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Managing Dyslexia in Pakistan

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ABSTRACT

Objective: This study was conducted in special school of Young Muslim Inclusive Education System Wah Cantt, from 2016 till 2023.

Methodology: This cross sectional study, Initially a total of 48 physically healthy children who could communicate verbally but could not manage in mainstream were included. They were placed for 3 months in the school and assessed further by HARP dyslexia screening tool. After these sessions, a statement was issued according to their needs and 37 young persons were identified with dyslexia. Seven children were excluded due to their profound learning disabilities and placed for transition plan. After the diagnosis, care team made (IP) intervention plan for each student that included school and other activities. All the participants after completion of 3 months were assessed for progress and their progress report was noted.

Results: The mean age of the children was 14.05 ± 3.325 years, with maximum 19 (51.4%) children having age from 10-15 years. Mostly 26 (70.3%) children in the study presented with learning disability followed by 11 (29.7%) who presented with developmental delay. The average overall progress of 68.38% with SD of 15.91% was observed in this study sample. More than 75% goals were achieved in 20 (54.1%) children followed by (50-75%) goals were achieved in 11 (29.7%) children. Only 6 (16.2%) children had less than 50% progress after the IEP. The association of progress with age of the child showed that the children in age group of 10-15 years showed significantly (p-value < 0.05) higher rate of progress (73.68% vs. 38.46%) as compared to children of other age groups.

Conclusion: Interventions in education may give students new, efficient reading and learning strategies. Adolescents with dyslexia can learn new reading abilities by working with a qualified professional. A dyslexic child may benefit from a slower learning pace in the classroom since it allows them to absorb material more thoroughly.

Key Words: Dyslexia, Developmental Delay, Individualized Education Program,

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Introduction

A neurodevelopmental disorder called dyslexia affects a person's ability to read, write, and spell. It's categorised as a learning challenge. The phrase was first used 130 years ago by German ophthalmologist and professor Rudolf Berlin, who noticed that some of his adult patients were having trouble seeing written words. Their vision did not appear to be an issue to him. Therefore, he surmised, their problems had to be genetic in nature. He wrote “Percy F. – a well-grown lad, aged 14 – is the eldest son of intelligent parents, the second child of a family of seven. He has always been a bright and intelligent boy, quick at games, and in no way inferior to others of his age. His great difficulty has been – and is now – his inability to learn to read. This inability is so remarkable, and so pronounced, that I have no doubt it is due to some congenital defect”.[1,2

The study of cognitive disabilities advanced relatively slowly until 1925, when neuropathologist Samuel T. Orton of the State University of Iowa released his first article on the condition. This was because learning disabilities were hard to diagnose because they frequently coexisted with other disorders. The Dyslexia Debate, published in 2014, is the most well-known contemporary critique of the term. Ten percent (10%) of people in the UK are dyslexic as of right now.[3]

Dyslexia is identified as a disability as defined in the Equality Act 2010. However, diagnosing and treating dyslexia is not straight forward. It is not a mental illness so diagnosed by combined assessment by teachers, psychiatrists, educational psychologists and speech and language pathologist. In UK, the British Dyslexia Association trains and appoints approved assessors who screen and diagnose with detailed reports according to guidelines. These are not only for children in education but also for working adults.[4]

In Pakistan, historically dyslexia was mostly misunderstood as a part of mental retardation but there is recent emerging awareness about learning difficulties[5.] The article "Understanding and Overcoming Dyslexia" issued by the Ministry of Federal Education and Professional Training (December 23) shows that at present, around 12 million children in Pakistan are dyslexic. Approximately 15 to 20 percent of students in Pakistani educational institutions, across all classes, struggle with dyslexia, according to Iram Mumtaz, Chairperson of IDEAS and Department of Social Welfare, Punjab.[6.]

There is increasing awareness of learning problems in Pakistan. However, it is still hard to make people understand that children with reading dyslexia are unable to read Quranic verses as well. Dyslexia is not treated with drugs. Alternatively, educational interventions can impart new and efficient reading and learning strategies. Youngsters with dyslexia can learn new reading abilities by working with a qualified professional. A youngster with dyslexia may benefit from a lesson that moves more slowly at times.[7]

In Pakistan, there are professionals helping children with Dyslexia but there are no standard guidelines. Another major problem is lack of acceptance of dyslexia in adults. Therefore, this study was planned to find out the pathway of managing dyslexia in Pakistan as compared to general set standards elsewhere in other countries.

