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Research Papers

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## MATERNAL SENSITIZATION TO MANAGE ACADEMIC SKILL DISORDERS: AN INTERVENTION STUDY

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### Abstract

*The present study was an attempt to investigate the impact of intervention on the knowledge level of mothers regarding various aspects of Academic skill disorders. The research study was carried out in 15 urban private schools of Ludhiana District. From 3rd and 4th class of each school only those students were selected whose performance either in mathematics or language or both of these subjects was consistently reported to be very poor despite best possible inputs. Gaps in the knowledge of the mothers of these selected students were assessed to plan an instructional material for providing intervention to improve their knowledge levels. The total sample consisted of 199 mothers.*

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The intervention focused on teaching strategies for early identification, informal assessment and development of need based intervention material for children with academic skill disorders. Pre and post intervention knowledge level of mothers were assessed. The results of the study indicated a significant gain in the overall knowledge scores of mothers after getting intervention. Further, in depth study of knowledge gains of mothers across three components of knowledge test viz. basic awareness, comprehension and application depicted significant shift of mothers from poor level of performance to good performance level across all the three components. The overall result indicated that intervention had significant and positive impact on the knowledge level of mothers. The hands on experiences provided to the mothers to develop stimulating material for their children made them capable of implementing their knowledge to practically help such children who

were facing problems in reading, writing and mathematics.

### INTRODUCTION

Academic skill disorders are a type of learning disability primarily related to reading, writing and arithmetic disorders. Early identification of these three disorders is very important as these are directly related with academic performance of the child in school. Extensive research proves that effective early intervention strategies will improve the child's chances of future school success, reduce the need for special education services in later years, and minimize the loss of self esteem brought on by a pattern of school failure.

Due to lack of awareness among teachers, parents and school authorities, these children are usually labeled as slow, behind, incapable and failures. Repeated failures results in low self esteem and theses children slowly stop trying to learn and achieve and eventually drop out of

school.

Later on these dropped out adolescents and teens with learning disabilities who have not received proper academic support and service run a higher risk than average for becoming involved with tobacco, alcohol and drug abuse. School drop-out is linked to illegal activities and eventual incarceration, and for becoming teen mothers and fathers.

The actual number of children who have Academic skill disorders in India is still difficult to assess because no national census is available. There is growing need to identify these children at an early age and to plan appropriate intervention strategies for these children as they face numerous physical and psychosocial problems in later stage of life. A results of state wide survey among school population (standard 1 to standard 10 ) of eight districts of Kerala reported that conditions leading to speech and language disorders may occur in at least 10 percent of the child population, learning disability of different types is common in India and these affect all socioeconomic groups. There is lack of awareness in the general population regarding these disorders and the rehabilitation of victims. The available resources to rehabilitate those suffering from these disorders are grossly inadequate.

Etiological studies indicate that these disorders are a life long challenge as there is no medical treatment for these children. The only and most common treatment for this is individualized special education programmes based on early identification and professional evaluation by experts. To develop need based individualized special education programmes, it is important to enhance basic knowledge level of parents particularly of mothers so that they are able to identify the problem at an early age. Public education through parents, government agencies and media is essential.

#### **WHY MOTHERS NEED TO BE SENSITIZED?**

Ø As per International surveys, approximately one in every seven people has a learning disability in western countries and a recent survey conducted in India shows one in ten people is having learning disability in India (Karanth and Rozario, 2003). Ramma and Gowamma (2002) in their study of dyscalculia among primary school children in India mentioned that 5.98 percent of children were suffering from dyscalculia and 51.27 percent of children had reading and writing problem. The alarming

increase in number of such children necessitates the need to make mothers aware of reasons for disability, effects of disability, ways of helping the child and understanding the skill area and limitations of their child.

Ø Like any other disability early identification and intervention help learning disabled children to lead a normal life. Over 30 years of research findings about learning disabilities and the affected students have shown that intervention using validated and best practices make a positive difference in performance of these children. Mothers being the primary care takers remain in close contact with their child. They are the prime spectators of their child's every minute growth and development. If mothers are well empowered to identify early detection signs, the problem of learning disability can be dealt with much ease. It can help in developing age appropriate intervention strategies for these children that in turn can improve the child's chances of future school success, reduces the need for special education services in later years, and minimizes the loss of self esteem.

