

**A STUDY TO ASSESS THE EFFECTIVENESS OF INSTRUCTIONAL
ACTIVITIES ON DYSGRAPHIA AMONG PRIMARY SCHOOL
CHILDREN IN SELECTED SCHOOL AT
TIRUNELVELI DISTRICT**



**A DISSERTATION SUBMITTED TO THE TAMIL NADU
DR. M.G.R.MEDICAL UNIVERSITY, CHENNAI, IN
PARTIAL FULFILLMENT FOR THE DEGREE
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Internal Examiner

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APPROVED BY THE DISSERTATION COMMITTEE ON : JULY 2018

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BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled “**A Study to Assess the Effectiveness of Instructional Activities on Dysgraphia Among Primary School Children in Selected School at Tirunelveli District**” is a bonafide research work done by **Mrs. Suja.M, M.Sc Nursing II year** under the guidance of **Mrs. D. Saratha Bai.M.Sc (N), MBA(HM), HOD of Mental Health Nursing**, in partial fulfilment for the Degree of Master of Science in Nursing under The Tamil Nadu, Dr. M.G.R. Medical University, Chennai.

Place: Vallioor

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Date:06/08./2018

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CERTIFICATE BY THE GUIDE

This to certify that the dissertation entitled “**A Study to Assess the Effectiveness of Instructional Activities on Dysgraphia Among Primary School Children in Selected School at Tirunelveli District**”, is a bonafide research work done by **Mrs. Suja.M, M.Sc Nursing II year**, Nehru Nursing College, Vallioor, in the partial fulfilment for the Degree of Master of Science in Nursing under The Tamil Nadu, Dr.M.G.R. Medical University, Chennai.

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DECLARATION

I hereby declare that the present dissertation titled “**A Study to Assess the Effectiveness of Instructional Activities on Dysgraphia Among Primary School Children in Selected School at Tirunelveli District**”, is the outcome of the original research work undertaken and carried out by me, under the guidance of **Mrs. D. Saratha Bai, M.Sc(N), MBA(HM), HOD, Mental Health Nursing Department**, Nehru Nursing College, Vallioor. I also declare that the material of this has not formed in anyway, the basis for the award of any degree or diploma in this university or any other universities.

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ACKNOWLEDGEMENT

Though only my name appears on the cover of this dissertation, a great many people have contributed to its production. I owe my gratitude to all those who have made this dissertation possible and because of whom my gratitude experience has been one that I will cherish forever.

My deepest gratitude is to my **God Almighty** for His abundant grace, which strengthened me in each step throughout this endeavor.

It is my honor to thank our Chairman, **Mr. Kanoji B.Sc.**, and the Deputy Chairman, **Mr. Vinoji B.A.**, of Nehru nursing college for providing entire facility and encouragement for conducting this study.

I take pride in expressing my heartfelt thanks to the great personality Principial, **Dr. Margaret Ranjitham M.Sc.(N), Ph.D.** Nehru Nursing College, Vallioor who helped me by giving constant help, affectionate, and moral support throughout the study.

I would like to express my gratitude to my research guide **Mrs. Saratha Bai M.Sc(N), MBA(H.M)**, HOD, Mental Health Nursing Department, Nehru Nursing College, Vallioor for always being so kind, helpful , motivating and support given during this work.

I convey my deepest gratitude to our class coordinator, **Prof. Mrs. Baby Uma M.Sc(N)**, HOD, Child Health Nursing Department, Nehru Nursing College, Vallioor, class co-coordinator for her invaluable guidance, continued support, expert suggestions, kind co-operation and encouragement and round the clock support which helped me in completion of the dissertation for her efficient planning and co-ordination throughout the study.

I express my sincere thanks to **Mr. Bennet Raj. S M.Sc (N), M.Sc (Psy)**, Assistant Professor, Mental Health Nursing Department, Nehru Nursing College, Vallioor for his timely

guidance, valuable suggestions, enduring interest, constant support and motivation which helped me in the research.

I express my heartfelt gratitude to **Mrs.Anbarasi M.Sc (N),Phd. Mrs.Subi Bai M.Sc (N), Mrs.Hilda M.Sc (N), Mrs.Venumalini M.Sc(N), Mrs.Sweetlin M.Sc(N), Mrs.Sugasini M.Sc(N)**, for their constant motivation and support during the course of my thesis. My sincere thanks for their help and valuable suggestions for conducting my study. I express my thanks to the entire faculty of Nehru Nursing College, Vallioor, for their co-operation and encouragement.

My sincere thanks to **Mrs. Meenakshi, Headmistress of Swami Vivekananda Primary School** at Tirunelveli District & The Headmistress of **Salvation Army Primary School** in Vallioor at Tirunelveli District for their help in granting permission to conduct pilot study and main study.

I extend my great thanks to our Research committee members and tool validators for their valuable suggestions. I extend my great thanks to **Mr.P. Arumugam, Professor Bio Statistics** for the valuable help & suggestions in analysis tabulation and presentation of data.

I extend my thanks to **Miss.Isaivani, Librarian** of Nehru Nursing College, Vallioor for her help in providing books, journals and literature for my study.

I express my deep sense of gratitude and heartfelt thanks to the **experts** who have validated and edited my study and who devoted their valuable hours in solving my doubts and in providing meticulous attention.

I convey my lovely thanks to my dear husband **Mr. Muthu Kumar** my lovable daughter **Mast.Sruthi Neha**, and my parents **Mr. Murugesan & Mrs. Jeya**, my brother **Mr. Suthan & Mr. Subash** who is the backbone in completion of the study.

I would like to extending my thanks to continue to all my friends, well wishers and my family members for their support, guidance and care who were directly and indirectly involved in my progress of work and the successful completion of the study.

INVESTIGATOR

ABSTRACT

The present dissertation was under taken “ **A study to assess the effectiveness of Instructional activities on Dysgraphia among primary school children in selected school at Tirunelveli District**”.

OBJECTIVES OF THE STUDY

- ❖ To assess the pre test and post test level of dysgraphia among primary school children.
- ❖ To evaluate the effectiveness of instructional activities on dysgraphia among primary school children .
- ❖ To find out the association between the pre test level of dysgraphia among primary school children with their selected demographic variables.

HYPOTHESIS

- ❖ **H₁**. There will be a significant difference between the pre test and post test level of dysgraphia among primary school children.
- ❖ **H₂**- There will be a significant association between the pre test level of dysgraphia among primary school children with the selected demographic variables .

RESEARCH METHODOLOGY

Pre test was conducted to assess the effectiveness of instructional activities on dysgraphia among primary school children. Quantitative research approach with Quasi- experimental, one group pre test & post test design was adopted to determine the effectiveness of instructional activities on dysgraphia. The study was conducted in Swami Vivekananda Primary School in Ramayanpatti, situated in Tirunelveli. Samples were selected by using Stratified random sampling technique with lottery method. The instructional activities was given to the samples in

study group for one hour every day –all working days for one month. After one month post test was conducted using the Dysgraphia disability scale by the investigator.

- The study finding reveals that during pre-test , in study, among 30 primary school children with dysgraphia 26(86.67%) had mild to moderate disability and 4(13.33%) had minimal disability of dysgraphia.
- During post test, in study, among 30 primary school children with dysgraphia 4(13.33%) had mild to moderate disability , 24(80%) had minimal disability of dysgraphia and 2(6.66%) were normal level of dysgraphia.
- The mean score on level of dysgraphia among primary school children in study group were 48.53 in pre test and 57.6 in post test respectively. Standard deviation value were (3.57) in pre test and (4.96) in post test respectively. The mean difference score was 9.07. The paired't' values were 14.59* which is significant at $p < 0.05$. Hence the instructional activities was effective in reducing the level of dysgraphia among primary school children. So the research hypothesis was accepted.

CONCLUSION

From the results of the study, it is concluded that instructional activities are effective in reducing the level of dysgraphia. Those skills are easy to follow and cost effective. School children can do self instructional activities. Therefore, the investigator felt that more importance should be given to instructional activities to reduce dysgraphia.

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CHAPTER- I

INTRODUCTION

“When we care for the children, we care for the future”

-JOYCE KRISTEN

All children are artists. The problem is how to remain an artist once he grows up. Children's are our most valuable resources because every child we encounter is a divine appointment. They are the hands by which we take hold of heaven, and they are the best hope for the future.

Learning of academics is the core component of any school curriculum. For success in academic endeavours one has to acquire the basic components i.e. reading, writing, speaking, listening and spelling and in the formative stage the child acquires these components of learning. In process of learning some students learn easily these components without confronting any difficulties whereas for some students it is a challenging and arduous task to have a mastery over these components of learning that leads to academic fiasco and maladjustment in school and home environment. When a child doesn't seem to be learning, some teachers expel the child from classroom and parents criticize the child and think both of him/her as stupid, or may be just too sluggish to want to learn. Parents also having responsible for helping their children to grow physically, intellectually, emotionally and spiritually.

Primary school-age children's are from the ages of **5 to 12**. Child development is the period of physical, cognitive, and social growth that begins at birth and continues through early adulthood. Primary school age it ends around puberty, which

typically marks the beginning of adolescence. In this period, children develop socially and mentally. They are at a stage where they make new friends and gain new skills, which will enable them to become more independent and enhance their individuality.

When the child enters the world, he is unaware of its complexities. His mind is a clean slate and gradually with increase in interaction with environment he keeps assimilating and accommodating concepts and thereby adjusts to his surroundings. During the process of interaction and adjustment he is able to learn certain things and faces problems in learning certain others. Thus the child seems to be in a disabled or difficult situation in the learning of different things essential for his development.

Children are expected to be high scorers in school: when they fail, parents get frustrated. In every class, at least 20% of children get poor marks and they are considered as scholastically backward. About 10% of young children suffer from learning disability. Poor marks in examinations indicate that the children suffer from learning problem but they are labelled as underachievers. These children may have normal or above IQ. The discrepancy between their high intelligence and poor academic performance is the nucleus of the matter in learning disability.

In a definition given by **Kirk in 1962**, "A Learning Disability (LD) refers to a retardation, disorder or delayed development in one or more of the process of speech, language, reading, spelling, language writing or arithmetic resulting from a possible cerebral dysfunction and emotional or behavioural disturbances and from mental retardation, sensory deprivation or cultural or instructional factors".

The learning disabled student was often been referred to as an individual with an "invisible handicap". The learning disabled child usually appears normal in every respect, except for the fact that his/her learning difficulties limit progress in school.

Children with written difficulties show poor and illegible handwriting, giving pressure on the hand while writing, interchanging of capital and small letters, improper spacing of letters and words, mirror writing, reversals, letters are not on the line, and lack of fluency in writing. The term used for these writing disabilities is **Dysgraphia**.

Dysgraphia is a medical term for a brain condition that cause poor handwriting or problems performing the physical aspects of writing (such as an awkward pencil grip or bad handwriting) spelling, or putting thoughts on paper. The disorder causes a person's writing to be distorted or incorrect.

People with dysgraphia usually can write on some level and often lack other fine motor skills finding tasks such as tying shoelaces difficult. It often does not effect all fine motor skills. They can also lack basic spelling skills (for example having difficulty with 'b' and 'd', 'p' and 'q') and often will write the wrong word when trying to formulate thoughts on paper. Children with this disorder may have other learning disabilities but they usually have no social or other academic problems.

Effort must be given to help in the handwriting of students to become as fluent and legible as possible. In order to plan a diagnostic prescriptive, remedial or preventive programme for children with Dysgraphia the prime necessity is to find out the kinds and types of Dysgraphia in children that are most commonly expressed by our teachers.

Dysgraphia is also in part due to underlying problems in orthographic coding(Brain activation for letters, symbols, and digits) the orthographic loop(the storing of a word is written based on hand-eye coordination), and graphomotor output (the movements that result in writing) by one's hands, fingers and executive functions involved in letter writing. The orthographic loop is when written words are stored in

the mind's eye, connected through sequential finger movement for motor output through the hand and feedback from the eye.

NEED FOR THE STUDY

The 86th Amendment in the Constitution declaring elementary education the fundamental right of every child mandates the government to ensure that all children, including children with disabilities has access to education, and needed support must be provided. The SSA aims to provide useful and relevant elementary education to all children including children with disabilities in the age range of 6-14 years by 2010. The person with Disability Act (1995) makes it mandatory on the part of government to provide needed educational facilities for the disabled. SSA programme lays special thrust on making education at the elementary level useful and relevant for children by improving the curricula, child centered activities and effective teaching learning strategies. It ensures that every child with special needs, irrespective of the kind, category and degree of disability, is provided education in an appropriate environment. It adopts "Zero rejection" policy so that no child is left out of the education system.

India is thought to have approximately ninety million people with varying degrees of learning disabilities and an average class in schools has about five students with learning disabilities (**Sunil Thomas, Bhanutej and John, 2003**). The incidents of dyslexia in primary school children in India have been reported to be 2-18% of dyslexia (14%), of dysgraphia 14.5% of dyscalculia (**Shah, 1981 and Khanna, 1981**). The prevalence of specific learning disabilities was 15.17%, whereas 12.5%, 11.2% and 10.5% had dysgraphia, dyslexia and dyscalculia respectively (**Mogasale et. al, 2012**). The Pratham Committee (2015) reports that the children of all classes lag behind two classes in their reading levels.

Recent epidemiologic data indicates that learning disorder is more and largest category of student receiving special education services. Worldwide about 8 million children have difficulties in reading and writing. In that 10-15% eventually drop out of primary school children, and 8% of found among the adolescents. About youths with the history of substance abuse have problems along with reading and writing. Overall 66% of males are affected by writing disability and 5.7 million (42%) of school age children have the learning difficulties. Two-thirds 66% of male children are affected by writing disability.

Indian paediatrics (2013) Learning disability clinic KEM Hospital, Mumbai, analyzed the profile of children with poor school performance report the aetiology of poor school performance (PSP) in children assessed the disabilities in western India over 12 months. Specific learning disabilities (dyslexia, dysgraphia and dyscalculia) were the most commonest cause of poor school performance (73.76%).

