Teachers’ Knowledge about Learning Disabilities Regarding Information Education Communication (IEC) Package at Selected Schools, South India

Christopher Amalraj Vallaba Doss, Syed Mohamed Sadath, R.M.Palanivel, Muhil Sakthivel

Abstract: Objective: The present study assessed the effectiveness of Information Education Communication (IEC) package on knowledge of teachers regarding learning disabilities at selected schools in Kanchipuram, Tamilnadu, South India. Methods: Experimental and control study design. IEC package training was given to the experimental group of primary school teachers. The inclusion criteria were Primary school teachers who are handling classes from 1st-5th standard. Results: The result of the study concluded that IEC package has improved the knowledge among the experimental group than control group in the primary school teachers. Conclusions: Therefore the investigator felt that more importance should be given to IEC package. A child struggling in school causes concern, difficulties with one task can leave children frustrated and parents and teachers wondering about the barriers that are preventing learning. The contribution in the nursing practice, education, administration and research had been highlighted.

Keywords: Analysis of variances, Mathematics difficulties (MD), National Center for Learning Disability (NCLD), National Joint Committee on Learning Disabilities (NJCLD), National Institutes of Health Study (NIHS), Primary school, Primary School Teachers

1. INTRODUCTION

Learning disabilities (LD) can affect one’s ability to read, write, speak, spell and compute math. They also can affect one’s attention, memory, coordination, social skills, and emotional maturity. Individuals with LD have normal intelligence, or are sometimes even intellectually gifted. Individuals with LD have differing capabilities, with difficulties in certain academic areas but not in others. Learning disabilities have an effect on either input the brain’s ability to process incoming information or output the person’s ability to use information in practical skills, such as reading, math, spelling, etc. Polit & Beck, 2004; Ghimire, 2017.

Christopher Amalraj Vallaba Doss works at the Vice Deanship for Quality and Development, College of Medicine, Imam Abdulrahman Bin Faisal University, King Fahd Hospital of the University, P.O. Box 1982, Dammam 31441, Saudi Arabia. Email: cadoss@iau.edu.sa

Syed Mohamed Sadath works as a Lecturer, Department of Radiological Sciences, College of Applied Medical Sciences, Imam Abdulrahman Bin Faisal University, P.O. Box 1982, Dammam 31441, Saudi Arabia. Email: smsadath@iau.edu.
but the average age the symptoms were noted was 5 years
Sadock BJ & Sadock VA, 2011: Streissguth, & Sampson, 1990. Highlights key findings from the small body of research
on mathematics difficulties (MD) relevant to early identification
and early intervention. The following measures appear to be
valid and reliable indicators of potential MD in kindergartners:
a) magnitude comparison i.e., knowing which digit in a pair is
larger, b) sophistication of counting strategies, c) fluent
identification of numbers, and d) working memory as
evidenced by reverse digit span. These are discussed in terms
of the components of number sense Kothari, 2004. Findings
suggest indicators of effective mathematics teaching in
inclusive general education classrooms to be validated by
future research efforts Lalitha, 2009. The results reveal an
overall deficit in working memory of the two groups with
learning disabilities compared with the control group.
However, unexpectedly, there were no differences between
the two groups of children with disabilities normal vs. low IQ
Mahajan, 2010. Under achievements may however be a
symptom of any cognitive, emotional, and social difficulties.
And one of the most important is learning difficulties, Lyon,
1996. Children with learning disabilities have trouble
performing specific types of skills or completing tasks. Current
technologies may require student training to be effective
classroom supports. Teachers, parents and schools can
create plans together that tailor intervention and
accommodation to aid the individual in successfully becoming
independent learners Oliver, 2013; Al-Yagon & Margalit,
2012. Therefore learning disabilities are to be tracked as early
as possible and this requires adequate awareness among
different personnel who remain in contact with these children.
Especially the school teachers, as learning difficulties are
common among school children. For someone diagnosed with
a learning disability, it can seem scary at first. But a learning
disability doesn't have anything to do with a person's
intelligence-after all; successful people such as Walt Disney,
Alexander Graham Bell, and Winston Churchill all have
learning disabilities. Therefore Researcher planned to carry
out this study on learning disabilities Kim et al., 2006; Frijters
et al., 2011. There are four types disability which are Reading
Disorder, Written Disorder, Mathematical disorder and
Learning disorder under the mathematics have four types are
Linguistic skills, Perceptual skills, Mathematical skills and
Attentional skills. Learning disability has been called a lot of
names, from mental handicap or mental retardation to word
blindness, cerebral dominance, brain injured, Strauss
syndrome Alfred Strauss, born in Germany, created the
diagnostic category of minimal brain damage in children,
Minimal brain dysfunction, Dysfunction or malfunctions of the
brain, Perceptual disorder, and Streptosymbolia Maehler &
Schuchardt, 2009. The Education for All Handicapped
Children Act was passed to guarantee an appropriate public
education for all students. This law was renamed IDEA. The
Individuals with Disabilities Education Act in 1990, Donaldson,
1994. Even though a learning disability may occur
concomitantly with other handicapping conditions e.g. sensory
impairment, mental retardation, social and emotional
disturbance or environmental influences e.g. cultural
differences, insufficient/inappropriate instruction, psychogenic
factors it is not the direct result of those conditions or
influences Gupta, 2017; McCutchen et al, 2002. The U.S.
Survey of Income and Program Participation survey shows the
LD prevalence rate among the U.S. population ages 6 and
older to be 1.8%, totaling 4.67 million Americans. Males are
much more likely to have acknowledged learning disabilities
than female. The unemployment rate for those with LD was
twice that of those without LD 2.4 million American public
school students identified with LD as eligible under IDEA. The
Individuals with Disabilities Education Act Grigorenko, 2009;
Heiman et al., 2008. Assistive technology can also help many
students work around their learning disabilities. Assistive
technology can range from "low-tech" equipment such as tape
recorders to "high-tech" tools such as reading machines which
read books aloud and voice recognition systems which allow
the student to "write" by talking to the computer. Its important
to remember that Child's learning disabilities may need help at
home as well as in school. Teachers can help children by
breaking tasks into smaller steps, and giving directions
verbally and in writing, giving the students more time to finish
school work or take tests, letting the student with reading
problems use textbooks-on-tape available through Recording
for the Blind and Dyslexic, allowing the student with listening
difficulties borrow notes from a classmate or use a tape
recorder, and letting the student with writing difficulties use a
computer with specialized software that spell checks,
grammar checks, or recognizes speech.