Ø LD is caused by a variety of reasons, none of which can be clearly outlined. Since it is a neurological disorder, it is basically caused by a structural abnormality in the brain. These structural abnormalities may occur in various parts of the brain associated with language, motor activities, spatial relations and visual input. Prenatal factors responsible for these disabilities may include exposure to alcohol, drugs and blood group incompatibility. Consumption of alcohol or drugs by the mother during pregnancy may affect the neurological development of the baby. The baby's brain development may be hampered by drugs which do not allow the brain cells to differentiate adequately. Heavy use of alcohol may cause a condition called Fetal Alcoholic Syndrome (FAS) which leads to intellectual impairment and LD. Problems during birth may also be responsible. In difficult pregnancies, the child may have to be delivered by forceps. This may damage the brain of the newborn leading to difficulties in learning. Premature birth may also be a cause of LD. The impact of causative factors related to maternal health and care during pre and post natal care can be

Ø Mothers are also responsible for providing quality care to the child that includes good nutrition, sound sleep, stimulating environment, love and affection. Recent brain research studies have found a direct link of nutrition with learning

process. Recent studies regarding relationship between nutrition and learning suggest that many children who have difficulty learning often have specific nutritional deficits. Correcting these deficits in some children has resulted in increased learning performance and concentration, which in turn concurrently impact the behaviour of the child (Moore, 2009).

Ø Knowledge linked with scientific facts helps to comprehend learning concept in a better way. Mothers if given factual knowledge concerning management of these children can enhance acceptance of such children in their families. Brain research is helping to explain how parental acceptance of the child expressed through love and emotional support benefits the nervous system. In working with children, parents often underestimate the power of emotions. Emotions play a critical role in the growth and development of children and how they view the world around them. Positive emotional input from caring parents sets the stage to support a child's physical, mental and social development. Negative inputs in the form of rejection, criticism, not only comprises child's learning but puts the child at risk to view self and others from a hostile or defensive perspective.

Ø Neuroscientists and other researchers have established that mind/body/heart are interconnected and work in concert with each other. What we eat affects how we feel. What we think or feel effects our body's functions. In other words cognition, emotion and physiology are all intertwined. What happens to child emotionally either enhances or compromises thinking ability and body functions. Knowing the dynamic interplay can help parents to become more aware of ways to provide conditions and experiences that contribute to a balanced state of mind rather than less productive state of imbalance.

Ø Keeping these factors under consideration present survey was conducted to assess the existing knowledge of mothers of Ludhiana.

**RESEARCH DESIGN:**

Ø The present research study was carried out in 15 urban Private schools of Ludhiana District. From 3rd and 4th class of each school only those students were selected whose performance either in mathematics or language or both of these subjects was consistently reported to be very poor despite best possible inputs. The final sample consisted of 300 children with academic skill disorders selected randomly from the list of 900 students.

Ø The mothers of these selected students were included in the sample and Self structured knowledge assessment questionnaire was used to study gaps in the current knowledge level of mothers regarding identification and management of academic skill disorders among children.

Ø Based on the gaps in the knowledge of the mothers of an instructional programme was developed for providing intervention to improve their knowledge levels.

Ø The intervention focused on teaching strategies for early identification, informal assessment and development of need based intervention material for children with academic skill disorders.

Ø Pre and post intervention knowledge level of mothers were evaluated to assess the impact of intervention programme.

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**RESULTS AND DISCUSSION:**

Table 1 elucidates comparison of mean scores of mothers as well as quantum of gain in total knowledge test score. Significant (p < 0.01) t-value for pre and post-testing of mothers indicated significant improvement in the mean scores after getting intervention. However, the study of quantum of gain indicated that mothers gained by 5.89times. The overall picture depicted that the mean values during post intervention testing improved significantly as far as improvement in knowledge scores was concerned.

Table 1: Quantum of gain in total knowledge test score of mothers (N=199)

S. No.	Pre-Test		Post-Test		t-value	Gain by times
	Mean	SD	Mean	SD		
1.	4.30	3.66	25.33	10.32	30.59**	5.89

\*\*Significant (p=0.01)

Total scores of the mothers were assessed across three levels of performance and it was observed from the data depicted in table 2. that 97.5 percent of the mothers' knowledge was found to be poor during pre-intervention testing and only 2.5 percent of the mothers had shown moderate level of knowledge. None of the mother during pre-intervention testing was

Table 2: Overall per cent distribution of mother across three levels of performance

S. No.	Level of performance	Mothers			
		Pre Test		Post Test	
		f	%	f	%
1.	Poor	194	97.49	77	38.69
2.	Moderate	5	2.51	95	47.74
3.	Good	0	0.00	27	13.57
chi-square 158.30** df=1 YC					

