

PREVALENCE OF DYSCALCULIA AMONG SCHOOL GOING CHILDREN ACROSS GENDER**Sudha Pandey * & Shalini Agarwal ******Research Scholar * & Assistant Professor ******Department of Human Development and Family Studies, School for Home Sciences.****Babasaheb Bhimrao Ambedkar University, Lucknow.****ABSTRACT**

Background and Objectives: Several studies have been conducted in India to determine the prevalence of learning disability in school going children. The present study was conducted to find out the prevalence of dyscalculia among school going children of class IXth and Xth.

Methods: The present study was conducted to find out prevalence of dyscalculia in students of class IX and X. Sixty students were randomly selected from different selected schools. Standardized scale was administered on the sample to assess dyscalculia among children.

Results: Results showed that 6 students were found to be having severe dyscalculia that gave a prevalence of 10 percent and 8 students were found to be having mild dyscalculia that gave a prevalence of 13.3 percent.

Conclusion: The finding of our study showed that prevalence rate is lower than expected. Chi square value shows that null hypothesis was accepted hence there was no association between gender and category for dyscalculia.

Keywords: *Learning disability, Dyscalculia, Prevalence.*

INTRODUCTION

The term Dyscalculia is derived from the Greek word- **dys (difficulty)** and from the Latin word- **calculia (counting-stone)**- A small stone or pebble used for calculation. Essentially it describes a difficulty with numbers which can be a developmental cognitive condition, or an acquired difficulty as a result of brain injury.

While we recognize other definitions of dyscalculia, for our working practices the service will use the following definition of dyscalculia, which is currently recognised by the Department for Education: A condition that affects the ability to acquire arithmetical skills". Dyscalculic learners may have difficulty understanding simple number concept, lack an intuitive grasp of number, and have problems learning number facts and procedures. Even if they produce a correct answer,

or use a correct method; they may do so mechanically and without confidence.' DfES (2001)

Dyscalculia is difficulty in learning or comprehending arithmetic such as difficulty in understanding numbers, learning how to manipulate numbers, and learning math's facts. It is generally seen as a specific developmental disorder like dyslexia. Dyscalculia is a mathematical learning disorder where the mathematical ability is far below expected for a person's age, intelligence and education.

Dyscalculia is a specific learning difficulty that has also been referred to as -number blindness, in the same way as dyslexia was once described as -word blindness. According to Butterworth (2003) a range of descriptive terms have been used for Dyscalculia, such as -developmental dyscalculia ,mathematical disability, arithmetic learning disability, number fact disorder and psychological difficulties in Mathematics.

The term 'dyscalculia' is contentious. Does it relate to a discrete difficulty or part of a continuum? Should the criteria of discrepancy between IQ and mathematical ability be used? Should mathematical difficulties be seen as related to dyslexia and language difficulties (but evidence suggests that they can sometimes be dissociated) ... Arithmetic is NOT a single unitary ability'. Dowker (2009).

Very little is known about the prevalence of dyscalculia, its causes or treatment. Purely dyscalculic learners who have difficulties only with number will have cognitive and language abilities within the normal range, and may excel in nonmathematical subjects.

How common is Dyscalculia- Approximately 6 % of the pupil population suffers from dyscalculia, which is about the same number as dyslexics(LDAM,2005).Between 3 and 8% of school-aged children show persistent grade-to-grade difficulties in learning some aspects of number concepts, counting, arithmetic, or in related math areas.(Badian NA,1983 & Kosci L,1974) These and other studies indicate that these learning disabilities, or dyscalculia, are not related to intelligence, motivation or other factors that might influence learning. The finding shows that 3 to 8% of children have dyscalculia are misleading in some respects. This is because most of these children have specific deficits in one or a few areas, but often perform at grade level or better in other areas. About half of these children are also delayed in learning to read or have a reading disability, and many have attention deficit disorder (Shalev RS et al. 1993).

The issue of identification of specific learning disability cases in Indian context is perhaps more complex as classroom conditions that are far from ideal, socio-economic factors, bilingualism and multilingualism, limited proficiency in medium of instructions may play a significant role in Indian educational system.(Karanth ,2003 & Snow ,2000). The present study was planned to identify dyscalculia cases in students of class IX and X in Lucknow city.

Objective: To identify the children having dyscalculia.

Ho: There exist no association between gender and category for dyscalculia.

Materials and Method

An exploratory research design was used for the study. This study was carried out on school going students of Lucknow city. Three schools were selected for the study. All these schools were affiliated from CBSE Board, ICSE Board and UP Board. 60 respondents of class IXth and Xth were randomly selected from different selected schools using simple random sampling. A standardized test (Rajshree Bhargava & R.L. Bhardawaj Battery) was carried out to identify the dyscalculic children in the real class situation

from 60 respondents. Statistical analysis was done by using SPSS. In the present study frequency, percentage, and chi-square were used to analyze.

