unsanitary conditions. He also pointed out that in South American countries we find many children with "general learning problems" that arise from their psychological or social immaturity for school learning. These learning problems may be greater in impoverished areas than in middle-class schools.

The high rate of learning disability in this study could be due to class sizes and conditions are also matters of concern in Palestinian Territories. A typical class in Palestinian schools could contain as much as 45 or even more pupils, usually made up of a mixture of abilities, negative attitudes towards school, low levels motivation, scarcity of qualified teachers. These situations make it difficult for children with disabilities to receive the extra help they need. Many teachers in the school system have not received relevant training on how to identify children with learning problems and hence are unable to provide remedial assistance to such children even under the best of conditions. Despite these situations, little consideration is given at the end of the school year in determining how children progress from one class/standard to another. There are two basic patterns of progressing from one class to another in Palestinian school systems—promotion based on performance or by automatic promotion—and each causes difficulties for pupils with learning disabilities. In a situation where the promotion of children is based on their performance on examinations, repeated failure makes the child with learning difficulties feel frustrated, demoralized, and dejected. By repeating a class, he or she remains in the same class with younger children. This poses problems that can lead to dropping out of school. In the other situation where promotion is automatic, the child with learning disabilities finds himself or herself being promoted to higher classes without learning much in school because children with learning problems are usually neglected. Many children with learning difficulties in schools are a result of these confusions in the school, created because of conditions in the school system.

Clinical implications

Special education evolved as a means of providing specialized interventions primarily through prescribed instruction based on individual student progress on individualized objectives. A model oriented toward special education is appropriate for the area in many ways. It provides an opportunity for the classroom teacher or the peer specialized teacher to be able to identify children who may have learning difficulties in the classroom, determining why some of the children in the class are not doing well and creating a situation for improvement through assessment, referral, and the design of individualized instruction. The beauty of this model is that it tries to minimize failure before and after intervention. The difficulties of children in these schools are identified and they are given the opportunity to succeed at their own rates and in their own ways.

The results presented in this study elucidate that in the Palestinian culture, children's education is considered to be a family responsibility, and their academic performance may have a reciprocal impact on parent– child interactions. The critical role of the family in children's education suggests the need for family-based intervention in working with Palestinian children with learning disabilities. Although individualized educational plans to address learning disabilities in the school context are child focused, there is a need for family collaboration and support in assisting children

Teacher preparation is an issue that merits special emphasis as the discipline of LD goes forward. To what extent do teachers of students in general education need preparation to serve students with LD? To what extent should countries invest resources in specialists trained to work with students with LD. The policy also recommends the establishment of Intervention Teams in all schools. It would greatly improve the teaching and learning environment in classrooms if this recommendation were fully implemented. A cadre of specially trained teachers, besides being able to provide specialized services, could form the core of the school team, and each team would have the responsibility for putting in place procedures for peer teaching and/or cooperative teaching. The center should be staffed with fully qualified professionals, is the only one in the country that offers referral and placement services.

The need for the development of opportunities in developing countries for the preparation of teachers of children with special needs is critical.. Training in one's country will reflect the culture and the local needs. In most cases, training outside one's culture and environment does not take into account the shortfalls and the difficulties that exist in a given country.

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