Lalitha. K estimated that nearly 4 million school age children have learning disabilities, 7.7% of children have ever been told that they had learning disability. Prevalence of reading disability is conservatively estimated to the range between 4% to 6% in the general school aged population. In India, prevalence estimates of learning disability ranges from 9% to 30%. The incidence of dysgraphia in India is 2% to 18%, and of dyscalculia 5.5%.

According to **World Health Report**, 15% of children have serious learning disabilities. Epidemiological study of child and adolescent psychiatric disorders conducted by ICMR indicated the overall prevalence of mental and learning disorders in Indian children to be 12.5%. Mental disorders account for 5 of the top 10 leading causes of disability in the world for children above 5 years of age. Besides the

increase in number of children seeking help for emotional problems, over the years, the type of problems has also undergone a tremendous change.

In India, (2014) prevalence estimates of learning disability ranges from 9-39% and the incidence of dyslexia in primary school children has been reported to be 2-18%, of dysgraphia 14%, and of dyscalculia 5.5%.

Prevalence of specific learning disabilities among primary school children in south Indian city, department of pediatrics, **JN Medical College**, India, measures the prevalence of dysgraphia among the age group 8-11 years. In that, 12.5% had dysgraphia and 11.2% had dyscalculia. In Tamil Nadu, 42% of school children are affected by writing disorders. Boys are affected more than girls.

Prevalence rates of Children with specific learning disabilities involving math and written expression are difficult to estimate given the current lack of research evidence (**Cook L, et al., 2001**). The ASER Report (2015) says that 80 million children are in the age group of III, IV & V classes in India where 48% are below II class standards in basic skills like reading writing and arithmetic. Immediate attention is needed to help many of these children in these classes to quickly acquire basic skills to progress in school.

Studies conducted by the **Sree Chithira Thirunal Institute of Medical Sciences and Technology in Kerala in 2015** revealed that nearly 10% of the childhood population has developmental language disorders of one type or the other and 8-10% of the school population has learning disability of one form or the other.

Screening for learning disabilities for Classes I to VII in schools with follow up assessments by experts in 10 panchayats in Tamil Nadu revealed that 16% of these school children have a learning disability (**Suresh, 2012**).

Other studies have been done at Child Guidance Clinics in India (**Khurana, 2012; John & Kapur, 2011**) where 20% children attending the clinic were diagnosed to be scholastically backward. However, variables such as the socio-economic class, exposure to foreign language act as confounding variables in such clinic-based studies (**GEON, 2013**).

Of all the Specific Learning Disabilities some effort is made by some states on Dyslexia. Dysgraphia as a concomitant condition of dyslexia has been taken up. Dysgraphia on its own did not make much in roads into India. There is no nationwide study conducted so far on the prevalence of Dysgraphia which is a more pressing problem of disability in writing skills of children with as many as 65% of 4th class 53% of the 5th class children exhibit reading and comprehension problems in Andhra Pradesh (**Pratham, 2012**). Hence early identification and timely intervention is essential.

In Tamil Nadu, the paediatric New journal of April 2008, it was stated that the “prevalence of Dysgraphia is unknown, but is likely under identified”. Another study done in 2011 discussed the variance of prevalence rates in the elementary school ranging from 5.33%. It stated that writing disorders decreased as the age of the student increased. It was estimated that in the beginning of second grade, 37% of students had a form of dysgraphia which decreased to 17% at the end of the year.

Children with specific learning difficulties constitute 15% to 20% of student in Indian classroom. The student with physical disabilities and specific learning difficulties combined together constitute 25% of Children in classrooms. In fact, these children are the potential drop outs from the schools. Unfortunately, in India, many children with specific learning difficulties often remain undiagnosed because of a general lack of awareness leading to chronic poor school performance, class detention

and even dropping out of school (**Karande and Kulkarni, 2005; Karande, 2008**). The dropout rate for Telangana is 22.32% at the primary (Class I to V) level alone and 38.21% at the secondary level (Class I-X). The ASER Report (2014) conducted by Pratham found that in the rural areas of Telangana, this issue can be attributed to the employment of children in agriculture and allied activities, especially during harvest season. The primary school I- V age group contribute to the highest number of children among all the school going age groups in this State. Hence there is every need to attend to these children and their learning difficulties to stop the avalanche of future drop outs in Telangana State to make their dream of making every government school a centre of excellence at par with private schools come true.

Majority of the school children have writing difficulty. Roughly 65% of children diagnosed with learning difficulties have a primary problem with reading and writing related language skills. These are neuro-developmental in nature. Neuro developmental problems don't go away, but they do not mean that a student cannot get progress in school life. Most children with these difficulties can be taught writing and reading skills for success in school life. When these problems are identified early, they are more likely to learn instructional activities that will raise their writing ability to grade level.

Orton. (1973) found that children with dysgraphia tend not to advance as quickly as other children in school and their handwriting seems illegible. He found that incorrect paper position could lead to cramped fingers, which can directly lead to poor handwriting. So researcher introduces the technique of fine motor activities to prevent cramping. Researchers conducted a study to find the causes of dysgraphia in children. They found the causes like inherently noisy neuro motor system and dysfunctional motor control. Furthermore, these researches

reveal it as a temporary developmental delay for children. During this study, they address better improvement strategies like systematic techniques and remedial treatment by using drill and practices. Using drills that build the muscles used for fine motor activities to improve hand functions which lead to better handwriting.

Berry. (1999) and Keller. (2001) used some activities in a club to help the handwriting problems of students with dysgraphia. Activities which include, rub hands together, squeeze tennis balls, play with Wiki Stix, build small lego blocks, walk fingers up and down with the pencil. They describe about children, with dysgraphia, usually have some type of problem with automaticity that interferes with the retrieval of letter formation. The concentration on how to form the letter overwhelms the child to degree that the letter is written poorly. When letter formation is automatic, students can concentrate on spelling, grammar, sentence structure and other aspects of written language. However, for many students, with dysgraphia, letter formation is a cognitive task. Children with dysgraphia can become frustrated, leading to low motivation to use and practice written language.

There is a need to create awareness among all about the learning disabilities of children in India. The immediate task of all the policy makers, educationists and government is to provide proper knowledge to all about the remediation strategies to the children struggling with learning difficulties in all the states so these children learn like their normal peers. Even though every child's need for assistance typically depends on the nature of learning difficulty of the child it is the responsibility of the school to plan and provide a suitable solution so that they learn to cope up with their academics. Until and unless their needs are met in regular classroom within the

school, the Universalisation of Elementary Education and Equalization of Educational Opportunity to All cannot be fulfilled.

Writing difficulty is a common problem among school children. The investigator saw many school children having difficulty to perform their academic activities due to writing difficulty. Instructional activities are a better intervention to reduce dysgraphia. It is easy to practice in schools as well as in home. Hence the investigator intended to use instructional activities to reduce level of dysgraphia among children. This motivated the researcher to conduct study regarding effectiveness of instructional activities on dysgraphia among school children.

STATEMENT OF THE PROBLEM

“A STUDY TO ASSESS THE EFFECTIVENESS OF INSTRUCTIONAL ACTIVITIES ON DYSGRAPHIA AMONG PRIMARY SCHOOL CHILDREN IN SELECTED SCHOOLS AT TIRUNELVELI DISTRICT”.

OBJECTIVES OF THE STUDY

- ❖ To assess the pre test and post test level of dysgraphia among primary school children.
- ❖ To evaluate the effectiveness of instructional activities on dysgraphia among primary school children.
- ❖ To find out the association between the pre test level of dysgraphia among primary school children with their selected demographic variables.

HYPOTHESIS

H₁. There will be a significant difference between the pre test and post test level of dysgraphia among primary school children.

H₂- There will be a significant association between the pre test level of dysgraphia among primary school children with their selected demographic variables .

OPERATIONAL DEFINITION

Assess

In this study it refers to evaluate the primary school children with dysgraphia.

Dysgraphia

In this study it refers to writing disability where children have writing problems related to spelling, poor handwriting, poor hand coordination, mixing upper case and lower case letters and putting thoughts on paper as evaluated with dysgraphia disability scale.

Effectiveness

In this study it refers to the significant improvement in writing ability in experimental group and can be measured by comparing pre & post test mean score by using dysgraphia disability scale.

Instructional activities

In this study it refers to the ability of children to increase the speed and legibility of writing through various activities such as squeezing tennis balls, Rub

hands in circles on the carpet, sand writing, picking drumstick leaves and grains, playing with clay, cutting the shapes, connecting dots, copying letters from models, writing over the line, copying the picture from models, using keyboard to increase the finger tapping speed.

Primary School children

In this study it refers to Children between the age group of 8-10 years with writing difficulties from Vivekananda Primary school at Tirunelveli district.

ASSUMPTIONS

- Primary School children 8–10 years may have dysgraphia.
- Instructional activities may improve the writing abilities.

DELIMITATIONS

- Primary School children 8-10 years with writing difficulty
- The period for intervention is limited to one month
- Only 30 samples were selected for the study

CONCEPTUAL FRAME WORK:

Conceptualization refers to the process of defining abstract ideas which are formulated by generalizing particular manifestation of certain behaviours. “A conceptual framework serves as a guide or map to systematically identify a logical precisely relationship between variable”.

(Wood and Haber,1994)

A conceptual framework is a group of concepts and a set of propositions that spell out the relationship between them. The conceptual framework plays several

interrelated roles in the progress of science. Their overall purpose is to make scientific findings meaningful and generalize them. This facilitates communication and provides for systematic approach to nursing research, education, administration and practice.

The conceptual framework used in the present study based on **Imogene King's Goal attainment theory (1981)**. It consists of personal and interpersonal systems including: perception, judgement, action, reaction, interaction and transaction. This involves interaction between the researcher and the school children.

The concepts are:

➤ **Perception:**

It refers to people representation of reality. Here the researcher and the primary school children perceived the need of instructional activities to reduce the level of dysgraphia.

➤ **Judgement:**

Judgement is the decision which is made. Here the researcher decided to provide instructional activities to reduce the level of dysgraphia and the primary school children decided to participate in the research study.

➤ **Action:**

Action refers to the changes that have to be achieved. The researchers action was to provide instructional activities to reduce the level of dysgraphia and primary school children plan to receive the intervention.

➤ **Reaction:**

Reaction helps in setting a mutual goal. In this study the researcher and the primary school children set a mutual goal. Here the mutual goal was minimizing the level of dysgraphia.

➤ **Interaction:**

It refers to the verbal and nonverbal communication between individual or more who involved goal directed perception. Here the researcher encouraged the primary school children in a selected school to receive the instructional activities to reduce the level of writing disability. Instructional activities such as:

- Rub hands in circle on the carpet
- Squeezing the ball
- Using key board
- Sand writing
- Connecting dots or dashes
- Writing paragraph within the limited lines
- Tracing pictures
- Copying letter from pictures
- Play with clay
- Cutting the shapes
- Picking drumstick leaves
- Picking the grains

➤ **Transaction:**

Transaction is the achievement of a goal. Here the researchers goal was achievement of the reduction in level of writing disability and evaluate the effectiveness of instructional activities by using dysgraphia disability scale.

➤ **Feedback:**

Imogene king's goal attainment theory was utilized for this study. This research conducted on dysgraphia among primary school children. Decisions were made to provide treatment to the participants. Continuous use of instructional activities to minimize the writing disability of primary school children was evaluated by dysgraphia disability scale. There is improvement in the study group.

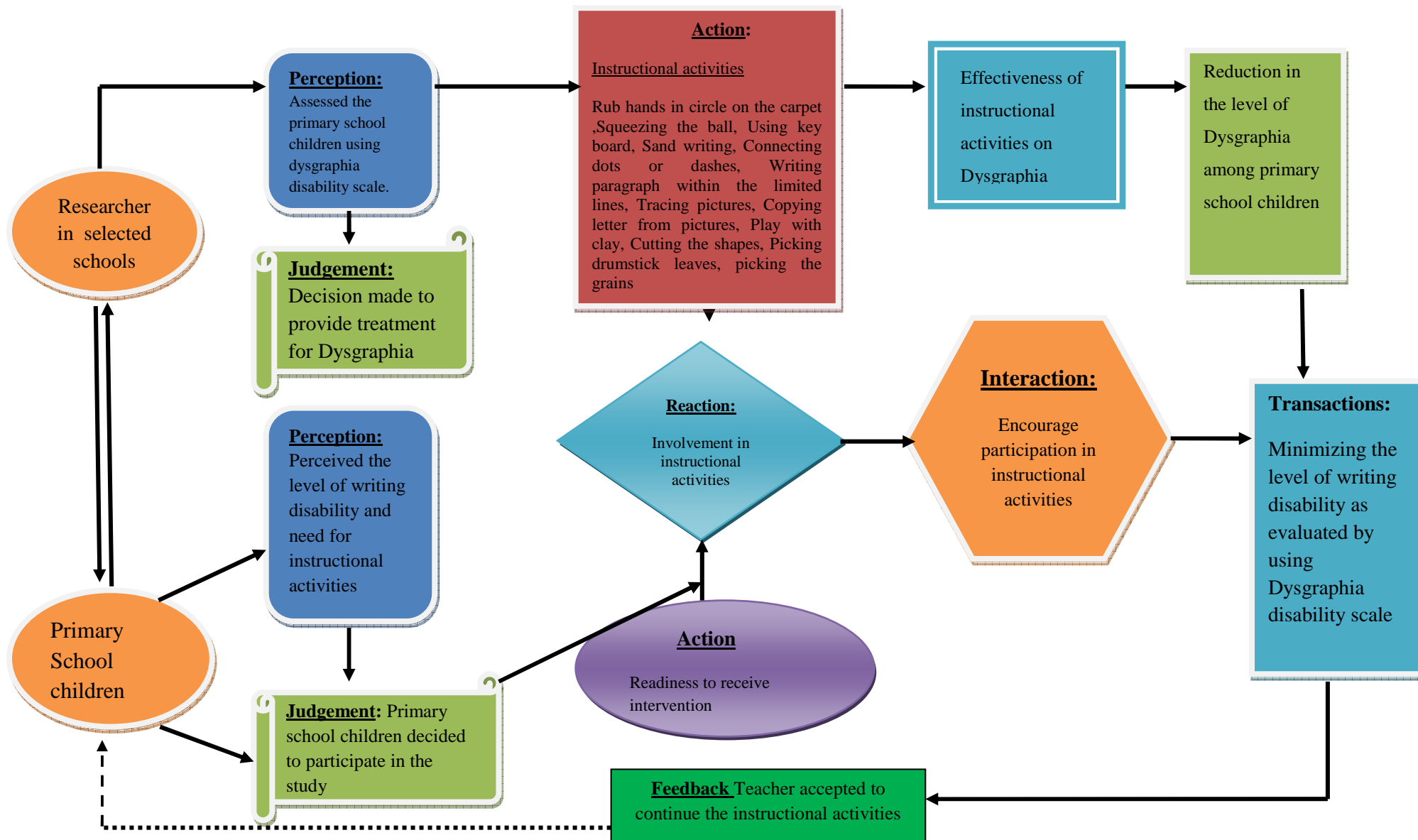


FIG-1.1 The conceptual framework based on Imogene King's Goal attainment theory (1981).