2. METHOD
Experimental and control study research design. The study was conducted at the following schools respectively, Mamallan matriculation higher secondary school, Kanchipuram, Kanchipuram district. The school is recognized by the government of Tamil Nadu and affiliated to the Directorate of matriculation school, Chennai. The school accommodates various levels-The pre-primary level L.K.G and U.K.G the primary level I, II, III, IV, and V standards, the secondary level VI, VII, VIII, IX and X standards, the higher secondary level XI and XII standards respectively. The medium of instruction is English, with various co-curricular activities. The total number of primary school teachers is 25 and the number of primary school children is 430. The total number of primary school teachers is 29 and the number of primary school children is 440 at Infant Jesus Matriculation higher secondary school, Kanchipuram, Kanchipuram district. Indu Mission Matriculation higher secondary school in Kanchipuram, Kanchipuram district - The total number of primary school teachers is 25 and the number of primary school children is 450. The sample size is 120 primary school teachers. In these 60 primary school teachers were allotted in study group and 60 primary school teachers were allotted in control group under Kanchipuram district for assessing the effectiveness of IEC package on knowledge, regarding learning disabilities Padhy et al., 2015. Non probability convenient sampling technique was used to select the study samples. Primary school teachers who are handling classes from 1st-5th standard, Primary school teachers who have done Diploma or Degree or undergraduate, Primary school teachers who can converse in English, Primary school teachers who are interested to participate in the study are included. School teachers who are not willing to participate in the study are excluded. Written consent form obtained from each individual. In order to determine the sample validity of the content validity the tool was submitted to three Nursing experts, A Pediatrician and to the expert from the Meenakshi Medical College and their suggestions were incorporated in the tool. The reliability of the tool was assessed by test re-test method the r value is r = 0.9, hence the tool is considered more reliable and feasible proceeding with the main study. Informed consent was obtained from the study participants, after explaining the nature and duration of the study. Researcher has explained benefits of IEC Package on Learning disabilities. Assurance was given to the individuals that each individuals report will be maintained confidentially and they can withdraw from the study at any point of time. A brief explanation was given to the teachers about the purpose of the study with their consent to gain co-operation for the study. The pilot study was conducted for 10 primary school teachers, Study group-10 and control group-10 by non-probability convenient sampling method. The time taken to conduct the test and teaching program was one hour. The demographic variables and the level of knowledge was obtained with the help of structured questionnaire from both the study and control group, then the teaching program IEC package was provided to the teachers in the study group for 30 minutes and the post test was conducted from both the study and control group. The data collected from the study and control group were analyzed using descriptive and inferential statistics. The results showed that there was significant difference among the pretest and posttest level of knowledge among primary school teachers in the study group after the IEC package. The tool was considered feasible to proceed with the main study. The investigator has collected the data within four weeks of time with effect from 01/07/2018 to 31/07/2018. Vlacic, 2016 was provided in the smart class with the help of pamphlets and power point presentation for 40 minutes and after a period of one week the post test of conducted. Likewise the structured questionnaire were provided to the teachers in the control group by selecting 5 primary school teachers each day for about 6 days and no teaching program was conducted, Then the post test was conducted. The collection of data was performed within the stipulated time of 4 weeks.

