

Pragmatic Skills in Children with Different Types of Learning Disability: A Comparative Study

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Abstract

The study aimed to evaluate and compare pragmatic skills in children with Learning disability who had dyslexia, dysgraphia, dyslexia & dysgraphia and mixed type (dyslexia + dysgraphia + dyscalculia) with typical developing age matched children. A total of 40 children within the age range of 11-13 years participated in the study. The participants were divided into five groups with eight each. To assess pragmatic skills Pragmatic Protocol by Prutting and Kischner (1987) was used. The test consisted of 3 subtasks i.e. verbal, paralinguistic and non-verbal aspects. Each child was engaged in conversation with clinician for 20-30 minutes. The responses were scored and subjected to statistical analysis using SPSS (version 16.0) software. The study results indicated poorer performance for verbal aspects and better performance for paralinguistic aspects in all children with Learning disability. The children with mixed type of learning disability had poorer performance on verbal and non-verbal aspects of pragmatics compared to all other groups of children with and without learning disability. Hence, it can be concluded that not only children with learning disability have poorer pragmatic competence but also within them there are large variability's.

Key words: Learning disability, Pragmatic skills, Dyslexia, Dysgraphia, Dyscalculia.

Introduction

All humans are born with a natural ability to learn language (Troike, 2006). Language is a complex system which can be best explained by breaking it down into its functional components form, content and use (Bloom & Lahey, 1978). Form is a component that connects sounds and symbols in order i.e. phonology, morphology and syntax. Content

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encompasses meaning or semantics and use is also termed as pragmatics. These five components phonology, morphology, syntax, semantics and pragmatics are the basic rule systems of the language. Pragmatics is the ability to use language appropriately within a social, situational and communicative context (Lahey, 1988). Pragmatic ability depends on social knowledge and skill as well as linguistic knowledge and skill. Typically pragmatic skills develop within first 8 years of life (Ibertsson, et al., 2009).

Learning disability (LD) is a neurologically based processing problem that interferes 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/short term memory and attention. On review of literature on LD it's a known fact that children with LD not only face academic problems but also present with problems in language acquisition. Children with LD have particularly difficulty with pragmatics (Wallach and Liebergott 1984).

There are different types of LD i.e. Dyslexia, Dysgraphia, Dyscalculia and Mixed. Dyslexia is a type of reading disorder in which the student fails to recognize and comprehend written words. Dyslexia is a severe impairment in the ability to read, despite normal intelligence, normal opportunities to read, and an adequate home environment. It is a problem resulting from difficulties with phonological awareness that is a lack of understanding of the rules that govern the correspondence between specific sounds and certain letters that make up words (Lyon & Moats, 1997). Dysgraphia is the inability to perform motor movement, i.e. extremely poor handwriting. Dysgraphia is associated with written expression, which entails writing skills that fall substantially below those expected given the individual's age, intelligence, and education, such that academic achievement or activities of daily living are significantly impaired (Birsch, 1999). Dyscalculia is defined as developmental arithmetic disorder, which refers to selective impairment in mathematical thinking or in calculation skills (Fletcher & Forman, 1994). Arithmetic involves recognizing numbers and symbols, memorizing facts, aligning numbers, and understanding abstract concepts such as place, value and fraction.

Researchers documented 8-15% of school population with LD having writing problems, approximately 6% having arithmetic difficulties and 80% having reading difficulties. It is also noted that 43% of the LD students with arithmetic difficulties also have reading problems (Robinson, Manchetti, and Torgeson 2002). Lapadat (1991) did a meta-analytic review of 33 studies on pragmatic language skills of students with LD in the age range of 3-12 years. The author concluded that children with LD presented with a consistent pervasive pragmatic deficits in which are attributed more over to insufficient social knowledge.

Patricia and et al (1993) attempted a study on social communication skills in two children with LD and two without LD. A pragmatic analysis of each child's language production resulted in fewer code switching in children with LD compared to children without LD. Each child appeared to possess his own particular conversational style. As a group, the LD children made more personal and fewer imaginative statements when talking with nondisabled peers.

Troia (2011) attempted a review study to evaluate the influence of pragmatic language deficits on writing skills of students with language learning disabilities. The study results indicated various aspects of writing skills being affected in the children with LD due to poorer pragmatic language skills. Hence, the author recommended explicit instruction on some pragmatic issues in the writing of children and adolescent with LD.

Presently in Indian context there are many studies which have delineated different language aspects in children with LD. However, there are very few studies which have focused on pragmatic language competence in different types of learning disabled children i.e. children with dyslexia, dysgraphia and dyscalculia compared to typical developing. To evaluate whether pragmatics skills can differ in various types of LD the study was attempted.