Methodology

Initially in this cross sectional study 48 children & adolescents from age 5 to 18 years of age with additional needs, enrolled in special school of Young Muslim Inclusive Education System Wah Cant, from 2016 till 2023, were selected. These were physically healthy children who could communicate verbally but could not manage in mainstream. They were placed for 3 months in the school and assessed further by HARP dyslexia screening tool. After these sessions, a statement was issued according to their needs and 37 young persons were identified with dyslexia. Seven children were excluded due to their profound learning disabilities and placed for transition plan i.e. they learn daily living or vocational skills. According to Pakistan labour laws, young people are not allowed to work till age 17. The other 4 required medication for aggression and could not adjust in group settings.

After the diagnosis, care team made (IP) intervention plan for each student that included school and other activities. These adolescents were taught according to the IP for further 3 months and then their Individual education plan was finalised.

Demographic information including age along with general information regarding diagnosis, scale applied, Individualized Education Plan (IEP) , and their progress were recorded on a predesigned Performa. The IEP plan was consisted on phonological awareness, visual and auditory processing, segmentation and blending, multisensorial approach to read and write. All the participants after completion of 3 months were assessed for progress and their progress report was noted.

All these data was entered and analysed with the help of SPSS v. 25. Quantitative data was presented with the help of mean and standard deviation. Qualitative data was presented as frequency and percentage. Chi-square test was applied to assess the significance of association with progress. P-value ≤ 0.05 was considered significant.

Results

In this study a total of 37 children were enrolled. The mean age of the children was 14.05 ± 3.325 years, with maximum 19 (51.4%) children having age from 10-15 years. Mostly 26 (70.3%) children in the study presented with learning disability followed by 11 (29.7%) who presented with developmental delay. Dyslexia screening test was applied on all children and SPM scale along with Dyslexia screening test was used in 6 (16.2%) children and

CPM scale with Dyslexia screening test was used in 4 (10.8%) children as shown in table I.

Table I: Distribution of demographic characteristics of the study sample.

Characteristics	N	%
Age of the children		
Mean ± SD	14.05 ± 3.325	
Categorized age		
< 10	5	13.5
10-15	19	51.4
> 15	13	35.1
Diagnosis		
Developmental Delay	11	29.7
Learning Disability	26	70.3
Scale Applied		
Dyslexia screening test	27	73.0
Dyslexia screening test/SPM	6	16.2
Dyslexia screening test/CPM	4	10.8

A comprehensive Individualized Education Program (IEP) consisting of phonological awareness, visual and auditory processing, segmentation and blending, multisensorial approach to read and write was used in all children and a significantly improved prognosis was observe. The average overall progress of 68.38% with SD of 15.91% was observed in this study sample. More than 75% goals were achieved in 20 (54.1%) children followed by (50-75%) goals were achieved in 11 (29.7%) children. Only 6 (16.2%) children had less than 50% progress after the IEP as elaborated in table II.

Table II: Distribution of progress in study sample.

Characteristics	N	%
Overall Average Progress (%)		
Mean ± SD	68.38 ± 15.901	
Progress (%)		
< 50%	6	16.2
50 - 75 %	11	29.7
> 75%	20	54.1

The association of progress with age of the child showed that the children in age group of 10-15 years showed significantly (p-value < 0.05) higher rate of progress (73.68% vs. 38.46%) as compared to children of other age groups. And minimum progress rate (20%) was observed among children of less than 10 years. The diagnosis of the children also showed a significant (p-value < 0.05) association with progress rate of > 75%. It was observed that this rate of progress was significantly higher (65.38% vs. 27.27%) among children with learning disability as compared to children presented with developmental delay. The application of scale also had significant (p-value < 0.05) association with test applied for screening. It was observed the children on which only Dyslexia screening test was applied showed highest rate of > 75% progress among (66.67%) children as compared to children on which SPM scale (33.33%) or CPM scales (0%) were applied along with Dyslexia screening test as elaborated in table III.