CHAPTER II

REVIEW OF LITERATURE

Review of literature was an important step in the development of any project. The task of reviewing literature induces the identification, selection, analyzing and reporting of existing information and the problem chosen for the study. The review of literature is defined as a broad, comprehensive, in depth, systematic and critical review of scholarly publications, unpublished scholarly printed materials, audio visual materials and personal communications. Related research studies were reviewed to broaden the understanding and to gain insight into the selected area under study. It is important for the researcher to carryout research successfully. The review is organized in the following sections,

Section A: Review of Literature regarding prevalence of dysgraphia

Section B: Review of literature regarding knowledge on dysgraphia

Section C: Review of literature regarding knowledge of instructional activities on dysgraphia

Section D: Review of literature regarding effectiveness of instructional activities on dysgraphia

SECTION A: REVIEW OF LITERATURE REGARDING PREVALENCE OF DYSGRAPHIA

MS. Ansu George (2015) a cross sectional study was conducted to assess the prevalence of dysgraphia in 4 primary selected schools , Perambur, at Chennai. Stratified randomized cluster sampling technique was adopted. The study reveals that out of 1036 children between 8 to 11 years of age, 112 children (10.8%) were identified as children with dysgraphia and taken for the study, remaining 924 (89.2%)

children had no dysgraphia. Among 112 childrens majority of 67(59.8%) had moderate disability, 45(40.2%) had minimal disability.

Mogasale V. (2013) , a cross sectional study was conducted to assess in Abhinava Bharathi Primary school in Karnataka, Multi-staged stratified randomized cluster sampling technique was used among children aged at 8-11 years from third and fourth standard. It commenced with identification of scholastic backwardness among children. The children were subjected to specific tests for reading, comprehension, writing and mathematical calculation. They have identified that 34.28% of children had learning disabilities. Among them 12.58% had dysgraphia,10.5% had dyslexia and 11.2% had dyscalculia.

Akhil, J.(2013). conducted experimental study on prevalence and pattern of learning disabilities in school children, Selection of samples were from randomly selected population of children both boys and girls in English and Hindi medium schools of rural area of Jaipur. The data was elicited through school teachers and students. Total population were 1116 (boys 668), (girls 448), age group was 6-13 years. Among them Dysgraphia was seen in 33(22.0%) students. It was more common in students from nuclear family. Language is also the barrier for most of the students. The study Conclusion reveals that boys are more prone for writing disability.

Akpan.M.U (2010) conducted a comparative study about the performance of school children with learning disabilities with that of their controls. A total of 132 primary school pupils aged 6-12 years in Ahilyapur primary school in Uyo, Nigeria . Children's with learning disabilities and their matched-controls were selected. Their academic performance was assessed and compared using the overall scores achieved in the first and second term examinations in the 2009-2010 academic sessions, as well as the scores in individual subjects. Number of days absent from school was

documented. Among pupils with learning disabilities 26.5% of them had high academic performance and 12.9% had poor academic performance respectively, pupils without such disabilities 38.6% had high academic performance and 9.1% had poor performances respectively. Learning disabilities are associated with poor academic performance in school children in Uyo, Nigeria.

Ojinnaka.N.C (2010) a cross-sectional study was carried out to assess among 572 pupils from six primary schools selected randomly from private and government schools in Gurdaspur, Punjab. Pupils with a normal IQ were selected using a systematic sampling method. The discrepancy method was adopted by their teachers, to determine the prevalence and pattern of writing disabilities among children living in Gurdaspur, a town in Ludhiana.132 pupils (23.1%) had indicating writing disabilities. Remaining 440 pupils (76.9%) were normal. It was concluded that there was a high prevalence of writing disabilities among primary school children in Punjab.

Maisha.(2012). conducted a descriptive study to assess the prevalence of dysgraphia in a large N= 2586 population based on random sampling method of elementary school children and in a sub sample of 293 children with at least one writing disorders at Haryana, Results reveal that the rate of deficits in writing were 4 to 5 times higher in samples already experiencing marked problems in one academic domain compared to the full population.

Janak, S. (2009). conducted an experimental study in the poor school performance in school children the sample consisted of 117 children's of 4th standard of an Vignan Vidyalayam school children in Visakhapatnam, Andhra Pradesh, selected by random method. The results suggested that a significant difference in IQ between the average and below average was seen on verbal performance and full

scale measures. The below average children also had an average IQ preponderance of nuclear families, lesser socio economic and material facilities were seen in the below average group. Poor concentration, although prevalent in both groups were greater in the below average group. Reading and writing difficulties tended to be slightly more common in the below average group. This study revealed that demographic profiles are linked with the reading and writing disorders.

Raskind W. (2012), performed a descriptive study in rural area in Sawai Madhopur in Rajasthan, to assess of Gender differences in severity of writing and reading disabilities. Purposive sampling technique was adopted. Gender differences in mean level of reading and writing skills were examined in 122 children (80 boys and 42 girls) and 200 adults (115 fathers and 85 mothers). Gender differences were found in writing. Boys and men were more impaired in handwriting and composing and spelling than girls and women. Men were more impaired than women in accuracy and rate of reading passages orally, but boys were not more impaired than girls on any of the reading measures. Males were consistently more impaired than females in orthographic skills, which may be the source of gender differences in writing, but not motor skills.

Mohanty, et al, (2013) studied 46 children using the NIMHANS Index of specific learning disabilities in the age group of 7 – 14 years with specific learning disabilities . They were primarily boys who attended the outpatient service of the Child and Adolescent Psychiatric Clinic at PGIMER, Chandigarh. The children reported various clinical problems such as behavioural problems (60.9%), neurotic traits (54.3%), history of developmental problems (39.1%) and family history of learning. The specific errors in their reading and writing skills are difficulty in comprehension, omission of words, difficulty using phonetic cues, difficulty in

spellings, tenses, mispronunciation, substitution of letters, illegible hand writing and visual spatial difficulties.

Yadav and Agarwal (2013) developed a writing disability scale consisted of 42 test items that measure the written expression under four areas. They are 1.Capitalization and Punctuation, 2.Syntax, 3.Vocabulary & spelling 4.Fluency. This test is standardized on children of 8-10 years. They identified 2.25% of school children (8-10 yrs) as writing disabled in rural schools in Karnataka. They found more boys than girls (B=2.66; G=1.71) having a Writing Disability.

Sunil Thomas(2014) assess the prevalence of Learning Disability among age group 6-17 years. Among school-age children, parents report an incidence of 2.2 percent (1.8 percent ages 6-11 and 2.6 percent ages 12-17). This differs significantly from the number and percentage of students being provided special education due to Learning Disability in the nation's schools. This could be a result of many parents who respond to surveys not acknowledging that their child has Learning Disability. The prevalence of reported Learning Disability is much higher among those living in poverty. For this group, among all ages over 5, the rate is 2.6 percent versus 1.5 percent for those living above poverty.

SECTION B: REVIEW OF LITERATURE REGARDING KNOWLEDGE ON DYSGRAPHIA

Priyesh Bahnwara (2015) A study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding dysgraphia among school teachers at Selected Schools, Kerala. Quantitative approach, One group pre-test post-test research design was adapted for this study. Sample size 40, The samples were selected by using Convenient Sampling Technique. The study was conducted at St.Therasas High School and Mar Ivanios High School located at Kottarakara town, Quilon (DT),

Kerala. Both the schools contain more than 750 students and 80 teachers approximately. Structured questionnaire method was used to assess the knowledge among school teachers at selected schools. The mean of the score of pre-test knowledge was 14, Standard Deviation is 3.6 of after the structured teaching programme the mean score of post-test knowledge was 24.35, Standard Deviation 2.89 respectively with obtained 't' value 18.29 was found. It to be highly significant at 0.05 level.

Johnson (2012) A study performed to assess the effectiveness of structured teaching programme on knowledge regarding instructional activities among school teachers at Selected Schools, Karnataka. One group pre-test post-test research design was adapted for this study. Sample size 60, The samples were selected by using Convenient Sampling Technique. The study was conducted at Montessori High school in Gandhinagar, Karnataka. The pre test score was 70.06 and Standard deviation 1.09 after the structured teaching programme the post test mean score was 75.41 and Standard deviation 1.08 and the 't' value 1.95 it was significant at $p < 0.06$ level.

Khatib (2011) studied the General Education Teachers' Knowledge of writing disabilities in India. Four hundred and five regular classroom teachers were taken as sample for the study who was teaching 1st to 6th grade students in 30 schools in 3 districts. Convenient sampling techniques was used. Structured teaching program was given. The findings of the study reveal that the teachers had a moderate level of knowledge of writing disabilities.

Shireesh Pal Singh (2011) The study was conducted normative survey method was adopted, 200 teachers as sample by stratified random sampling. As a data gathering instruments self made questionnaires were used to assess the knowledge of

school teachers regarding Dysgraphia in Durgapur, West Bengal. The mean score of the pre test 18.66 and Standard deviation 4.83 respectively. After the structured teaching program the post test mean score was 28.36 and Standard deviation 4.29 and the mean difference 9.64 respectively with the obtained 't' value 11.3 it was highly significant at 0.001 level.

Arunachalam D.et.al (2012) A study was conducted in Tamil Nadu, to assess the effectiveness of knowledge of teachers of primary school children in identifying Dysgraphia. The sample size of the study was 60 primary school teachers in selected schools at Madurai. It can be concluded that most of the teachers had poor and average knowledge regarding Dysgraphia in children, after the administration of teaching programme, knowledge of majority of teachers in the experimental group considerably increased in higher score, Whereas in the control group the pre test and post test scores remarked approximately similar. The 't' value was 14.59 it was significant at $p < 0.05$ level. This indicates that structured teaching programme was effective in increasing the knowledge of teachers regarding Dysgraphia.

Mayuri (2010) conducted a study to assess the knowledge on the effects of child's learning disabilities on parents. 60 parents of learning disability children (30 random sampling from associative + 30 children with specific Learning Disability) were selected by purposive random sampling techniques, from the cities (Hyderabad and Secundrabad) of Andhra Pradesh. The data was subjected to multiple regression analysis. The results revealed that the major determinant factors of these effects were education of the child, family income, severity of learning problems, presence of associative disorders, approach coping, negative perception and attitudes towards Learning Disability children, remedial programme and disciplinary practices.

Olivia (2010) Study on The knowledge and perceptions on learning disabilities among the parents in Tamil Nadu. The objective of the study was to find out the knowledge and awareness on learning disabilities, and the level of perceptions on remediation program and treatment services given to them. The findings of the study reveals that the majority of parents, educators and the members of the local school board have low knowledge and awareness on learning disabilities.

SECTION C: REVIEW OF LITERATURE REAGARDING KNOWLEDGE OF INSTRUCTIONAL ACTIVITIES ON DYSGRAPHIA

Delima (2012) A study was done in Mangalore, among 75 school teachers regarding effectiveness of self instructional module of learning disabilities among on school teachers. The mean percentage of knowledge in the pre test was 57.35% with the mean + SD 21.22+ 3.818 and mean percentage of knowledge in the post test was 91.67% with mean + SD 33.92 + 1.700. Overall findings of the study revealed that 52% of teachers had poor knowledge on learning disabilities and only 2% had good knowledge on learning disabilities.

Sivakami (2014) a study to assess the effectiveness of structured teaching programme on certain instructional strategies to overcome learning disabilities among school teachers at selected schools, in Kanchipuram District. Quantitative approach, one group pre test and post test research design was adopted. Convenient sampling techniques were used to select 30 samples. Structured questionnaire method was used to assess the knowledge among school teachers at selected schools. And the estimated t value was 6.34 where was significant ($p < 0.05$) level.

Virginia W(2014) a study to assess the knowledge regarding remedial writing instruction strategies among primary school teachers in selected schools at Matunga, Mumbai. Experimental study, convenient sampling techniques were used. 80 Samples

were selected for this study from different schools in Matunga .Pre test knowledge was assessed. After giving the structured teaching programme post test knowledge was assessed, it considerably increased in higher score. The ‘t’value was 41.39. It was significant at($p < 0.05$) level.

Nazik E.et.al (2013) A study to assess the effectiveness of knowledge of teachers in primary school children regarding instructional activities of Dysgraphia; Activities helps to improve the fine motor and gross motor coordination of children with dysgraphia, the sample size of the study is 60 primary school teachers in selected schools at Jodhpur in Rajasthan. It can be concluded that most of the teachers had poor and average knowledge regarding instructional activities of Dysgraphia in children, after the administration of teaching programme, knowledge of majority of teachers in the experimental group considerably increased in higher score. Whereas in the control group the pre test and post test scores remarked approximately similar. The ‘t’ value was 18.13 it was significant at $p < 0.05$ level. This indicates that structured teaching programme was effective in increasing the knowledge of teachers regarding instructional activities of Dysgraphia.