Aim of the Study

To evaluate and compare pragmatic skills in children with LD who had dyslexia, dysgraphia, dyslexia & dysgraphia and mixed (dyslexia + dysgraphia + dyscalculia) type with typically developing age matched children.

Methodology

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Participants

A total of 40 children within the age range of 12.4 years participated in the study. The participants were divided into five groups with eight each i.e. Group 1 children with dyslexia (LD1), Group 2 children with dysgraphia (LD2), Group 3 children with both dyslexia & dysgraphia (LD3), Group 4 children with mixed type with dyslexia, dysgraphia and dyscalculia (LD4) and Group 5 typically developing children (TD).

Tool Used

To assess pragmatic skills 'Pragmatic Protocol' by Prutting and Kischner (1987) was used. The test consisted of 3 subtasks i.e. verbal aspects (Task 1) with 18 subparts, paralinguistic aspects (Task 2) with 5 subparts and non-verbal aspects (Task 3) with 7 subparts.

Procedure

Initially the parents of the participants were explained about the purpose and procedure of the study and consent was obtained. Each participant were made to sit comfortably in a well-lit and ventilated room and the clinician formed a rapport. The clinician further started conversation with the participant in which they were asked to say about themselves, their school, hobbies etc. the duration of the conversation was up to 30 minutes approximately for each participant. The conversation was recorded and played later for analysis. The scoring of the speech sample was done using a 2 point rating scale where '0' stood for inappropriate responses and '1' for contextually appropriate response and '2' for no opportunities. The scores were tabulated for each subtask and subjected to statistical analysis using SPSS (version 16.0) software. Descriptive statistics was done to find out the mean and standard deviation values for each group and also within the groups. As a part of inferential statistics, one-way ANOVA was performed and as there was statistical significant difference post hoc test LSD was applied.

Results and Discussion

The findings of pragmatic skills are described as following.

Verbal aspects: The mean value for verbal aspects of group LD1 was 10 (SD = 0.75), LD2 was 10.625 (SD= 0.916), LD3 was 10.625 (SD= 1.187), LD4 was 7.625 (SD= 0.517) and TD was 14.125 (SD= 1.457) indicating a statistical significant difference ($p < 0.05$) between LD1, LD2, LD3 compared to LD4 and TD. The findings are presented in Table 1.

Table 1: Verbal aspects mean and SD all across five groups.

GROUP	N	MEAN	SD	F Value	P Value
LD1	8	10.000	0.755	41.545	0.000
LD2	8	10.625	0.916		
LD3	8	10.625	1.187		
LD4	8	7.625	0.517		
TD	8	14.125	1.457		

Paralinguistic Aspects

The mean value of paralinguistic aspects for group LD1 was 5 (SD = 0), LD2 was 4.75 (SD= 0.7), LD3 was 5 (SD= 0), LD4 was 5 (SD= 0) and TD was 5 (SD = 0) indicating that there was no statistical significant difference ($p < 0.05$) between all five groups. The findings are presented in Table 2.

Table 2: Paralinguistic aspects of Mean and SD across five groups.

GROUP	N	MEAN	SD	F Value	P Value
LD1	8	5.00	0.00	1.020	0.100
LD2	8	4.75	0.70		
LD3	8	5.00	0.00		

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LD4	8	5.00	0.00		
TD	8	5.00	0.00		

Nonverbal Aspects

The mean value of non-verbal aspects for group LD1 was 5.75 (SD = 1.164), LD2 was 6.25 (SD = 0.707), LD3 was 5.875 (SD = 0.834), LD4 was 3.625 (SD = 0.517) and TD was 6.75 (SD = 0.377) indicating a statistical significant difference ($p < 0.05$) between LD4 compared to LD1, LD2, LD3, and TD. The findings are presented in Table 3.

