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LEARNING DISORDER: THEIR PSYCHOLOGY, BEHAVIOUR AND EDUCATIONAL PROGRAMMES

Paediatrics

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ABSTRACT

The purpose of the study to examine Early diagnosis of learning disorder positively significant increases of success in educational difficulties and there will be significant difference gender differences on educational difficulties in school going children. Sample for the study includes 150 students (75 adolescent boys, and 75 adolescent girls) between the age group of 11-18 years, at different schools from chhindwara (Madhya Pradesh). The data were analyzed with the help of paired "t" test Story recall (memory) boys mean 7.63, and girls mean 6.76 and t value 2.813 no significant at >0.05 level , writing fluency boys mean 7.48, and girls mean 5.73 and t value 7.097 significant at <0.05 level, Reading Fluency boys mean 5.32, and girls mean 2.84 and t value 12.550 significant at <0.05 level, spelling boys mean 7.61, and girls mean 4.91 and t value 8.746 significant at <0.05 level, and mathematics boys mean 8.08, and girls mean 5.27 and t value 14.023 significant at <0.05 level. Conclusion- showed that learning disorder, clinically factors and adaptive behaviour are the major common stressors factor in triggering academic difficulties among school going boys and girls. This highlights the importance of periodic assessment of both behaviour and academic records of children in our environment. Parents and Teachers are encouraged to pay more attention to those students with academic and behavioural problem by closer supervision of their educational and other social activities so as to improve their academic performance and behaviour problem

KEYWORDS

Woodcock-Johnson Tests of Achievement, Behaviour Assessment system for children (BASC-2), counselling and guidance.

INTRODUCTION

Learning disorder are neurologically-based processing problems. These processing problems can interfere with learning basic skills such as reading, writing and/or math. They can also interfere with higher level skills such as organization, time planning, abstract reasoning, long or short term memory and attention. It is important to realize that learning disorder can affect an individual's life beyond academics and can impact relationships with family, friends and in the workplace.

Since difficulties with reading, writing and/or math are recognizable problems during the school years, the signs and symptoms of learning disorder are most often diagnosed during that time. However, some individuals do not receive an evaluation until they are in post-secondary education or adults in the workforce. Other individuals with learning disorder may never receive an evaluation and go through life, never knowing why they have difficulties with academics and why they may be having problems in their jobs or in relationships with family and friends. Such delays include atypical patterns of development in cognition, communication, emergent literacy, motor and sensory abilities, and/or social–emotional adjustment that may adversely affect later educational performance.

Development in each of these domains may be related to individual variations in rates and patterns of maturation, environmental factors such as language exposure, and quality of learning opportunities. Although the focus of this paper is on developmental rather than academic expectations, it is recognized that adequate development across multiple domains is essential for subsequent school success. It also is important to recognize that when children are exposed to high quality learning opportunities prior to kindergarten, they are less likely to experience school failure and be misidentified as having LD in the early grades.

TYPES OF LEARNING DISORDER

1 Auditory Processing Disorder (APD)- Also known as Central Auditory Processing Disorder, this is a condition that adversely affects how sound that travels unimpeded through the ear is processed or interpreted by the brain. Individuals with APD do not recognize subtle differences between sounds in words, even when the sounds are loud and clear enough to be heard. They can also find it difficult to tell where sounds are coming from, to make sense of the order of sounds, or to block out competing background noises.

2 Dyscalculia- A specific learning disorder that affects a person's ability to understand numbers and learn math facts. Individuals with this type of LD may also have poor comprehension of math symbols, may struggle with memorizing and organizing numbers, have difficulty telling time, or have trouble with counting.

3 Dysgraphia- A specific learning disorder that affects a person's handwriting ability and fine motor skills. Problems may include illegible handwriting, inconsistent spacing, poor spatial planning on paper, poor spelling, and difficulty composing writing as well as thinking and writing at the same time.

4 Dyslexia- A specific learning disorder that affects reading and related language-based processing skills. The severity can differ in each individual but can affect reading fluency, decoding, reading comprehension, recall, writing, spelling, and sometimes speech and can exist along with other related disorders. Dyslexia is sometimes referred to as a Language-Based Learning Disability.

5 Language Processing Disorder- A specific type of Auditory Processing Disorder (APD) in which there is difficulty attaching meaning to sound groups that form words, sentences and stories. While an APD affects the interpretation of all sounds coming into the brain, a Language Processing Disorder (LPD) relates only to the processing of language. LPD can affect expressive language and/or receptive language.