\*\*Significant (p=0.01) YC=Yates Correction

found to have good knowledge regarding management of academic skill disorders among children. A Significant (p 0.01) shift was observed in number of mothers during post-intervention testing, as only 38.69 percent of the mothers were found with poor level of knowledge and around half of the mothers (47.7%) had moderate level of knowledge after getting intervention. 13.5 percent of the mothers were also found with good knowledge during post-intervention testing against none during pre-intervention testing. It could be inferred that intervention proved beneficial for mothers. In majority of cases mothers were involved in teaching of children and they reported that they were facing many difficulties related to reading, writing and mathematics. Their interest to learn more about these problems could have motivated them to involve more seriously in the learning process.

Table 3.: Mean scores of mothers across three levels of knowledge gain

S. No.	Level of knowledge gain	Pre-Test		Post-Test		t-value
		Mean	SD	Mean	SD	
1.	Basic knowledge/ awareness	3.49	2.94	14.34	3.65	37.86**
2.	Comprehension	0.73	1.29	8.94	6.38	19.64**
3.	Application	0.07	0.36	2.04	2.41	11.84**

\*\*Significant (p=0.01)

Data of the table 3. depicted that during pre-intervention assessments mean scores of  $3.49 \pm 2.49$  was found for mothers at basic knowledge level. However, during post-intervention testing, the mean score of mothers ( $14.34 \pm 3.65$ ) increased significantly. In the similar fashion, mean value of mothers during pre-intervention assessments was found to be  $0.73 \pm 1.29$  against mean score of  $8.94 \pm 6.38$  during post-intervention testing at comprehension level. Similarly, at the application level, mean scores of mothers increased significantly (p 0.05) from  $0.07 \pm 0.36$  to  $2.04 \pm 2.41$  during post-intervention testing.

Table 4 represents percent distribution of mothers across three levels of knowledge gain and three levels of performance. The data indicated that 94.4 percent of the mothers performed poor at the basic knowledge component during pre-intervention testing. After intervention, significant

(p 0.01) shift in proportion of mothers (94.47%) from poor level of performance to moderate (66.33%) level of performance was observed during post-intervention testing. However, as compared to 1.01 percent of mothers with good knowledge level during pre-intervention testing, 29.65 percent of mothers during post-intervention testing were found to have good level of basic knowledge of awareness. Further, at the comprehension level, similar results were found as against 99.5 Percent of mothers with poor comprehension ability during pre-intervention testing only 36.18 percent of the mothers remained at this level during post-intervention testing.

Table 4. Percent distribution of mothers across three levels of knowledge gain and three levels of performance

S. No.	Level of knowledge gain	Pre Test		Post Test	
		f	%	f	%
<b>I. Basic Knowledge/Awareness</b>					
	Poor	188	94.47	8	4.02
	Moderate	9	4.52	132	66.33
	Good	2	1.01	59	29.65
chi-square 39.94** YC df=1					
<b>II. Comprehension Component</b>					
	Poor	198	99.50	72	36.18
	Moderate	1	0.50	50	25.13
	Good	0	0.00	77	38.69
chi-square 179.94** YC df=1					
<b>III. Application Component</b>					
	Poor	199	100.00	162	81.41
	Moderate	0	0.00	37	18.59
	Good	0	0.00	0	0.00
chi-square 38.62** YC df=1					

None of the mother was found to have good comprehension of the facts related to academic skill disorders during pre-intervention testing however, during post-intervention testing 38.69 percent of the mothers had come upto good level of comprehension. The percent distribution of parents across three levels of performance at the application level indicated that during pre-intervention testing all (100%) mothers showed poor level of application ability. However, after intervention 18.59 percent of mothers improved their scores and were found to have moderate level of application ability. Though the change in the proportion of mothers was found to be highly significant but none of the mother was found to have good level of performance in application component.

**CONCLUSION:** The results of the study indicated a significant gain in the overall knowledge scores of mothers after getting intervention. In depth study of knowledge gains of mothers across three levels of knowledge gain viz.

basic awareness, comprehension and application depicted significant shift of mothers from poor level of performance to good performance level across all the three levels. The overall result indicated that intervention programme developed for the mothers was found helpful in improving knowledge level of mothers. The hands on experiences provided to the mothers to develop stimulating material for their children made them capable of implementing their knowledge to practically help such children who were facing problems in reading, writing and mathematics.

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