Table III: Association of Progress with Age, Diagnosis and Scale applied

Variables	Progress (%)			Total	P-value
	< 50%	50 - 75 %	> 75%		
Age of the Child					
< 10	3	1	1	5	0.016
10-15	1	4	14	19	
> 15	2	6	5	13	
Diagnosis					
Developmental Delay	5	3	3	11	0.006
Learning Disability	1	8	17	26	
Scale Applied					
Dyslexia screening test	1	8	18	27	0.003
Dyslexia screening test/SPM	2	2	2	6	
Dyslexia screening test/CPM	3	1	0	4	
Total	**6**	**11**	**20**	**37**	

Discussion

Looking for an explanation on why some people have dyslexia? Many people believe that dyslexia results from difficulties translating phonological information into lexical codes, which is supported by decades of study that reflects a focused search for a single explanation.[8] However, reading is a very complicated task that calls on a wide range of efficient processes, and dyslexic readers have been shown to have a variety of visual issues. Similar behavioural patterns might have a variety of origins, and dyslexia is not exclusively caused by one underlying impairment. Phonological, visual, and more general processing abnormalities (such as those involving temporal integration and context) may be present in dyslexia, and there may be significant overlap between these deficiencies. It is likely that varied combinations of these elements will contribute to dyslexia in different people.[9, 10]

Numerous examples of experimental studies about categorical perception, phonological awareness, verbal short-term memory, pseudo word repetition, spoken language processing prediction, mirror invariance, and structural and functional brain imaging have been given by several researchers. The limitations and variances that are

seen in dyslexics are rather noticeable. It has been determined that a lack of prior reading experience may be a prevalent cause. It has been suggested that certain dyslexics read significantly less than non-dyslexics. In fact, it should come as no surprise that people participate in challenging and irritating activities somewhat less.[11,12]

In this present study a comprehensive Individualized Education Program (IEP) consisting of phonological awareness, visual and auditory processing, segmentation and blending, multisensory approach to read and write was used in all children and a significantly improved prognosis was observe. The average overall progress of 68.38% with SD of 15.91% was observed in this study sample. More than 75% goals were achieved in (54.1%) children followed by (50-75%) goals were achieved in (29.7%) children. Only (16.2%) children had less than 50% progress after the IEP. Similar results were shown by other studies like study by Gkora V et al[13] and Akcin FN[14], who assessed the impact of IEP on improvement of dyslexia children.

Studies have shown a significant association between dyslexia and socioeconomic status, appropriate extracurricular reading, reading composition books, maternal malnutrition during pregnancy, and children's daily exposure to second-hand smoking at home, which provide a theoretical basis and reference value for subsequent interventions for children with dyslexia and for the prevention of the occurrence of dyslexia.[15]

The results of this present study revealed as strong relationship of age with high progress rate of the dyslexia children, it was noted that the children in age group of 10-15 years showed significantly (p-value < 0.05) higher rate of progress (73.68% vs. 38.46%) as compared to children of other age groups. And minimum progress rate (20%) was observed among children of less than 10 years. The diagnosis of the children also showed a significant (p-value < 0.05) association with progress rate of > 75%. It was observed that this rate of progress was significantly higher (65.38% vs. 27.27%) among children with learning disability as compared to children presented with developmental delay.

Research findings indicate that youngsters might mitigate the risk of dyslexia by cultivating reading habits during their academic pursuits. This approach can enhance their reading experience and heighten their awareness of orthographic conventions. The use of electronic devices by kids has also been the subject of some research, and the findings indicate that the more time kids spend using these devices, the higher their chance of developing dyslexia.[17]

During a crucial learning period like school age, a lot of kids spend more time engaging in leisure activities. This can lead to behavioural and emotional issues in addition to physical impairments like myopia.[18] Consistent with the findings of most research, it was discovered that children with Chinese dyslexia may benefit from increased frequency of active reading, fairy tale books, and composition-based extracurricular books .[19] Composition books are a more sensible and beneficial way to practise reading comprehension than comic books when it comes to this. Children with dyslexia sometimes require more time and effort to finish their homework, which can easily lead to dissatisfaction and the eventual development of negative self-awareness.[20] Children who experience negative self-awareness may become less motivated to read, which can lead to a difficult-to-break cycle. As a result, parents and educators must be more understanding of dyslexic kids, show them more tolerance, and motivate them to participate in more reading-related activities.[21]

Conclusion

Reading and learning new skills can be effectively taught through educational interventions. Youngsters with dyslexia can learn new reading abilities by working with a qualified professional. Lessons can be slowed down to offer dyslexic students extra time to cover material. There was a clear correlation between the children with dyslexia's high advancement rate and their age. When compared to children in other age groups, children in the 10–15-year age group had a much higher rate of improvement.

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