Pandey M.et.al.(2014) conducted to assess the effectiveness of structured teaching programme regarding instructional modules on Dysgraphia among selected school teachers in West Bengal. Data were collected from 80 randomly selected samples by using the structured interview schedule. The experimental design was selected for the study. 40 samples allocated for experimental group and remaining 40 samples for the control group. After structured teaching programme the paired ‘t’ value was 17.69 with the ($p < 0.001$) which is highly significant. So there was improvement of knowledge regarding instructional modules on dysgraphia.

SECTION D: REVIEW OF LITERATURE REGARDING EFFECTIVENESS OF INSTRUCTIONAL ACTIVITIES

Agarwal (2013) conducted a quasi experimental study in NIMHANS Bangalore, to assess the effectiveness of instructional package on the level of dysgraphia of primary school children. A total of 80 students taken as sample and self-report questionnaire was given. The pencil grip exercise was given to them and assessed by using the hand writing assessment scale. The pre-test mean score was 17.75, standard deviation was 4.19 and the post-test mean score was 28.78, standard deviation was 5.41. The paired difference between the pre-test and post-test value was 11.3 and 'p' value was significant at 0.001. This indicated that study was effective in improvement in the handwriting after giving the exercise.

Ms.Joy Priscilla (2013) Quasi experimental one group pre-test and post-test research design was adopted. A study to assess the effectiveness of instructional activities on dysgraphia and its identification among school children in Al- Ameen primary and high school, Bangalore. A total of 40 school children were recruited as samples. Duration of Instructional activities for 8 weeks. Findings of the study revealed that the overall mean pre-test score obtained by the subjects was 19.38 (41.22%) with the standard deviation of 3.93. The overall mean post test score was 39.53(84.10%) with standard deviation 2.86 . The total difference in the mean of overall pre-test and post-test knowledge score was 19.38 & 39.53 respectively with the obtained 't' value of 25.779 was found to be highly significant at the level of $p < 0.001$. It means there is significant difference between pre-test and post-test dysgraphia of school children regarding dysgraphia.

Dr. Zahra Nikmanesh et al. (2012). The study employed an experimental method with the design of two groups of control and experimental. The statistical population for this research comprised of 493 female students in Canossa primary school, and Queen Mary Primary school in Mumbai, with dysgraphic disorder. Sampling was conducted purposively. The pre test showed that 87 students had severe dysgraphic disorder that the sample selected from this group. A sample comprised of 40 subjects that randomly, 20 subjects were assigned into experimental and 20 subjects in control groups. The duration of intervention period was 3 months. A study was conducted in Statistical analysis was conducted using the t- test for two independent samples. It shows that the mean score of changes for the experimental group, $M = -3.73$, $Sd = 4.1$, is significantly more than the mean score of changes for the control group, $M = -0.05$, $Sd = 4.9$, $t(38) = 2.87$, $p = .007$. That is, change in the level of dysgraphic disorder for the experimental group that participated in the Purposive Drawing program like paper mazes, Tracing the pictures and connecting the dotted lines etc.... become significantly lower than the dysgraphic disorder in the control group.

Jenifer.R (2011)Quasi-experimental, control group pre-test post-test design was adopted and the study was conducted among school children with dysgraphia between the age group of 8 and 11 years in St.Antony's primary school and K.J Mcilroy primary school in Kanyakumari. Among those school children with dysgraphia 60 children were selected purposively. 30 were selected as study group and 30 were selected as control group. Instructional activities was given for the study group. Duration of instructional activities for one month. In study group mean score were 11.26 in pre test and 12.9 in post test respectively. The paired 't' values were 9.11 and 2.62* which is significant at $p < 0.05$. The unpaired 't' value was 2.78* which

is significant at $p < 0.05$. Hence the instructional activities was effective in reducing the dysgraphia among school children.

Williams. (2009). conducted a study on writing disabilities and academic performance in Auxilium high school in Tiswadi, Goa. Assessment conducted at the age from 5-9 years, and various writing strategies given for the writing disability group like stretch out hands or squeeze the ball, learn to touch type, cursive script, Recite word spelling out loud, use outlines and multiple drafts. And there is significant improvement in the group those who received intervention. The analysis of pre-test, in study group, among 30 children with dysgraphia 25(83.33%) had mild to moderate disability, 5(16.67%) had minimal disability and during post test, in study group, among 30 children with dysgraphia 16(53.33%) had mild to moderate disability, 9(30%) had minimal disability and 5(16.67%) had normal.

Mrs.Mary Varghes (2013) The study involved one group pre-test and post-test research design selected for the present study was pre-experimental with simple random sampling technique was used to draw the sample in Green valley in Mogappair, Chennai. 50 Primary school children who fulfilled the inclusion and exclusion criteria. Instructional activities given for 6 weeks. Activities are making shapes or cutting shapes, making tower, pouring liquids into small container, arranging seeds, mix rice with pulses then ask them to pick the pulses etc...it helps to improve the fine motor coordination. The results were described by using descriptive and inferential statistical analysis. The pre test mean score was 17.68 and SD 2.024 and the post test, mean score was 34.54 and SD 1.864. paired 't' test value was 41.39* It was significant at $p < 0.05$ level. This indicated that study was effective in improvement in the handwriting after giving the fine motor exercise.

Deuel, R. (2009).Conducted a pre test post test two tailed study to examine the effects of various writing strategies on dysgraphia. Purposive sampling techniques was adopted. Sample size 30. Thirty participants were recruited from spring field, Missouri and Halos University who have completed the pre test measurements. All volunteers were given identical assignments of handwriting related skills for 20 minutes for one month. Hand writing related activities such as sand writing, trace the letters, Dig into clay, practice pinching helps to improve pencil grip, start cross body traning etc.. Compliance was assumed by the completion and submission of handwriting related skills. The outcome result was measured by Narrative writing scale . the paired 't' test score was 5.17 which was statistically significant at $p < 0.05$. The study suggested that, through the handwriting related activities have effectiveness in dysgraphia.

Schwellnus, H. (2012).conducted the experimental study on effect of pencil grasp on the speed and legibility of handwriting after a 10 minute copy in grade 3 and 4 children intended to induce muscle fatigue, in typically developing children. The study was conducted in Sree Krishna Vilasom High School, Nanniyode, Trivandrum. A total of 120, grade 3 and 4 children's taken as sample and self-report questionnaire was given. 30 samples were selected purposively. The pre test score was (17.10) and Standard deviation (5.24). Then pencil grip exercise was given to them for 20 minutes, for one month period and assess by using the hand writing assessment scale. Then the post test score was (25.14) and Standard deviation(3.36) , mean difference were 8.04 respectively the 't' value was 10.2 which was significant at $p < 0.05$ level. there is improvement in the handwriting after giving the exercise.

Manfra C. (2011). conducted the experimental study for children with dysgraphia in Jawahar Navodaya Vidyalaya Ganderbal, Jammu & Kashmir by purposive sampling techniques. 60 samples were selected for this study. Instructional activities provided into two techniques such as drill activities, and fine motor activities, to find it help improve the handwriting of a student with dysgraphia for eight week period combination of both improved the subjects handwriting and increased the score by 50 %. Analyzing this by Anova method found improvement in their fine motor activities and handwriting.

Archanakhanna.,et.al (2012) conducted the experimental study to assess the effectiveness of instructional modules on dysgraphia in Vardharaj Vidyalaya Primary School in Lalbahadur Nagar, Coimbatore. 60 primary school children were selected randomly. Instructional activities are followed by the childrens with supervision. The activities are finger tap speeding, paper mazes, squeeze the stress ball, arranging the grains, dig with clay. . were given for 45 minutes for 8 weeks. The study results shows that the 't' test score was 14.59. So it was significant at ($p < 0.05$) level.

Chang, S. (2014).conducted the comparative study to compare the effect of computer assisted practice with writing strategies on the remediation of hand writing problems in children with dysgraphia Allahabad, Uttar Pradesh. In a randomized controlled trial experiments were conducted for 50 elementary school children (2 groups) in Allahabad, Uttar Pradesh. Handwriting test was done before and after computer assisted practices. Intervention given for 6 weeks. Repeated measures ANOVA used for statistical measures. The result indicates that writing strategies group showed more significant improvement than the other group. This study provided evidence for applying writing activities for children with dysgraphia.

Reepa Sanghavi (2001) compared the performance of normal and learning disabled children (LD) on Beery and Buktenica's Developmental Test of Visual-Motor Integration (DVMI). Experimental group and control group, each consisting of 16 Learning Disabilities children were assessed individually. Experimental group was given instructional activities in the department and supplementary therapy by parents, guided by therapist, regularly for 12 weeks. Intervention included ergonomic factors, gross and fine motor activities. The 't' test score was 6.72 it was significant at 0.05 level. There was an improvement in experimental group was more as compared to control group

CHAPTER - III

RESEARCH METHODOLOGY

Research methodology involves the systematic procedures by which the researcher starts from the initial identification of the problem to its final conclusion. It involves steps, procedures and strategies for gathering and analyzing data in a research investigation.

(**Polit,2011**).

This chapter deals with the research methodology adapted for the proposed study and the different steps undertaken after gathering and organizing data for investigation. It includes Research approach, Research design, Variables under study, Settings, Population, Sample, Sampling technique, Criteria for sample selection, Data collection tool and technique, Description of the tool, Validity, Reliability, Scoring interpretation, Pilot study, Method of data collection, Plan for data analysis and Ethical consideration.

Research Approach

A research approach tells the researcher what data to collect and how to analyze it. It also suggests possible conclusion to be drawn from the data, in view of the nature of the problem under study and to accomplish the objectives of the study

(**Polit,2011**).

In this study, Quantitative research approach was adopted.

Research design

Research design is the overall plan for obtaining answer to the questions being studied for handling some of the difficulties encountered during research process. (Polit,2011).

In this study, Quasi- experimental, one group pre test & post test design was adopted to determine the effectiveness of instructional activities on dysgraphia among primary school children in selected school.

The diagrammatic representation of this design is as follows,

GROUP	PRE TEST	INTERVENTION	POST TEST
Study Group	O ₁	X	O ₂

O₁- Assessment of Dysgraphia before intervention.

X- Represent administering the intervention Instructional activities on dysgraphia.

O₂- Assessment of Dysgraphia after intervention.

Setting of the study

Setting is the physical location and condition in which data collection takes place in the study. (**Polit,2011**).

In this study, the setting was Swami Vivekananda Primary School, situated in Ramayanpatti, Tirunelveli District, which is 48 kilometres away from Nehru nursing college, Vallioor.

Population:

Population is the entire set of individual or object having some common defining characteristics. (**Polit,2011**).

Target population

A target population is defined as the entire population in which a researcher is interested and to which he or she would like to generalize the study result.

(**Polit,2011**)

In this present study, target population comprised of Primary School children with Dysgraphia.

Accessible population

An accessible population is defined as the population of people available for a particular study often a non-random subset of the target population. (**Polit,2011**)

In this present study, study group accessible population comprised of children with dysgraphia who are between the age group of 8-10 years in Swami Vivekananda Primary School.

Sample

Sample refers to a fraction or portion of the element in a universe drawn out deliberately in a planned representative manner for studying interested characteristics of a large group of population. **(Polit,2011).**

In this study, the sample consists of Primary School children 8-10 years with Dysgraphia from Swami Vivekananda Primary School, Tirunelveli district who fulfilled the inclusion criteria.

Sample Size:

Sample Size was the total number of sample participating in a study.

(Polit,2011)

In this study, the sample comprised of 30 primary school children, who are between the age group of 8-10 years, who are studying in Swami Vivekananda Primary School, Tirunelveli, for the study group.

Sample Technique:

It refers to the process of selecting a portion of the population to represent the entire population. **(Polit,2011).**

In this study, Stratified random sampling technique with lottery method was used to select the samples in study group.

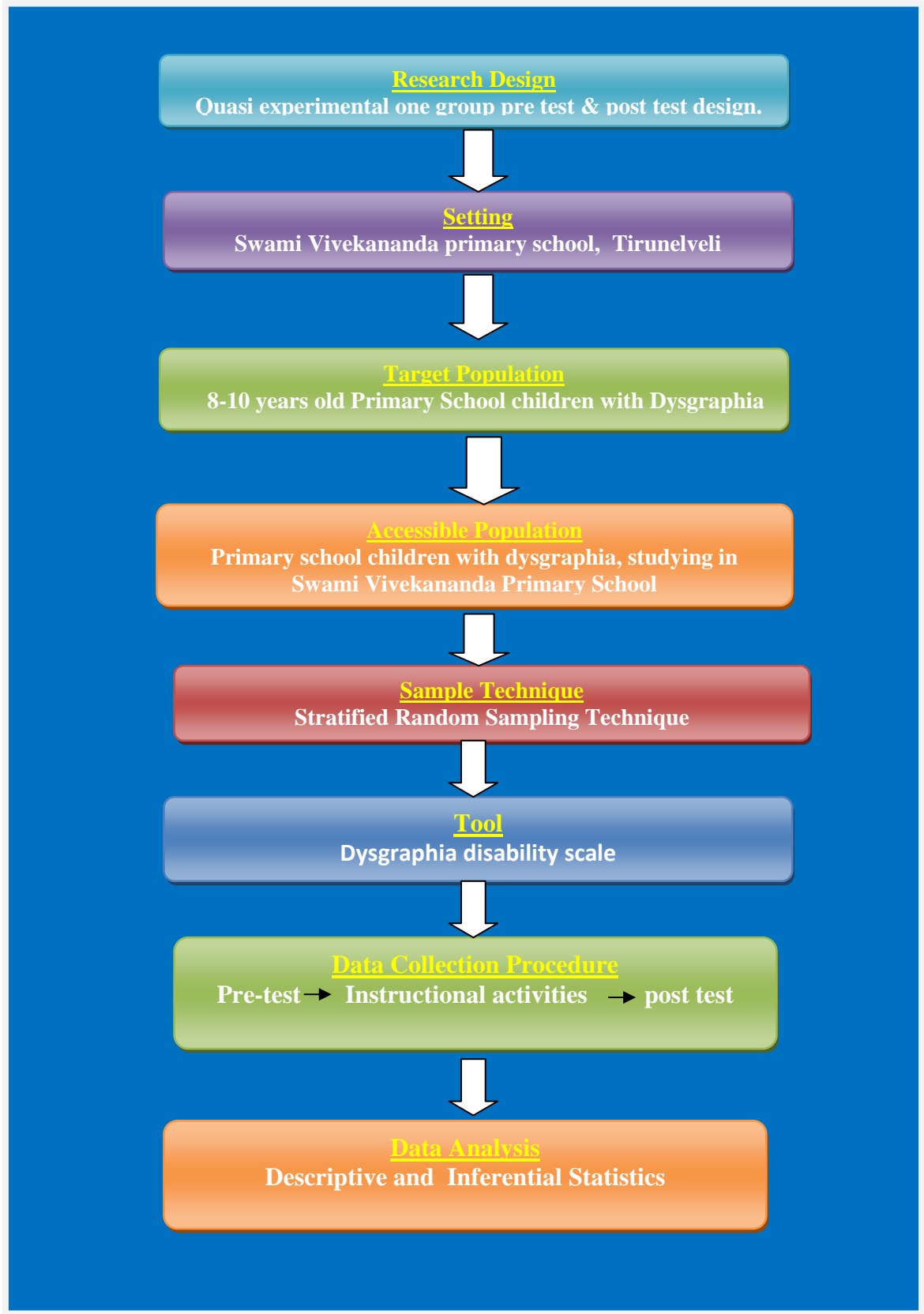


FIG-3.1 Schematic Representation on Research Methodology

Variables

A variable is defined as “An attribute that varies, that is, taken on different values” (Polit,2011).