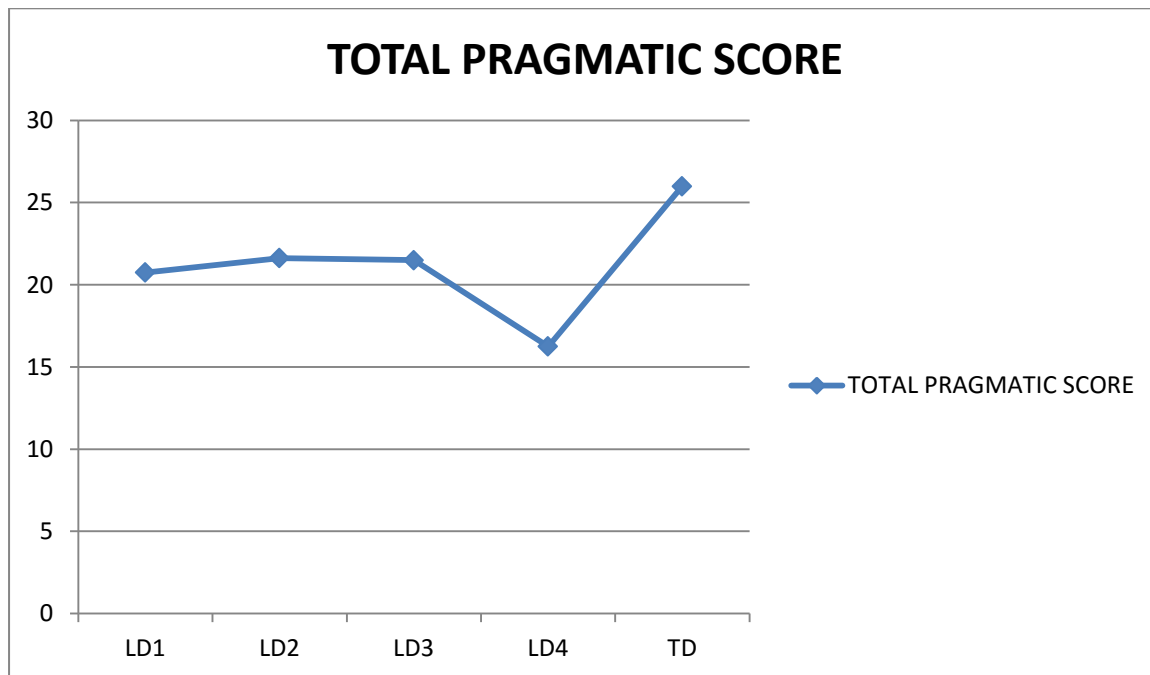
Table 3: Nonverbal aspects of mean and SD across five groups.

GROUP	N	MEAN	SD	F Value	P Value
LD1	8	5.750	1.164	19.364	0.000
LD2	8	6.250	0.707		
LD3	8	5.875	0.834		
LD4	8	3.625	0.517		
TD	8	6.750	0.377		

Total Pragmatic Score

The mean of total pragmatic scores for LD1 was 20.75 (SD = 1.752), LD2 was 21.625 (SD = 1.06), LD3 was 21.5 (SD = 1.069), LD4 was 16.25 (SD = 0.707) and TD was 26 (SD = 1.511) indicating statistical significant difference ($p < 0.05$) between LD1, LD2 LD3 compared to LD4 and TD. The findings are displayed in Figure 1.

Figure 1: Mean of total pragmatic scores across five groups



Discussion

As per the results of the study the findings of Total pragmatic scores of all the five groups indicated that children with mixed type of learning disability performed poorer followed by Group 1 i.e. dyslexia, Group 3 i.e. dyslexia and dysgraphia and Group 2 i.e. dysgraphia compared to typically developing children. These results are in convergence with findings of Wallach and Liebergott (1984) study.

Secondly, on examination of verbal aspects in all five groups it is observed that all the children with learning disability had poorer scores compared to typical developing children. The item analysis of verbal aspects of conversation indicated that the poorer performance was mainly due to lesser use of speech acts, inadequate topic maintenance, turn taking, limited use of conversational repair strategies and reduced cohesion and contingency in children with LD. These findings are correlating with findings of Bryan et al, (1983) study on pragmatic skills of children with learning disability.

Thirdly, on examination of non-verbal aspects only children with LD with mixed type i.e. having dyslexia, dysgraphia and dyscalculia had poorer scores compared to typical developing children. On item analysis it is observed that these children presented with inadequate body posture, physical proximity, eye gaze and unnecessary body movements

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while conversation. This also indicates that children with LD other than mixed type are less or not affected at all in nonverbal aspects of pragmatics.

Fourthly, on examination of paralinguistic aspects among all the five groups of children, it was observed that there was no problem in paralinguistic aspects in all the groups. This sub task consisted of intelligibility, voice quality and fluency aspects of speech which could be least affected due to presence or absence of LD in children.

Summary and Conclusion

With the study findings it can be concluded that not only children with learning disability have poorer pragmatic competence but within them there are large differences. Hence, while assessing and planning intervention programs for language one should focus on different types of learning disability and consider more on verbal and non-verbal aspect of pragmatic competence.

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