6 Non-Verbal Learning Disabilities- A disorders which is usually characterized by a significant discrepancy between higher verbal skills and weaker motor, visual-spatial and social skills. Typically, an individual with NLD (or NVLD) has trouble interpreting nonverbal cues like facial expressions or body language, and may have poor coordination.

7. Visual Perceptual/Visual Motor Deficit- A disorder that affects the understanding of information that a person sees, or the ability to draw or copy. A characteristic seen in people with learning disabilities such as Dysgraphia or Non-verbal LD, it can result in missing subtle differences in shapes or printed letters, losing place frequently, struggles with cutting, holding pencil too tightly, or poor eye/hand coordination.

Characteristics- Students with learning disabilities are typical children and have average or above average intelligence. Their disability affects the brain and how it receives and processes information as well as storing, responding, and communicating information (NCLD Editorial Team, 2014). A learning disorder can affect the student's ability to read, spell, write, or do math. In order to find out if a student has a learning disorder, a team of people (parents,

teachers, school psychologists, other professionals) need to complete multiple observations and comprehensive evaluations (NCLD, 2014). The team then makes the determination, based on all available data, if the student is eligible for special education services under the learning disorder label.

PURPOSE OF STUDY

- Many studies have been no reported or compared the cognitive functioning of learning disorder children with the profile of those children who have learning difficulties but do not have any diagnosable –areas of difficulties, behavioural and management.
- So many Indian children with learning difficulties but without any diagnosable disorder or disability have remained at the periphery probably because of under reporting of this population in the clinical set-ups to seek help.
- The present study has attempting to overcome some of their lacunas in the field of learning diagnosis of learning disorder of various groups of school going children and carries implications for future remedial management training programmes.

HYPOTHESIS

- Early diagnosis of learning disorder positively significant increases of success in educational difficulties
- There will be significant difference gender differences on educational difficulties in school going children.

MATERIAL & METHODS:

1. Place of Study: This study was conducted at Shrivastava clinic, chhindwara Madhya Pradesh

2. Period of Study: January 2017 to December 2017 (12months)

3. Inclusion Category
- Adolescence (boys and girls) (Age group 11 to 18 years)
- Adolescence (boys and girls) who referred by doctors for and poor scholastic performance

4. Exclusion
- Adolescence (boys and girls), at different schools from chhindwara (Madhya Pradesh).

Sample size: Adolescence (boys and girls) who referred by doctors for behaviour difficulties, and poor scholastic performance, referred at Shrivastava Clinic, chhindwara Madhya Pradesh were included in the study (N=150)

5. Study Design: Cross sectional study (Questionnaire based)

TOOLS

WJIII: Woodcock-Johnson Tests of Achievement- Richard W. woodcock, Kevin S. Mcgrew, Nancy Mather and Behaviour Assessment system for children, second edition (BASC-2)- Cecil R. Reynolds, PhD, and Randy W. Kamphaus, PhD- was used to assess Clinical scale under – 10 different categories and adaptive scale factors among children under 5 different categories.

PROCEDURE OF DATA COLLECTION

For collection of data from Shrivastava clinic, chhindwara Madhya Pradesh was chosen. By keeping age and gender requirements in mind the subjects were selected more than the required then the test of Woodcock-Johnson Tests of Achievement and Behaviour Assessment system for children, second edition (BASC-2), who referred by doctors for poor scholastic performance, n=150 subjects have been selected randomly from different school going children's, which consists 150 school going students (boys 75 and 75 Girls).

First of all, checklist of trails was administered on the subjects to get their original viewpoint. The subjects were randomly selected sample in Shrivastava clinic ,chhindwara Madhya Pradesh, adolescence (boys 75 and 75 Girls) and done Woodcock-Johnson Tests of Achievement and Behaviour Assessment system for children, second edition (BASC-2), , each subjects took about 60 min to respond on the entire above tools. A period of twelve months was devoted for the data collection.

STATISTICAL ANALYSIS

The obtained data was statistically analyzed by applying descriptive (Mean, Standard Deviation, paired t- test) of significance of mean differences in term of various variable. We have entered all data and further Statistical Analysis was done with the help of IBM- SPSS-25 software.