In this study,

- Independent Variables : Instructional activities
- Dependent Variables : Level of Dysgraphia

Criteria for Sample Selection:

Sampling criteria involves selecting cases that meet some predetermined criterion of importance. The criteria for sample selection are mainly depicted under two heading, which includes the inclusive criteria and exclusive criteria.

Inclusion Criteria

- Primary School children who have Dysgraphia.
- Primary School children between age group 8-10 years.
- Primary school children with minimal, mild and moderate level of writing disability.
- Children available during study period.

Exclusion Criteria

- Primary School children who were not interested to participate.
- Primary school children with severe and total level of writing disability.
- Primary School children who were not available during data collection.

Development of the tool

Tool development is a complex and time consuming process. It consists of defining the construct to be measured, formulating the items, assessing the items for content validity developing instructions for respondents, pre-testing, estimating the reliability and conducting pilot-study. (**Polit,2011**).

Description of the tools

The tool used in this study consists of two parts.

Part I: Demographic variables

Information on demographic variables was collected from participants using a structured questionnaire and selected demographic variables like age, sex, religion, father's education, mother's education, primary care giver, mother's occupation, father's occupation residence, family income per month.

Part II: Dysgraphia disability scale:

This tool was taken from, A research done by Faculty of Medicine, Mansoura University.

Dysgraphia disability scale consists of 20 items

The items are:

- Fine motor functions which includes Grip, pour a glass of water into other, putting a coin in a safe box, buttoning.
- Sensory motor functions which includes pain, light, touch, pressure, stereognosis, graphesthesia.

- Perceptual motor function includes tying a ribbon, contouring around a figure, cutting a circle, imitation of hand posture.
- Hand writing includes respecting lines, spacing between words, letter directions, spelling a sentence, punctuation, drawing, finger tapping speed.

Scoring interpretations:

O - 20 Total Disability

21 – 36 Severe Disability

37-52 Mild to Moderate Disability

53 – 68 Minimal Disability

69 – 80 Normal

Validity

Validity is a degree to which an instrument measures what is intended to measure. **(Polit,2011).**

The content validity of the tool was determined by submitting the tool performa to 5 experts. (2 psychiatrist, 3 experts from mental health nursing). After receiving the tool from the experts, minor modifications were done as per the suggestion of the experts.

Reliability

Reliability is the degree of consistency of dependability with which an instrument measures the attribute it is designed to measure.(**Polit,2011).**

The reliability of a Dysgraphia disability scale for Primary school children in Swami Vivekananda primary school was checked by using Inter rater method. The Karl Pearson co-efficient formula was used to assess the reliability. In this study the reliability of the tool was $r=0.96$. Hence the tool was highly reliable.

Pilot study

Pilot study is a small scale version or trial seen designed to test the method to be used in a large, more vigorous study which is sometimes referred to as the parent study. (Polit,2011).

In order to test the feasibility, relevance and practicability of the study, a pilot study was conducted among primary school children to assess effectiveness of instructional activities on Dysgraphia. The data collection period was one week. Before starting the study the researcher obtained oral and written permission from the Headmistress of Salvation Army Primary School in Vallioor. The pilot study was conducted among 6 students, who were selected by stratified random sampling method. The data collected were amenable to statistical analysis and thus study was found to be feasible.

Method of data collection

- ❖ **Step 1:** After obtaining formal approval from the Principal of Nehru Nursing College, Vallioor, and the Headmistress of the Swami Vivekananda Primary School the investigator proceeded with the data collection.
- ❖ **Step 2:** The investigator selected samples from Swami Vivekananda Primary School, Tirunelveli.

- ❖ **Step 3:** Screening was done to identify the prevalence of Dysgraphia, It consist of 225 children between the age group of 8-10 years. The prevalence of Dysgraphia was identified in 15 children from 3rd std, 13 children from 4th std and 12 children from 5th std with the help of Dysgraphia disability scale. Totally 40 children had dysgraphia. The investigator divided the group into 3 by using stratified random sampling technique. Among them out of 15 children from 3rd std – 10 children were selected for sample then out of 13 children from 4th std – 10 children were selected and out of 12 children from 5th std – 10 children were selected as study samples by lottery method. Totally the investigator selected 30 samples for study.
- ❖ **Step 4:** Pre test was assessed for selected 30 samples
- ❖ **Step 5:** For the study, the investigator given Instructional activities by using materials like clay, soft ball, keyboard, pencil, dotted line pictures, sand, grains, drumstick leaves. The group was divided into 3 sub groups for one month and each day each group was given one set of instructional activities ,the duration of the procedure was 1 hour.
- ❖ **Step 6:** Post test was conducted at the end of the fourth week of intervention.

INSTRUCTIONAL ACTIVITIES OF DYSGRAPHIA

1st day

- Rub hands in circle on the carpet
- Squeezing the ball
- Using key board
- Sand writing

2nd day

- Connecting dots or dashes
- Writing paragraph within the limited lines
- Tracing pictures
- Copying letter from pictures

3rd day

- Play with clay
- Cutting the shapes
- Picking drumstick leaves
- Picking the grains

Plan for data analysis

Collected data was analyzed by using both descriptive and inferential statistics such as frequency, percentage, mean, standard deviation, mean difference , chi square, paired `t` test.

Descriptive statistics

- Frequency and percentage distribution were used to analysis the demographic variables and to assess the level of dysgraphia.
- Mean & standard deviation were used to assess the effectiveness of instructional activities on Dysgraphia among primary school children.

Inferential statistics

- Paired 't' test was used to compare pre test and post test level of dysgraphia among study group.
- Chi-square test was used to find the association between the pre test level of dysgraphia in study group.

ETHICAL CONSIDERATION

The proposed study was conducted after the approval of the dissertation committee of Nehru Nursing College, Vallioor. Permission was obtained from the Headmistress of Swami Vivekananda Primary School, Ramayanpatti at Tirunelveli District. Assurance was given to the study subjects regarding the confidentiality of the data collected.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

Research data must be processed and analyzed in an orderly fashion so that patterns and relationship can be discerned and validated, and hypotheses can be tested. Qualitative data analyzed through statistical analysis includes simple procedures as well as complex and sophisticated methods.

This chapter deals with the data analysis and interpretation of the data collected from the school children with dysgraphia. The interpretation of tabulated data can bring to light the real meaning of findings of the study. In this study the data was analyzed based on the objectives and hypotheses of the study using descriptive and inferential statistics

PRESENTATION OF DATA

This chapter is divided into four sections,

Section – A: Distribution of demographic variables of the primary school children

Section – B: Assessment on level of dysgraphia among primary school children.

Section – C: Comparison of the pre test and post test level of dysgraphia among primary school children.

Section – D: Association between the pre test level of dysgraphia among primary school children in study group with their selected demographic variables.

SECTION - A

DISTRIBUTION OF DEMOGRAPHIC VARIABLES OF THE PRIMARY SCHOOL CHILDREN

Table 4.1: Frequency and percentage distribution of demographic variables among primary school children.

n=30

S. No	DEMOGRAPHIC VARIABLES	Study group	
		f	%
1	Age		
	a) 8 years	10	33.33
	b) 9 years	9	30
	c) 10 years	11	36.66
2	Sex		
	a) Male	19	63.33
	b) Female	11	36.66
3	Religion		
	a) Hindu	22	73.33
	b) Christian	5	16.66
	c) Muslim	3	10
	d) Others	0	0

4	Fathers education		
	a) Illiterate	10	33.33
	b) Primary school	3	10
	c) High school	6	20
	d) Higher secondary	5	16.66
	e) Under graduate	6	20
	f) Post graduate	0	0
5	Mothers education		
	a) Illiterate	9	30
	b) Primary school	9	30
	c) High school	8	26.66
	d) Higher secondary	4	13.33
	e) Under graduate	0	0
	f) Post graduate	0	0
6	Primary care giver		
	a) Mother	27	90
	b) Father	0	0
	c) Grandparents	3	10
	d) Guardian	0	0

7	Fathers occupation		
	a) Professional	3	10
	b) Non – professional	16	53.33
	c) Wage earner	11	36.66
8	Mothers occupation		
	a) House wife	18	60
	b) Professional	0	0
	c) Non- professional	0	0
	d) Wage earner	12	40
9	Residence		
	a) Rural	30	100
	b) Urban	0	0
10	Family income per month		
	a) <Rs 5000	0	0
	b) Rs 5001 – Rs 10,000	0	0
	c) Rs 10,001- Rs 15,000	16	53.33
	d) > Rs 15001	14	46.66

Table 4. 1: Reveals with, regard to the age, majority 11 (36.66%) of them were in the age group 11 years in study group.

With respect to sex in study group 19 (63.33%) of them were male and 11 (36.66%) of them were female.

Regarding religion, majority 22 (73.33%) were Hindus in study group.

Regarding fathers education, majority 10 (33.33%) were illiterate in study group.

Regarding mothers education, majority 9 (30%) were illiterate and primary school in study group.

Regarding primary care giver, majority 27(90%) were mother in study group.

Regarding fathers occupation, majority 16(53.33%) were non-professional in study group.

Regarding mothers occupation, majority 18(60%) were house wife in study group.

Regarding residence , majority 30(100%) were rural in study group.

Regarding family income per month , majority 16 (53.33%) belonged to 10,001-15,000 in study group.