3. DATA ANALYSES AND RESULTS
Chi Square Test, Student Paired t test, Student Unpaired t test and ANOVA for data analysis have been used. Frequency and percentage distribution of sample to assess demographic variables of study and control group was used. Paired “t” test is used for comparing the pretest and posttest level of knowledge regarding learning disabilities among teachers in study group and control group. Unpaired “t” test is used for comparing the level of knowledge between study and control group. Chi-square test will be used to find out the association between the level of knowledge and their demographic variables. Considering the age distribution, 26(43.3%) primary school teachers are aged 21-25, and 12(20%) are aged 26-30 and 22 (36.7%) are aged > 30. 24 (40%) primary school
teachers are aged 21-25, and 16 (26.7%) are aged 26-30 and 20 (33.3%) are aged >30. Regarding the sex 4(6.7%) primary school teachers are male and 56(93.3%) are female. 6(10%) primary school teachers are male and 54(90%) are female group. Considering education 24(40%) did diploma in teacher training, 6(10%) did under graduation, 16(26.7%) did under graduation with teachers training and 14(23.3%) did post-graduation with teachers training. 20(33.3%) primary school teachers did diploma in teacher training, 12(20%) did under graduation, 10(16.7%) did under graduation with teachers training and 18(30%) did post-graduation with teachers training. Regarding class teacher in charge 8(13.3%) are teaching I std, 12(20%) are teaching II std, 14(23.3%) are teaching III std, 12(20%) are teaching IV std and 14(23.3%) are teaching V std. 10(16.7%) are teaching I std, 8(13.3%) are teaching II std, 14(23.3%) are teaching III std, 16(26.7%) are teaching IV std and 12(20%) are teaching V std in the control group. Considering the income of primary teachers 2(3.3%) is earning Rs 1520 per month, 44(73.3%) are earning Rs 1521-4555 per month, 8(13.3%) are earning Rs 4556-7593 per month, 6(10%) are earning Rs 7594-11361 per month, and none are earning more than Rs 11362 in the study group and in the control group none of them are earning Rs 1520 per month, 50(83.3%) are earning Rs 1521-4555 per month, 10(16.7%) are earning Rs 4556-7593 per month, none earned more than Rs 7594 per month. Regarding the experience 30(50%) are having < 5 yrs, 14(23.3%) are having 5-10 yrs, 6(10%) are having 11-15 yrs, 34(56.7%) are having < 5 yrs, 16(26.7%) are having 5-10 yrs, 6(10%) are having 11-15 yrs, 4(6.7%) are having > 15 yrs in control group. Considering the exposure to learning disabilities 20(33.3%) primary school teachers are exposed to children with learning disabilities and 40(66.7%) are not exposed to children with learning disabilities, 16(26.7%) primary school teachers are exposed to children with learning disabilities and 44(73.3%) are not exposed to children with learning disabilities. Regarding the sources of information 4(6.7%) primary school teachers received information from internet, 20(33.3%) received from newspaper, 20(33.3%) from health magazines, 10(16.7%) by attending health training programs and 6(10%) from other health personnel. 6(10%) by attending health training programs and 6(10%) from other health personnel.