RESULTS

Learning disorder are historically characterized as having a strong impact on psychological processes, academic achievement, and social/emotional development. Psychological processes are a broad term that incorporates the wide range of thinking skills we use to process and learn information. The five psychological, or cognitive, processes that are affected by a learning disorder are perception, attention, memory, metacognition, and organization.

TABLE NO.1 MEAN AND SD OF BOYS AND GIRLS ALONG WITH THEIR STATISTICAL SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN

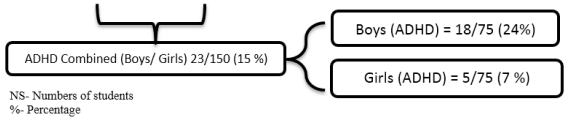
Areas		Mean Score	SD	95% Confidence Interval of the Difference		t	Sig (2-tailed)
				Lower	Upper		
Story Recall	Boys	7.63	1.478	.253	1.480	2.813	0.006
	Girls	6.76	2.307				
Writing Fluency	Boys	7.48	1.571	1.256	2.237	7.097	.000
	Girls	5.73	1.417				
Reading Fluency	Boys	5.32	1.317	2.086	2.874	12.550	.000
	Girls	2.84	1.346				
Spelling	Boys	7.61	1.283	2.090	3.323	8.746	.000
	Girls	4.91	2.054				
Mathematics	Boys	8.08	1.625	2.414	3.213	14.023	.000
	Girls	5.27	1.143				

Perception is the ability to organize and interpret the information experienced through the sensory channels, such as visual or auditory input. In present study Understanding directions Perception is important to learning because it provides us with our first sensory impressions about something we see or hear. A student relies on his perceptual abilities to recognize, compare, and discriminate information. An example would be the ability to distinguish the letter "B" from the letter "D" based on the overall shape, direction of the letter, and its parts. Some children with learning disabilities reverse letters, words, or whole passages during reading or writing.

Attention is a broad term that refers to the ability to receive and process information. Attention deficits are one of the disorders teachers / parents are most frequently associate with individuals with learning disorder. Teachers and parents may describe their students with learning disorder as "distractible" or "in their own world." The inability to focus on information can inhibit the student's ability to perform tasks in the classroom at the appropriate achievement level. In present study 15% (boys and girls) are ADHD , 24% boys and 7% girls , Aggression 48% boys and 36%girls showing aggression on other and education also, and attention problem 77% boys and 30% girls are facing problem .

TABLE.2- PERCENTAGES OF CHILDREN (BOYS AND GIRLS) OF CLINICAL SCALE

	Inattention		Hyperactivity		Aggression		Attention Problem	
	NS	%	NS	%	NS	%	NS	%
Boys	22	39	22	39	27	48	43	77
Girls	10	18	8	14	20	36	17	30



NS- Numbers of students
%- Percentage

In accordance with other studies Mazzone L, Vitiello B, Incorpora G, Mazzone D 2005- found a higher incidence of ADHD and lower school achievements in children with tension type headache in

comparison with children with migraine. One possible explanation is that low school achievements and symptoms such as inattention, hyperactivity and impulsivity, which often accompany learning difficulties, may be associated with stress in the family, with peers, and in school, each stress may in turn contribute to symptoms of tension type headache.

Memory involves many different skills and processes such as encoding (the ability to organize information for learning). Students with learning disorder may experience deficits in working memory which affects their ability to store new information and to retrieve previously processed information from long-term memory.

Present study in Story Recall measures aspects of oral language including language development and meaningful memory. After listening to a passage, the student is asked to recall as many details of the story as they can remember boys means score 7.63 and girls mean score 6.76, showed problem in recalling and t value 2.813 is significant at < 0.05 level. Around 56% boys and 44% girls showed problem to recalling story and direction. Working memory is similar to our concept of short term memory, but it is different in important ways. Working memory is the capacity to store information while doing other cognitively draining tasks (Gathercole, Alloway, Willis, & Adams, 2006). When researchers want to measure working memory they may use a task such as asking a student to evaluate the meaning of a series of sentences and remembering the last word of each sentence (e.g., Daneman & Carpenter, 1980).

Metacognition is the ability to monitor and evaluate performance. This process supplies many of the keys to learning from experience, generalizing information and strategies, and applying what you have learned. It requires the ability to: Written language is often an area of great difficulty for students with learning disorder. Specific problems include inadequate planning, structure, and organization; immature or limited sentence structure; limited and repetitive vocabulary; limited consideration of audience, unnecessary or unrelated information or details; and errors in spelling, punctuation, grammar, and handwriting. Students with learning disorder often lack both the motivation and the monitoring and evaluation skills considered necessary for good writing.