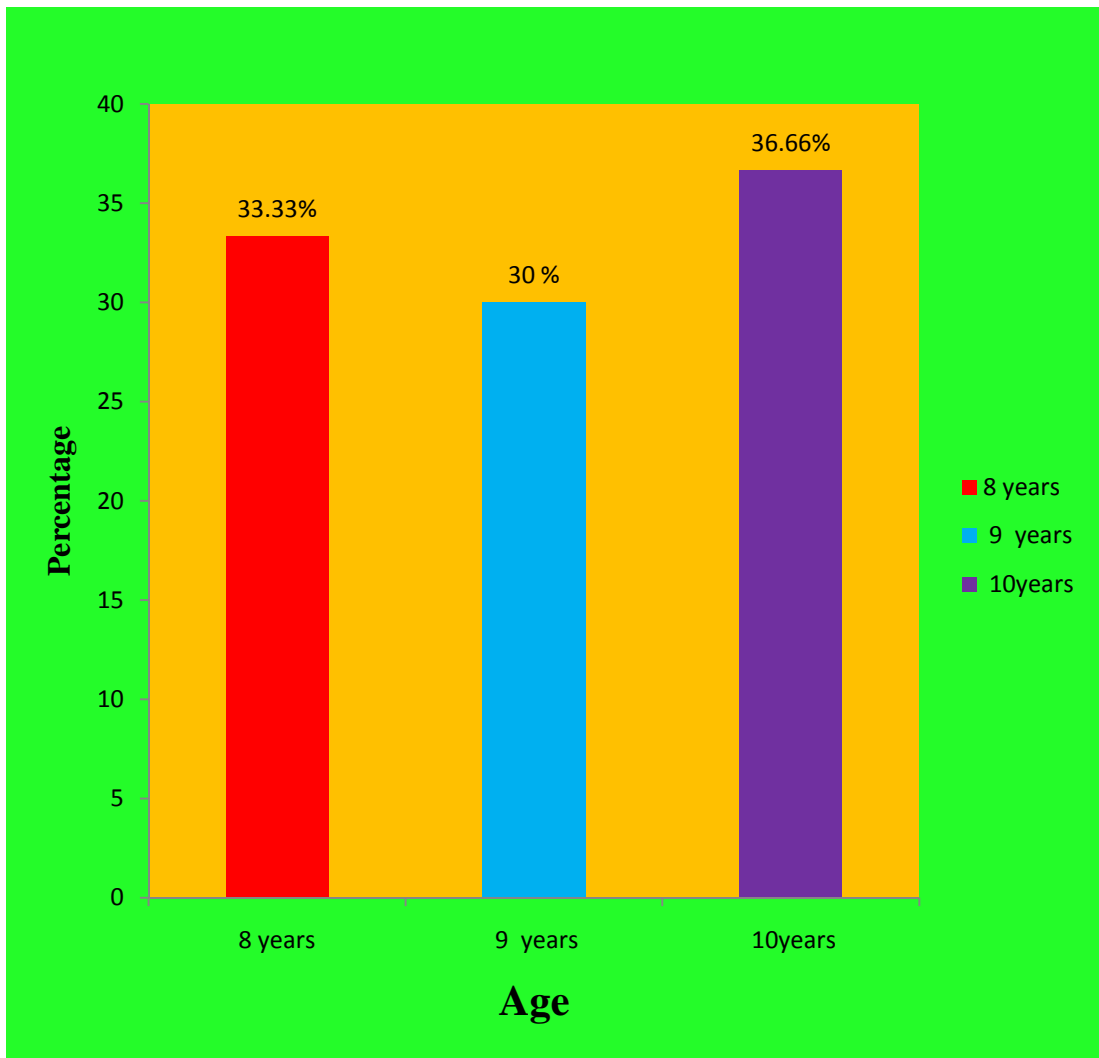


Fig: 4.1 Percentage distribution of primary school children according to Age

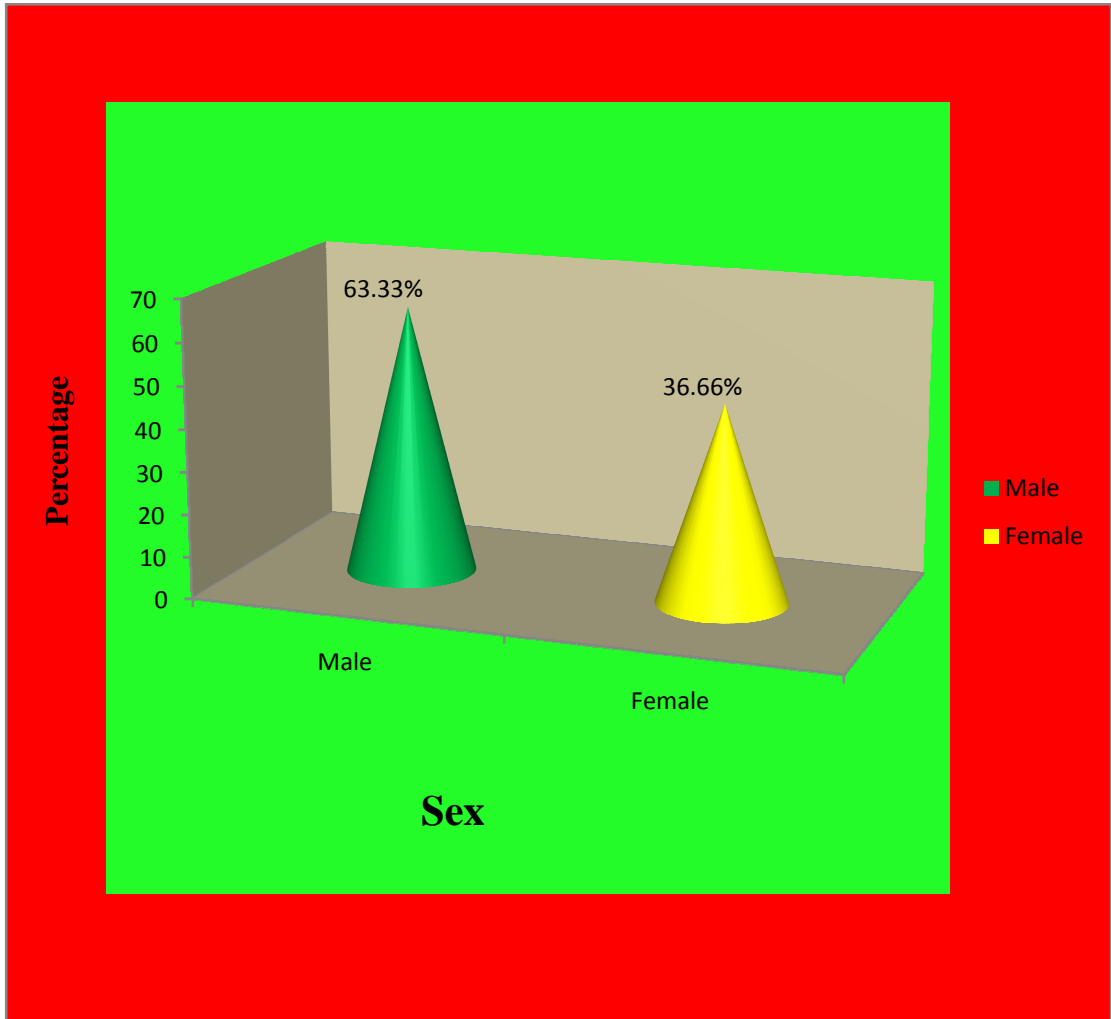


FIG:4.2: Percentage distribution of primary school children according to Sex

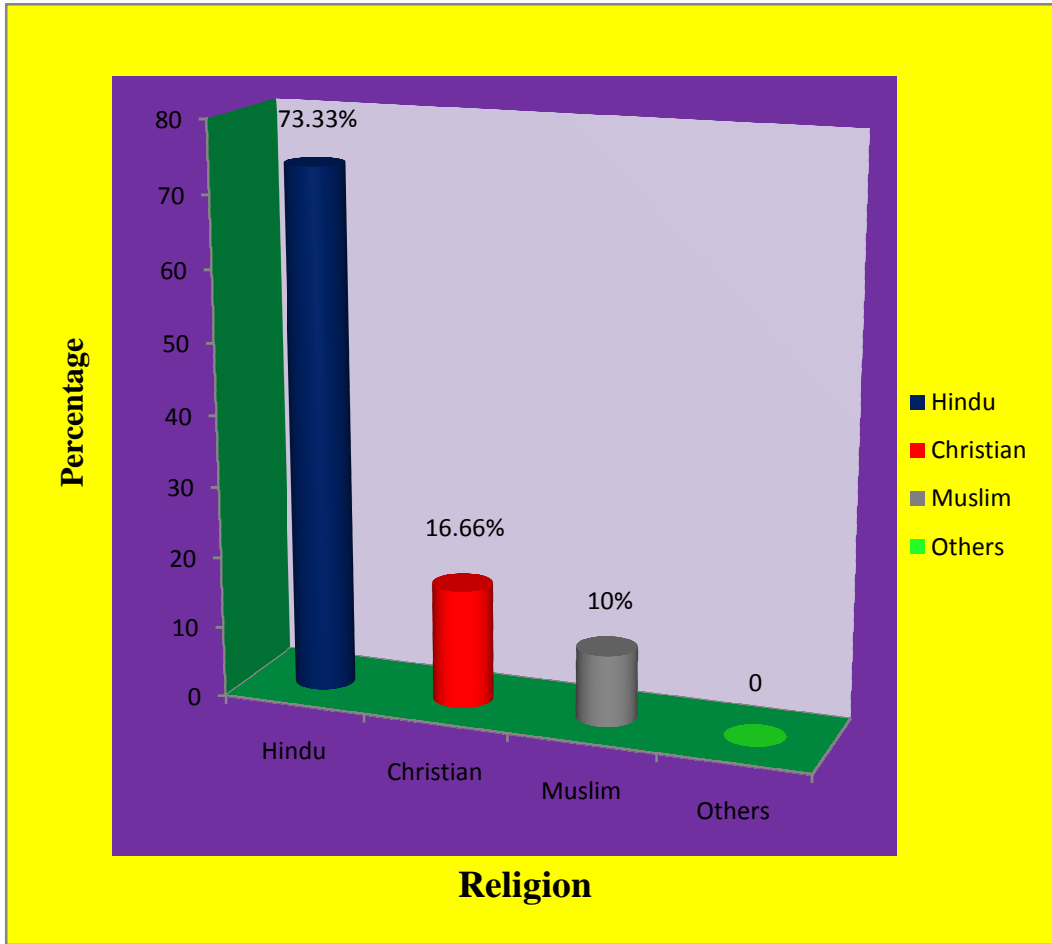


FIG:4.3: Percentage distribution of primary school children according to Religion

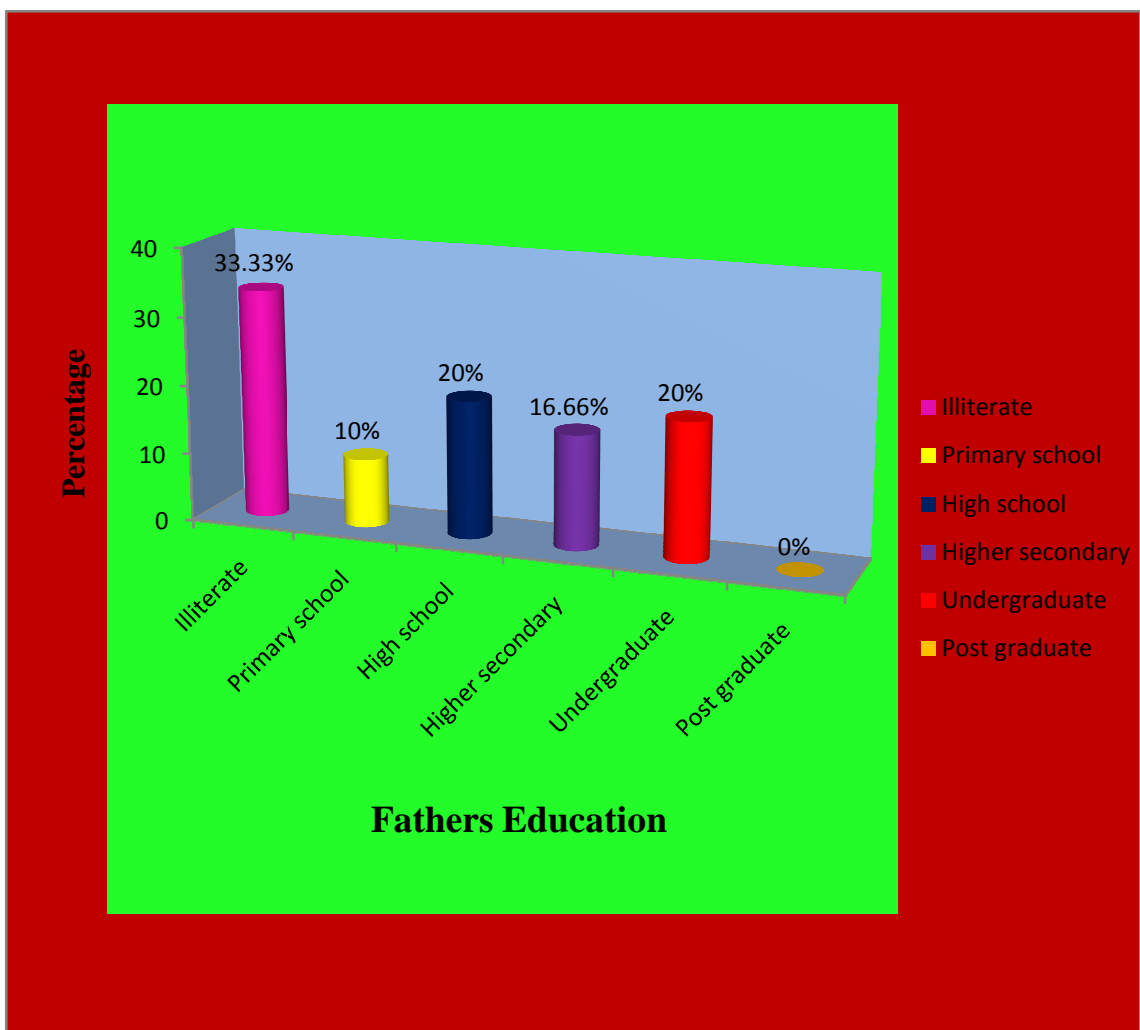


FIG:4.4: Percentage distribution of primary school children according to Father's education

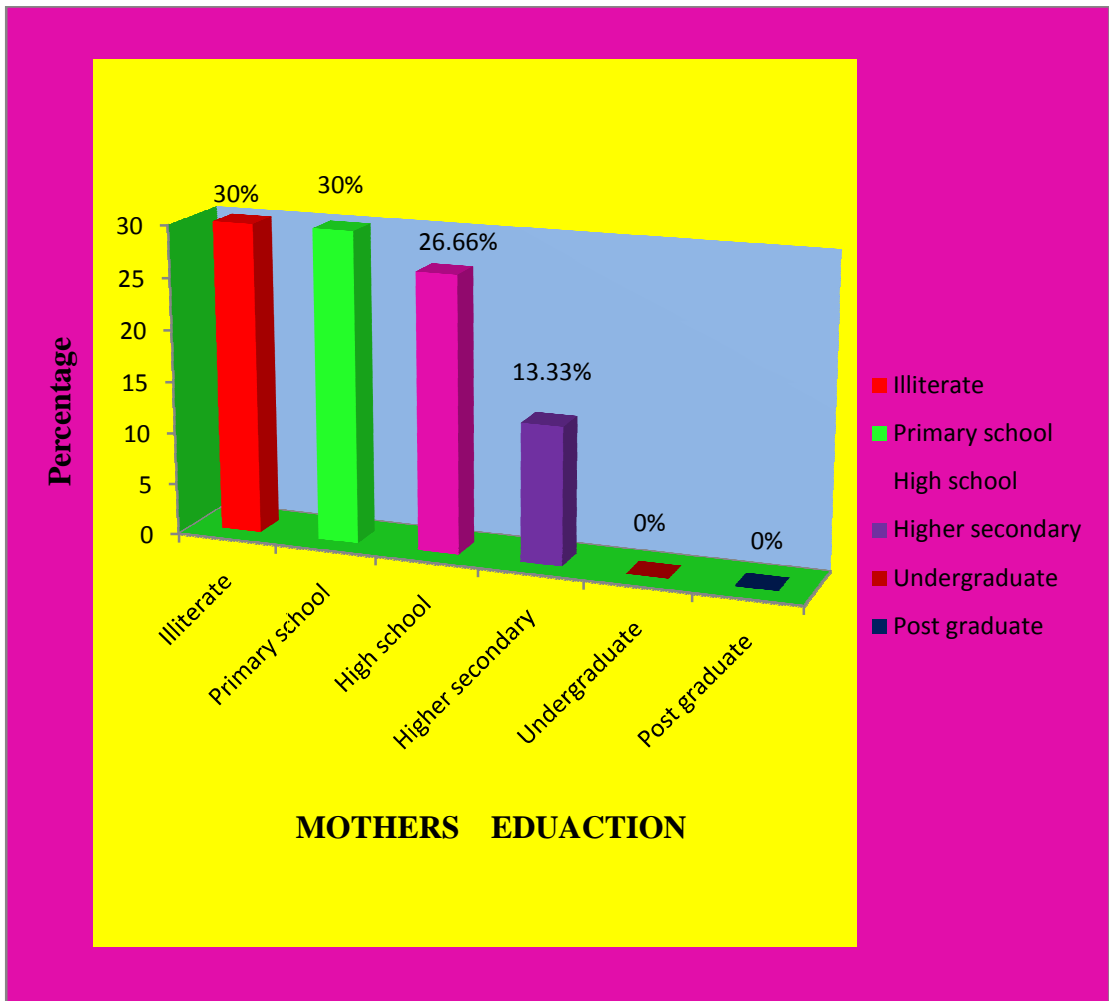


FIG:4.5: Percentage distribution of primary school children according to Mother's education