**Table 1. Pretest level of knowledge regarding learning disabilities among nursing teachers in study and control Group**

<table>
<thead>
<tr>
<th></th>
<th>Pr</th>
<th>Te</th>
<th>Po</th>
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<tbody>
<tr>
<td></td>
<td>e</td>
<td>Te</td>
<td>Po</td>
</tr>
<tr>
<td></td>
<td>36(6)</td>
<td>24(4)</td>
<td>36(6)</td>
</tr>
<tr>
<td></td>
<td>33.04±1</td>
<td>4.14b,c</td>
<td>0.3±0</td>
</tr>
<tr>
<td></td>
<td>24(4)</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>32.61±1</td>
<td>2.75a,d</td>
<td>2.75a,d</td>
</tr>
</tbody>
</table>

- There is no statistical significance difference between study group and control group in pre test, b- There is statistical significance difference between study group and control group in post test, c- There is statistical significance difference between pre and post test in the study group and d- There is no statistical significance difference between pre and post test in the control group. The pretest analysis as shown in Table (1) depicted that regarding the pretest knowledge among teachers in study group 36(60%) had inadequate knowledge, 24(40%) had moderate knowledge on learning disabilities. Considering the control group 36(60%) had inadequate knowledge, 24(40%) had moderately knowledge in the control group and none of them had adequate knowledge. The posttest reveals the frequency and percentage distribution of posttest level of knowledge regarding Learning disabilities among teachers. The analysis depicted that regarding the posttest level of knowledge among teachers in study group 8(13.3%) have inadequate level of knowledge, 18(30%) have moderate level of knowledge on learning disabilities and 34(56.7%) had adequate knowledge on learning disabilities. Considering the control group analysis 44(73.3%) had inadequate knowledge, 16(26.7%) had moderately adequate knowledge and none of them had adequate knowledge on learning disabilities. Table 1 represents the comparison of pretest mean and sd of Pretest level of knowledge regarding Learning disabilities among teachers between the groups. The analysis reveals that the mean and sd value was 33.04±14.14 in study group and the mean and sd value 32.61±12.76 of control group which was not statistically significant. The comparison of posttest mean and sd of knowledge regarding learning disabilities among teachers between the groups.
Learning disabilities among nursing teachers between study group and control group. The analysis reveals that the mean and sd value was 67.84±23.21 in study group compared with the mean and sd value 29.19±15.93 of control group which shows high significance. Compare the pretest and posttest mean and sd level of knowledge regarding learning disabilities among teachers in the study. In study group the analysis depicted that the mean with sd value of 33.04±14.14 of pretest when compares with the mean and sd value of 67.84±23.21 in the post test which was highly significant. Considering the control group the analysis depicted that the mean with sd value of 32.61±12.75 in pretest and the mean with sd value of 29.20±15.93 in the post test with respect to knowledge which was not statistically significant.

**Table 2.** To determine the effectiveness of IEC package on knowledge of teachers regarding Learning disabilities in the Demographical Variables within the experimental group only

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Pre Test Value</th>
<th>Post Test Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean±SD</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-25 Yrs.</td>
<td>26</td>
<td>33.89±15.67</td>
</tr>
<tr>
<td>26-30 Yrs.</td>
<td>12</td>
<td>32.77±12.53</td>
</tr>
<tr>
<td>&gt; 30 Yrs.</td>
<td>22</td>
<td>32.18±14.29</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4</td>
<td>31.67±21.21</td>
</tr>
<tr>
<td>Female</td>
<td>56</td>
<td>33.14±14.06</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma in Teacher Training</td>
<td>24</td>
<td>32.72±14.37</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>6</td>
<td>31.11±15.03</td>
</tr>
<tr>
<td>Undergraduate with teachers education</td>
<td>16</td>
<td>38.16±16.72</td>
</tr>
<tr>
<td>Post graduate with teachers training</td>
<td>14</td>
<td>28.57±11.20</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 5 Yrs.</td>
<td>30</td>
<td>30.64±14.72</td>
</tr>
<tr>
<td>5-10 Yrs.</td>
<td>14</td>
<td>28.66±7.64</td>
</tr>
<tr>
<td>11-15 Yrs.</td>
<td>6</td>
<td>36.66±8.82</td>
</tr>
<tr>
<td>&gt;15 Yrs.</td>
<td>10</td>
<td>44.20±18.52</td>
</tr>
<tr>
<td>Exposure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>20</td>
<td>34.76±17.45</td>
</tr>
<tr>
<td>No</td>
<td>40</td>
<td>32.18±12.58</td>
</tr>
<tr>
<td>Source</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attending health training programmer’s</td>
<td>10</td>
<td>30.66±17.96</td>
</tr>
<tr>
<td>From other health personnel</td>
<td>6</td>
<td>44.77±18.63</td>
</tr>
</tbody>
</table>

Table 2 represents the ANOVA test among the experimental group within the pretest and posttest how was the association in demographical variables and all other variables do not have the association among the group variables i.e. not statistically associated.