A deficit in any of these skills can have a major impact on the ability of a student to learn new information and apply it to any situation. Writing fluency (measured fluency for quickly formulating and writing simple sentences). In present study boys mean score 7.48 , and girls mean score 5.73, standard score is low range , and t value 7.097 is significant at <0.05 level. Around 72% boys and 64% girls are showed both gender faced difficulties in writing fluency but boy's shows significant high score than girls. Significant differences in metacognitive and affective factors have been reported during elementary and secondary schools between students with and without learning difficulties (Borkowski, et al., 1987; Palladino et al., 2000; Papetti et al., 1992). Palladino et al. (2000) found significant differences with metacognitive skills, internal attributions of effort related to personal success or failure, and self-reported depressive symptomatology, with the students with Learning disorder showing more difficulty in these areas than their counterparts without Learning disorder.

These students need to have an understanding of metacognitive processes and be encouraged to take an active role in their education. Students with Learning disorder who are considering postsecondary education benefit from a strong basic academic framework, but they can also benefit from help with reframing their learning disorder and building coursespecific strategies (Allsopp et al., 2005; Field et al., 2003; Gregg, 2007; Reiff, 2004).Because of the effect on cognitive processes, students with Learning disorder may have difficulty in a variety of academic areas as well as social and emotional development. While a student with a learning disorder may have difficulties in all academic areas, major problems are more often found in reading, language arts, and mathematics.

Reading is the most difficult skill area for the majority of students with learning disabilities. Learning disabilities in reading encompass a vast array of reading issues including dyslexia. Some of the most common reading disabilities are word analysis, fluency, and reading comprehension. Reading fluency assessed how quickly accurately, and expressively .In present study 87% boys ,and 63% girls , reading fluency standard score is in the low average range . Boys mean score 5.32 and girls mean score 2.84, and t value 12.550 are significant at <0.05 level. Mean scores are showed both gender face difficulties in reading fluency but boys faced more difficulties than girls. Williams (1980) designed and conducted a 2-year training and evaluation program for learning disorder children in the classroom setting. The program components included skills in phonemic analysis, blending, and decoding. Initially, the Learning disorder children were taught to analyze syllables and short words into phonemes and then to blend the phonemes into syllables and words. When mastery was reached in phonemic analysis and synthesis, the children were taught to decode.

Language arts are often another problematic academic area for students with learning disorder. While language arts are a broad subject, students with learning disorder have problems with three major skill areas that affect the entire subject. These include spelling, spoken language, and written language. Because of the close relationship of some of these skills to reading ability, they tend to be areas of great difficulty for many students with learning disorder.

Woodcock Johnson –III spelling measured orally presented words correctly particularly phonological and orthographical coding skills, and us in writing language. In present study around 91 % boys and 77 % girls standard score in spelling is in the low range . Boys mean score 7.61 and girls mean score 4.91, and t value 8.746 are significant at <0.05 level. Mean scores showed that both gender are faced difficulties to build spelling and but boys face more problems in making spelling than girls.

Spelling requires all the essential skills used in the word-analysis strategies of phonics and sight-word reading. The difficulties students with learning disorder have in learning and applying rules of phonics, visualizing the word correctly, and evaluating spellings result in frequent misspellings, even as they become more adept at reading. Some researchers consider spelling to be among the highest regarded skills of expressive writing and spelling is often considered to be an indication of education level or intelligence (Vaughn & Bos, 2009). Spelling is an important skill because it has a positive effect on reading and expressive writing outcomes (Kohnen, Nickels, & Coltheart, 2010; Sayeski, 2011; Wanzek et al., 2006).

Spelling is more difficult for students with Learning disorder for two main reasons: (a) they may struggle with identifying the sounds of words (Wendling & Mather, 2009); and (b) they may have difficulty generalizing skills between contexts (Wanzek et al., 2006). Generalization is the application of learning from one context to another context. Being able to generalize is an important part of spelling competence because spelling patterns have to be generalized to unfamiliar words to be effective (Kohnen, Nickels, & Coltheart, 2010). The challenges recognizing word sounds and generalizing spelling patterns means that even if students with LDs are initially successful in spelling programs, the knowledge may not be retained past the end-of-week tests (Morris, Blanton, Blanton, & Perney, 1995

Mathematics does not receive the same attention as reading and language arts, but many students with Learning disorder have unique difficulties in this subject area. Specific problems may include difficulty understanding size and spatial relationships and concepts related to direction, place value, decimals, fractions, and time and difficulty remembering math facts. Remembering and correctly applying the steps in mathematical problems (such as the steps involved in long division) and reading and solving word problems are significant problem areas.