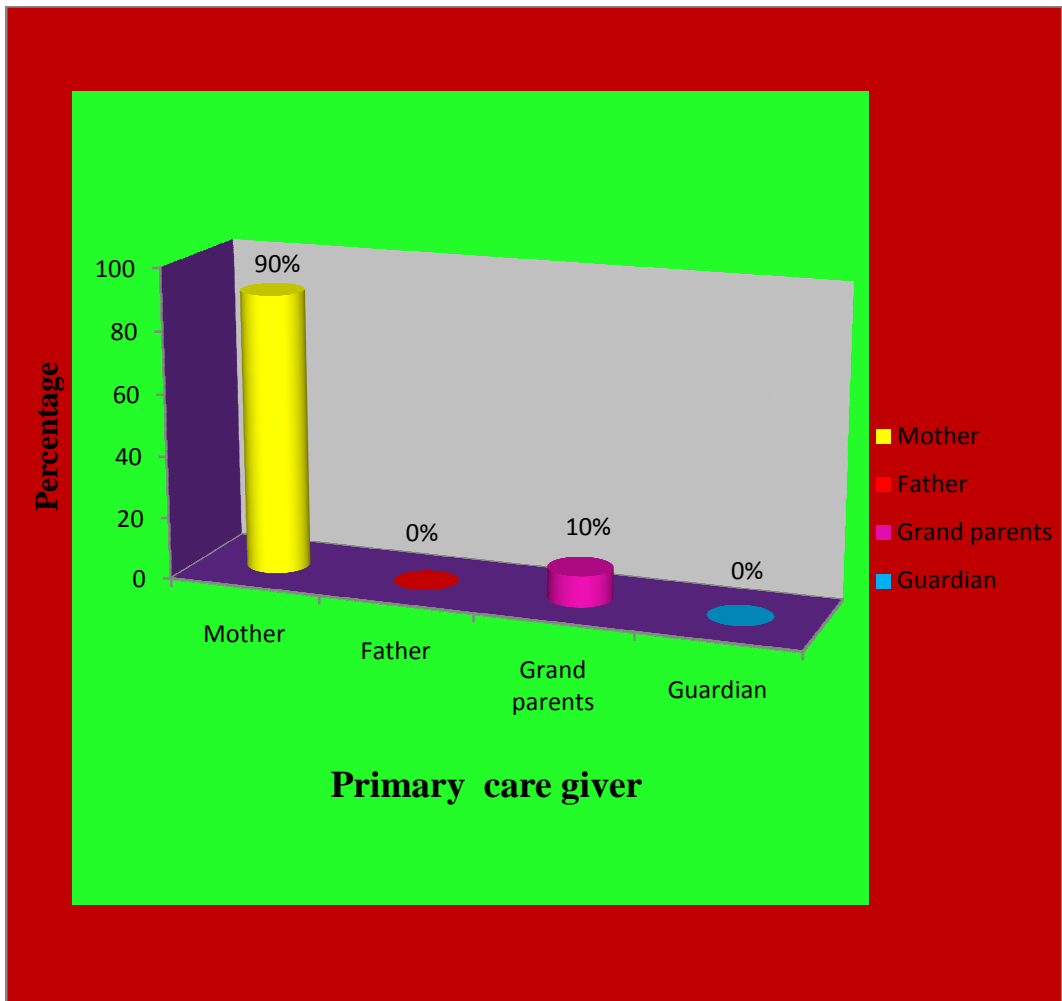


FIG:4.6: Percentage distribution of primary school children according to Primary care giver

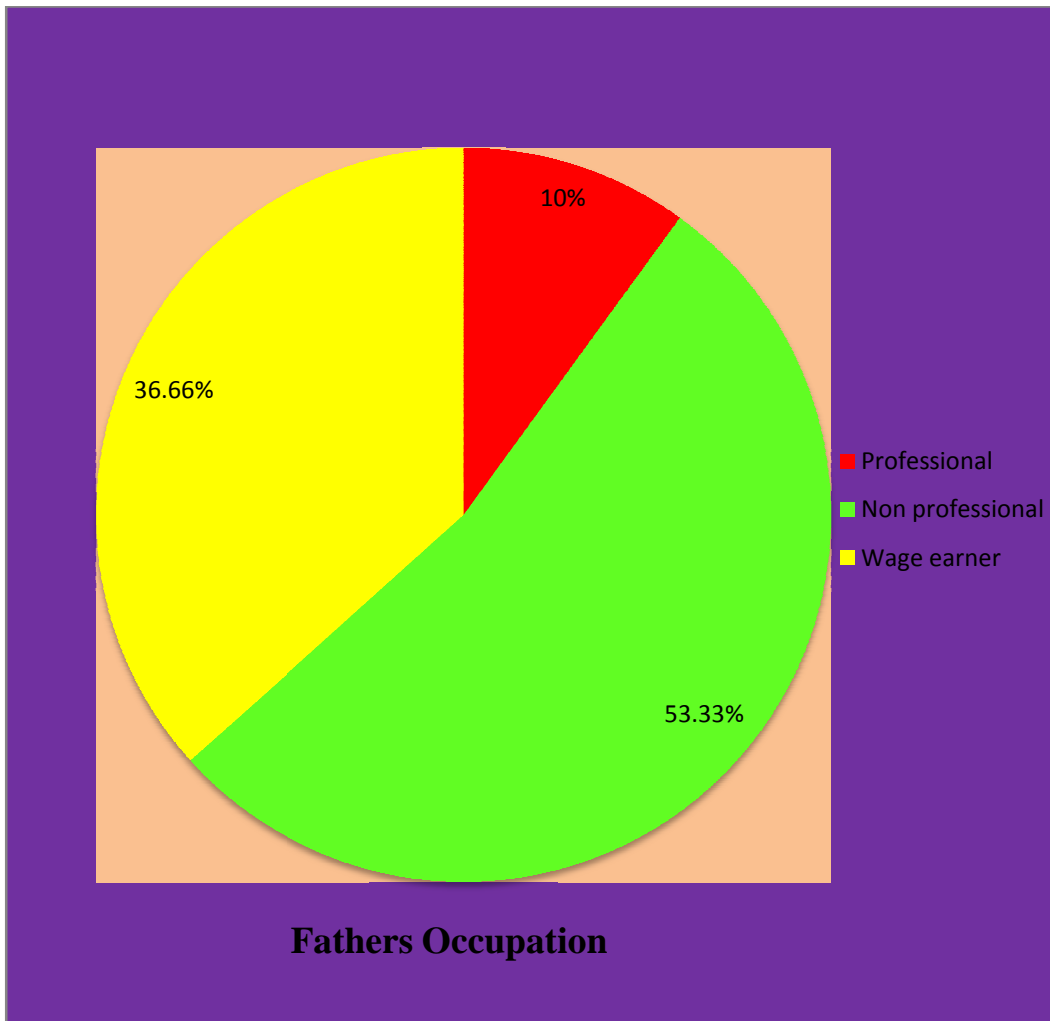


FIG:4.7: Percentage distribution of primary school children according to Father's occupation

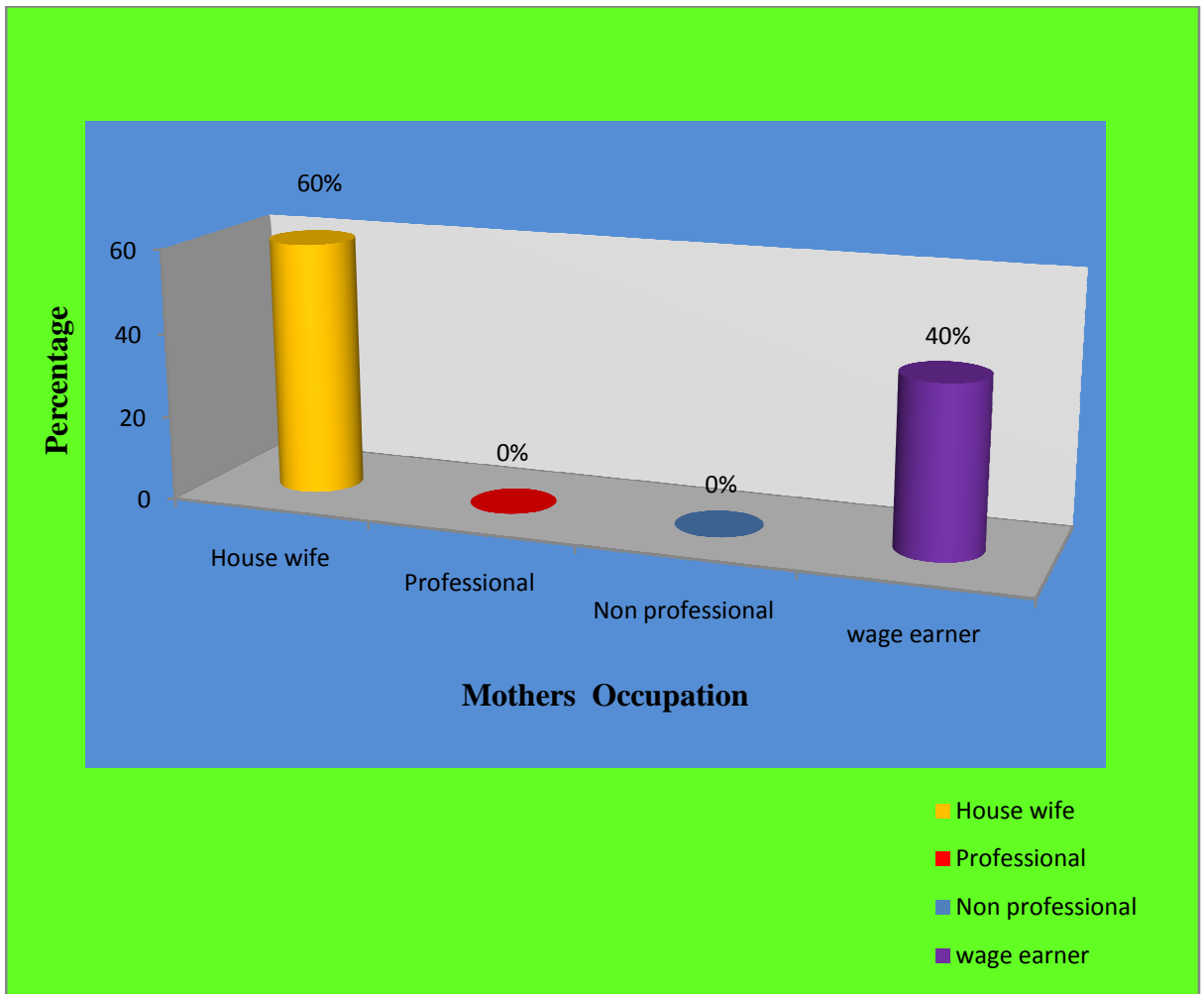


FIG:4.8: Percentage distribution of primary school children according to Mother's occupation

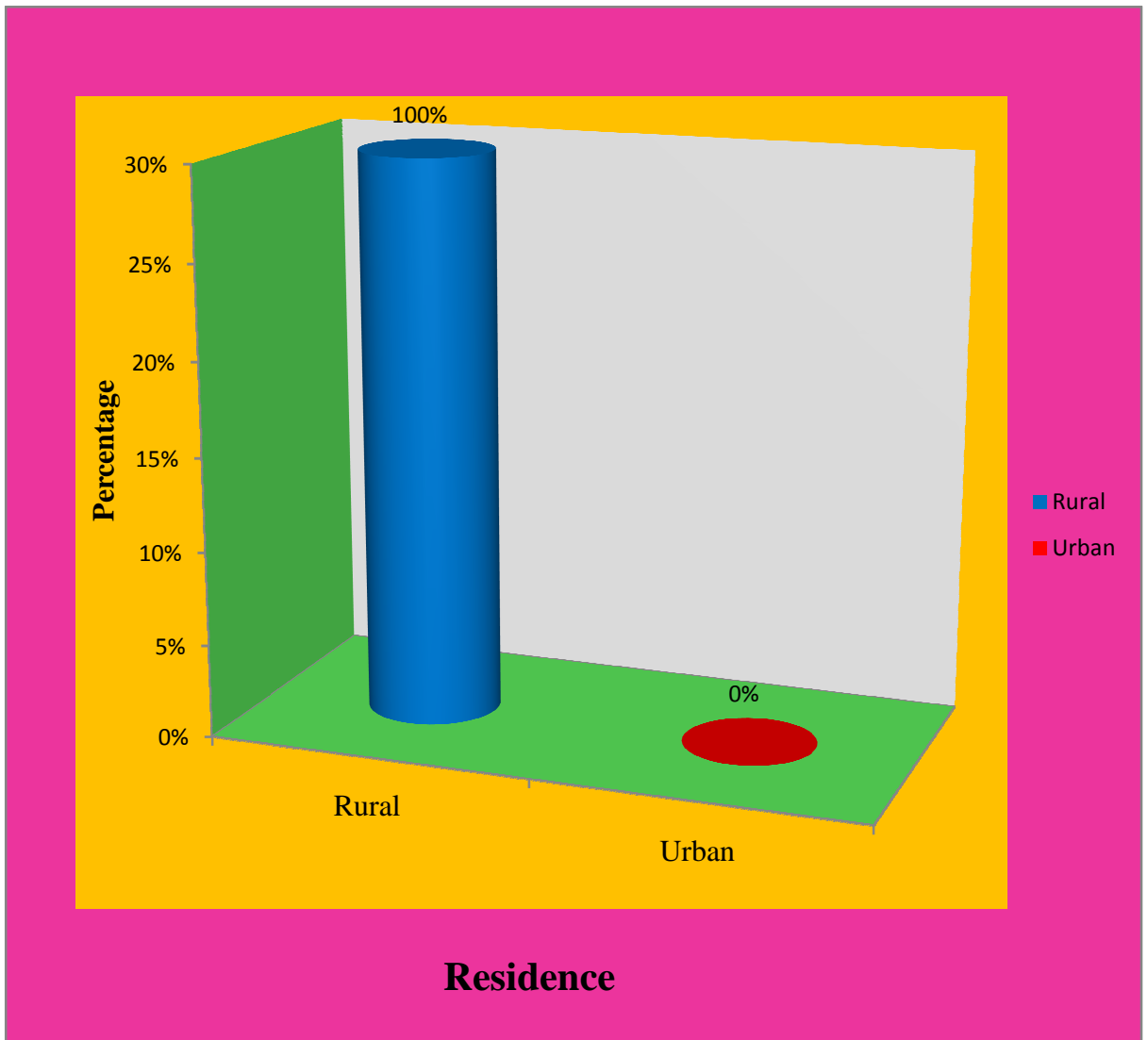


FIG:4.9: Percentage distribution of primary school children according to Residence