Result and Discussion

Table-1: Distribution of respondent on the basis of Sex

Sex	Frequency	Percentage
Boys	36	60.0
Girls	24	40.0
Total	60	100.0

Result in Table-1 showed that 60% boys and 40% girls were selected for the study.

Table-2: Frequency distribution of respondent on the basis of Category for dyscalculia

Category for Dyscalculia	Frequency	Percentage
>60(No Dyscalculia)	46	76.7
40-59(Mild Dyscalculia)	8	13.3
5-39(Severe Dyscalculia)	6	10.0
Total	60	100.0

Result in Table-2 showed that 76.7% respondents were having no dyscalculia, 13.3% respondents were suffering from mild dyscalculia and 10% respondents were suffering from severe dyscalculia.

Ho1: There exist no association between gender and category for dyscalculia.

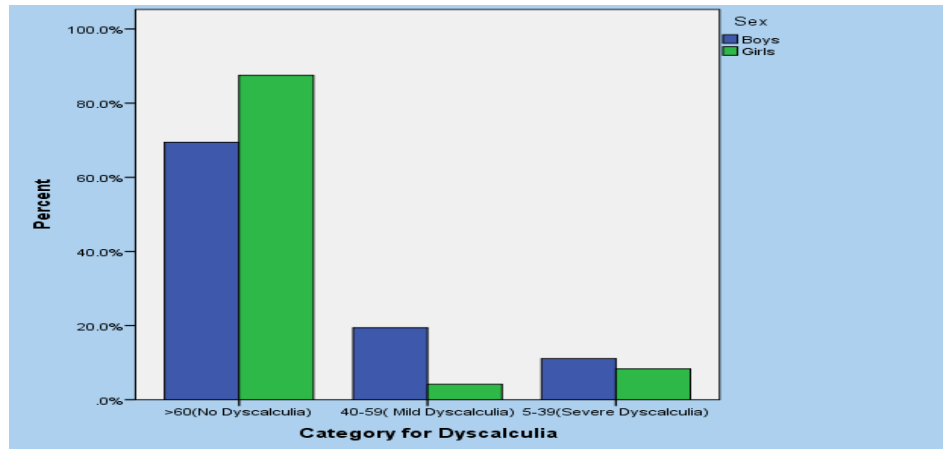
Table-3: Chi-square value between gender and Category for Dyscalculia

Category for Dyscalculia	Sex		Total	df	P value
	Boys	Girls			
>60(No Dyscalculia)	25(69.4%)	21(87.5%)	46(76.7%)	2	.197
40-59(Mild Dyscalculia)	7(19.4%)	1(4.2%)	8(13.3%)		
5-39(Severe Dyscalculia)	4(11.1%)	2(8.3%)	6(10.0%)		
Total	100.0%	100.0%	100.0%		

$\chi^2 : 3.244, p > 0.05$

Chi square value .197 shows that null hypothesis was accepted hence there was no association between gender and category for dyscalculia.

It is evident from the table that 11.1% boys and 8.3% girls were suffering from severe dyscalculia.



Graph-1

Conclusion – It could be concluded that learning disability especially dyscalculia was prevalent in the children which is a issue of concern as these children need to be given special attention rather than punishment. It was also seen that both boys and girls were the sufferers of dyscalculia, thus both should be given special attention in the field of calculation and mathematics so that they also can perform like other children of their class.

References

- 1-Badian, N. A. (1983). Dyscalculia and nonverbal disorders of learning. Progress in learning disabilities, 5, 235-264.
- 2-Butterworth, B. (2003). Dyscalculia screener: Highlighting pupils with specific learning difficulties in maths.
- 3-DfES (2001) SEN Code of Practice ref. DFES/581/2001 DfES Publications
- 4-Dowker, A. (2009). What works for children with mathematical difficulties? The effectiveness of intervention schemes.
- 5-Kosc, L. (1974). Developmental dyscalculia. Journal of learning disabilities,7(3), 164-177.
- 6-Karant. P (2003). Introduction In: Karant P, Rozario J. editors. Learning Disabilities in India: Willing the mind to learn. New Delhi: Sage Publications. p. 17-29.
- 7-Learning Disabilities Association,M.N.(2005).Dyscalculia Defined.Net News.Volume 5,Number 4.LDA of Minnesota,Retrieved from EBSCO host.
- 8-Shalev, R., Marior, O., Amir, N., & Gross-Tsttr, V. (1993). THE ACQUISITION OF ARITHMETIC IN COGNITIVE MODEL OF DYSCALCULIA. Developmental Medicine & Child Neurology, 35(7), 593-601.
- 9-Snow CE, Burns MS, Griffin P (2000). Preventing reading difficulties in your children. Washington, DC: US National Research Council Report.