Math fluency (quickly solve simple addition, subtraction, and multiplication) .Math fluency 33% boys , and 40 % girls, standard score are average range. Math fluency boys mean score 8.08 and girls mean score 5.27, and t value 14.023 is significant at <0.05 level. Mean scores showed both gender are facing difficulties in mathematics but boys are facing more difficulties than girls . Study it appears that deficits in arithmetic calculation skills are more frequently identified than deficits in arithmetic reasoning. Math is characterized as having a wide range of aspects that allow access to completing tasks using creative thinking. Developing original ways to solve problems provides pupils with control over the process of learning the subject of math and contributes to their self-confidence, a critically important factor to continued academic success when dealing more complex math problems (Gazit & Patkin, 2009, A., & Patkin, D. (2009).

It is important to realize that most social behaviours also involve learning. The characteristics that interfere with a student's acquisition of reading or writing skills can also interfere with their ability to acquire or interpret social behaviours. For example, individuals may have difficulties correctly interpreting social situations and reading social cues, and they may act impulsively without identifying the consequences of their behavior or recognizing the feelings and concerns of others.

Adaptive skills demonstrate situational specificity, or the ability of a person to match skills to current environment and to change behaviour to fit the specific demands of any situation. Thus, children's adaptive skills are influenced by the demands of specific situations and environments, including home, school, communication, and community, and by the expectations of important people within the environments. See table no.3.

TABLE NO. 3 - PERCENTAGES OF CHILDREN (BOYS AND GIRLS) OF ADAPTIVE SCALE

	Adaptability		Social Skills		Leadership		Study Skills		Functional communication	
	N	%	N	%	N	%	N	%	N	%
Boys	20	36	17	30	14	25	48	86	42	75
Girls	31	55	25	45	34	61	36	64	48	86

NS- Numbers of students
%- Percentage

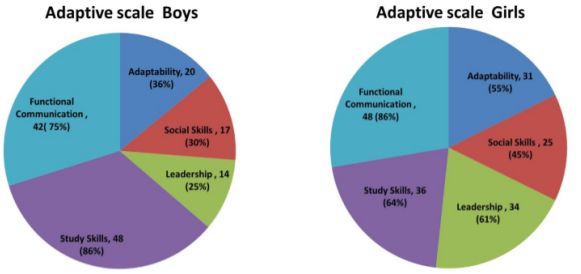


FIGURE 1 PERCENTAGES OF EFFECTED CHILDREN (BOYS AND GIRLS) ON ADAPTIVE SCALE

Adaptive skills are important components within everyday competence. The construct of conceptual intelligence, or the skills measured by traditional intelligence tests, is distinguished from everyday competence. There is some controversy about whether social intelligence really exists in a manner similar to cognitive intelligence and the extent to which it can be developed through learning experiences (Weare, 2010). Many researcher's proposed that school curricula must provide learning experiences that address students' development in the cognitive/academic, emotional, social, and moral domains (Cohen, 2006; Elias, & Arnold, 2006; Narvaez, 2006, Zins, Weissberg, Wang, & Walberg, 2004).

Conclusion

The Study conducted in Shrivastava clinic, chhindwara Madhya Pradesh showed that learning disorder, clinically factors and adaptive behaviour are the major common stressors factor in triggering academic difficulties among school going boys and girls. This highlights the importance of periodic assessment of both behaviour and academic records of children in our environment. Parents and Teachers are encouraged to pay more attention to those students with academic and behavioural problem by closer supervision of their educational and other social activities so as to improve their academic performance and behaviour problem

Limitations and Scope for future research

First it's an area based research, second limited sample size, third future research is required to further delineate and characterize the prevalence, frequency, and psychosocial correlates related to the learning disorder and behaviour problem experience by school going children's. Future prospect study should be developed in cooperating large sample size and mass study with appropriate methodology to capture the frequency and prevalence of Learning disorder, behaviour difficulties faced by adolescence.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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