4. DISCUSSION

The discussion of the data analyzed based on the objectives of the study. The problem statement was “A study to assess the effectiveness of IEC package on knowledge of teachers regarding learning disabilities at selected schools in Kanchipuram. The research design was quasi experimental research design before and after only design. It was decided to do the study on 120 samples in which 60 were given IEC package and the other 60 followed routine activities. The study was done among teachers in 4 different schools. The study was to associate the posttest level of knowledge among teachers regarding learning disabilities with their demographic variables in study and control group. The association of the posttest level of knowledge regarding learning disabilities among primary school teachers in study group revealed that, there was no significant association found between the knowledge regarding learning disabilities with their demographic variables in study group. The association of the posttest level of knowledge regarding learning disabilities among primary school teachers in control group revealed that, there was no significant association found between the knowledge regarding learning disabilities with their demographic variables in control group. Hence “There will be significant association between posttest knowledge scores
and demographic variables” was not accepted. Similar study was conducted by Reid Lyon & Weiser, 2009, on teacher's knowledge on Learning disabilities. The sample consisted of 100 regular class room teachers teaching 1st to 5th grade students in 20 schools in Kanchipuram districts. Teachers completed a 30 item test designed by the researcher, which had adequate psychometric properties. The results of the study revealed that teachers had a moderate level of knowledge on learning disabilities. Female teachers were found to be more knowledgeable than male teachers. Teacher’s level of knowledge was unrelated to teacher’s age, teaching expertise or academic qualification.

5. CONCLUSION
This study was done to assess the effectiveness of IEC package on Knowledge of teachers regarding learning disabilities at selected schools, Kanchipuram. The result of the study concluded that IEC package has improved the knowledge among primary school teachers. Therefore the investigator felt that more importance should be given to IEC package. The findings of the study which enables us to conclude that intervention on IEC package will improve the knowledge regarding learning disabilities among primary school teachers. Nurses play an important role in identifying the health problems in children; they participate in nursing activities at all three levels like primary, secondary and tertiary. More number of nurses should be encouraged to work as school health nurses or they can participate in school health programmes to achieve the health related goals of our nation. The deficit of primary school teachers towards learning disabilities indicates that orientation programmes by the nurses would benefit the teacher population for early identification of learning disability and for providing remedial help to the children. In the nursing point of view the extended and expanded role of nurses being the trend, the school health nurse can assume role as health educators in promotion of child health. Mamallan Matriculation Higher Secondary School with the primary school teachers helps them design better programmes to intervene learning disabilities in children. Using the information education communication package where nurses can incorporate several strategies in identifying and intervening child with learning disabilities or at risk for learning disabilities. This reduces the cost as well as the service being provided at the sight of the problem. This also improves the image of nurse in public health. The nursing education is framed in such a way it equips the nurse with the essential knowledge, skill, and attitude for meeting the needs of the society at primary, secondary and tertiary levels. The nursing students should be given an adequate orientation towards childhood disorders and how as a participant in a multidisciplinary approach one could identify the problems in the community and more specifically as a school health nurse how can one utilize the teachers in care of the school children. The nursing curriculum should also prepare nurses to identify the problems that are occurring in school children therefore early identification could help in early intervening of the problems. Collaborate with governing bodies to formulate standard policies and protocols to emphasize on learning disability and its coping strategies for primary school teachers. Organize programmes for early identification of children with learning disability and impart awareness on learning disability and its coping strategies. Arrange and conduct workshops, conferences, seminars on learning disabilities and its coping strategies for primary school teachers. Conduct in-services programme and continuing education programme on learning disability and its coping strategies for primary school teachers. Promote more research on learning disability and its coping strategies for primary school teachers. Disseminate the findings of research through conferences, seminars and publishing in nursing journals. Promote effective utilization of research findings in providing awareness on learning disability and its coping strategies. A study can be conducted to assess the effectiveness of conducting workshop on early identification of learning disabilities on children among parents of primary school teachers. A similar study can be conducted on large samples for better generalization. A comparative study can be conducted to assess the awareness of learning disability and its coping strategies for primary school teachers.

6. CONFLICT OF INTEREST
The authors and planners have disclosed no potential conflicts
7 REFERENCES