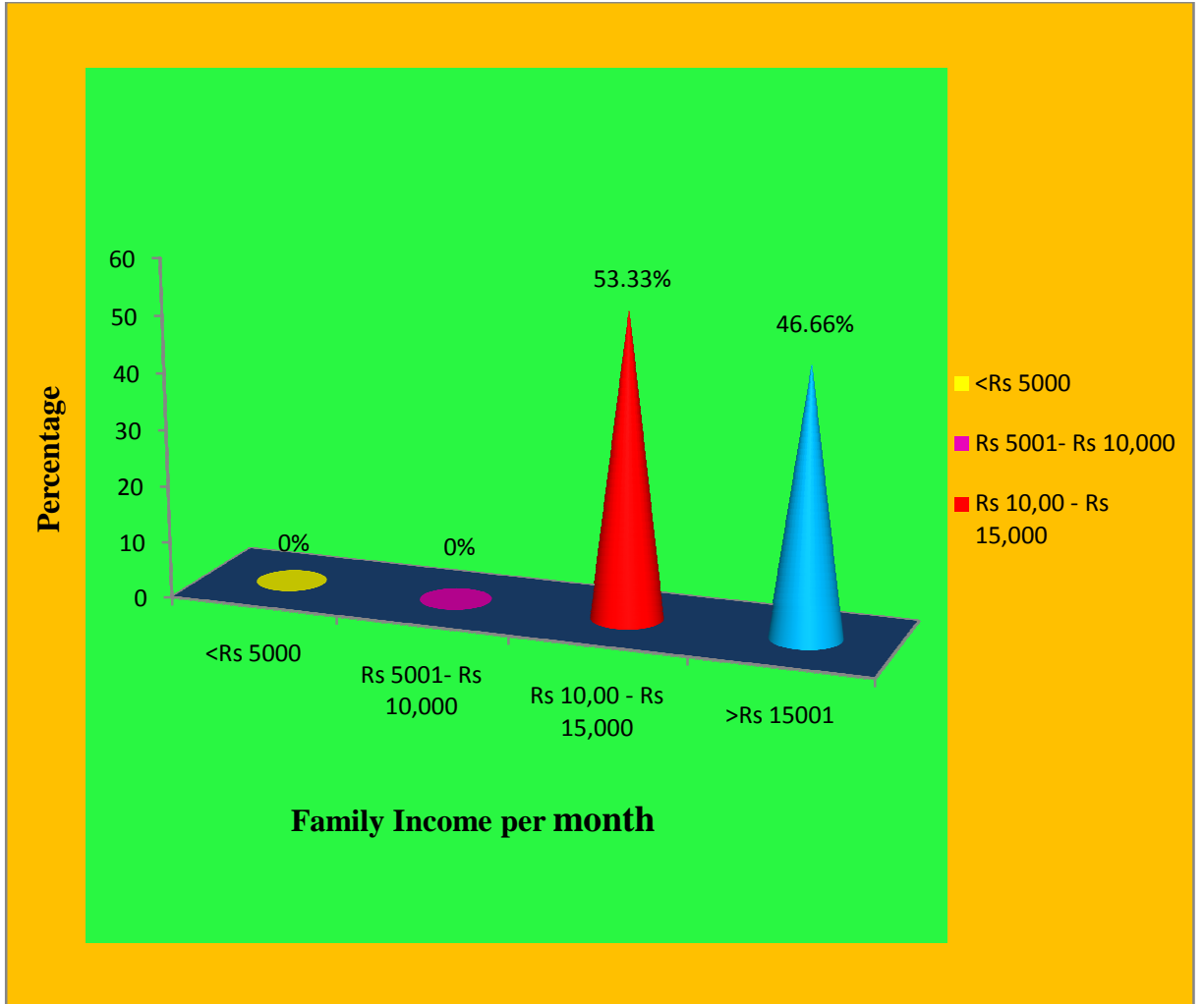


FIG:4.10: Percentage distribution of primary school children according to Family income per month

SECTION – B

ASSESSMENT ON LEVEL OF DYSGRAPHIA AMONG PRIMARY SCHOOL CHILDREN.

Table-4.2 : Frequency and percentage distribution of primary school children according to the level of dysgraphia in pre test and post test score.

n=30

variables	Dysgraphia level	Study Group			
		Pre test		Post test	
		f	%	f	%
Dysgraphia	Mild to Moderate	26	86.67	4	13.33
	Minimal Disability	4	13.33	24	80
	Normal	0	0	2	6.66

Table 4.2: During pretest in study group 26(86.67%) were mild to moderate level of dysgraphia, 4(13.33%) had minimal disability of dysgraphia.

During post test in study group 4(13.33%) were mild to moderate level of dysgraphia, 24(80%) had minimal disability of dysgraphia, 2(6.66%) had normal level of dysgraphia.

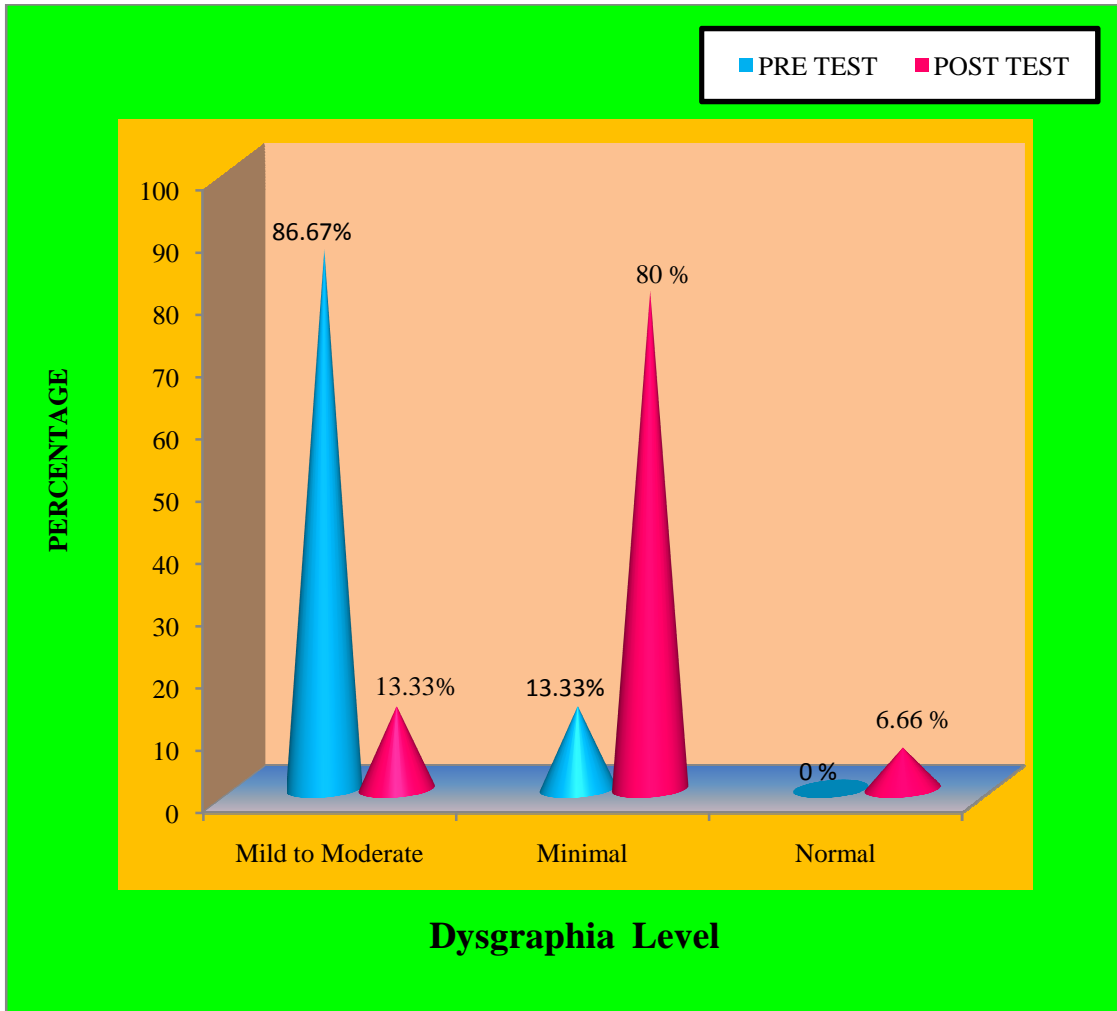


Figure 4.11: Percentage distribution of primary school children according to their level of dysgraphia

SECTION – C

I.COMPARISON OF THE PRETEST AND POST TEST LEVEL OF DYSGRAPHIA AMONG PRIMARY SCHOOL CHILDREN.

Table 4.3: Mean, standard deviation and paired 't' value on pretest and post test level of dysgraphia among primary school children.

n =30

S. No	Variables	Group	Mean	Standard deviation	Mean difference	Paired 't' test	Table value
1	Dysgraphia	Pre-test	48.53	3.57	9.07	14.59*	2.05
		Post-test	57.6	4.96			

***significant at $p < 0.05$ level**

Table –4. 3 represents the mean score on the level of dysgraphia among primary school children in study group, mean value was (48.53) in pre test and (57.6) in post test respectively. standard deviation value was (3.57) in pre test and (4.96) in post test respectively. The mean difference score was 9.07. The calculated paired t- test score was 14.59* in study group. It was significant at < 0.05 level. Hence Hypothesis one was accepted.

SECTION – D

ASSOCIATION BETWEEN THE PRE TEST LEVEL OF DYSGRAPHIA AMONG PRIMARY SCHOOL CHILDREN IN STUDY GROUP WITH THEIR SELECTED DEMOGRAPHIC VARIABLES.

Table 4.4: Data on association between pre test level of dysgraphia among primary school children in study group with their selected demographic variables.

n=30

S. No	Variables	Dysgraphia level		X ²	Table value
		Mild-Moderate	Minimal		
1	Age				
	a) 8 years	10	0	2.29 #	2df 5.99
	b) 9 years	8	2		
	c) 10 years	8	2		
2	Sex				
	a) Male	15	4	2.68	1df
	b) Female	11	0	#	3.84
3	Religion				
	a) Hindu	20	2	1.55 #	2df 5.99
	b) Christian	4	1		
	c) Muslim	2	1		
	d) Others	0	0		

4	Fathers education				
	a) Illiterate	8	2		
	b) Primary school	2	1	3.64	5df
	c) High school	5	1	#	11.07
	d) Higher secondary	5	0		
	e) Under graduate	6	0		
	f) Post graduate	0	0		
5	Mothers education				
	a) Illiterate	7	2		
	b) Primary school	9	0	2.46	3df
	c) High school	7	1	#	7.82
	d) Higher secondary	3	1		
	e) Under graduate	0	0		
	f) Post graduate	0	0		
6	Primary care giver				
	a) Mother	25	2		
	b) Father	0	0	8.19	2df
	c) Grandparents	1	2	*	5.99
	d) Guardian	0	0		
7	Fathers occupation				
	a) Professional	3	0		
	b) Non – professional	14	2	0.71	2df
	c) Wage earner	9	2	#	5.99
8	Mothers occupation				
	a) House wife	17	1		
	b) Professional	0	0	2.33	3df
	c) Non-professional	0	0	#	7.82
	d) Wage earner	9	3		

9	Residence				
	a) Rural	26	4	0	1df
	b) Urban	0	0	#	3.84
10	Family income per month				
	a) <Rs 5000	0	0		
	b) Rs 5001 – Rs 10,000	0	0	18.2	3df
	c) Rs 10,001- Rs 15,000	13	3	*	7.82
	d) > Rs 15,001	13	1		

*Significant at $p < 0.05$ level

Non Significant at $p < 0.05$ level

Table 4.4: It shows that there is no significant association between the age, sex, religion, fathers education, mothers education, fathers occupation, mothers occupation, residence and there is a significant association between the primary care giver and family income per month.

CHAPTER-V

DISCUSSION

This chapter deals with discussion of the data analyzed based on the objectives of the study. The problem stated is “A study to assess the effectiveness of instructional activities on Dysgraphia among Primary school children in selected schools at Tirunelveli District”.

OBJECTIVES OF THE STUDY

- To assess the pre test and post test level of dysgraphia among primary school children.
- To evaluate the effectiveness of instructional activities on dysgraphia among primary school children.
- To find out the association between the pre test level of dysgraphia among primary school children with their selected demographic variables.

DEMOGRAPHIC VARIABLES OF THE PRIMARY SCHOOL CHILDREN WITH DYSGRAPHIA:

The study findings of the demographic variables reveals with regard to the age, majority 11(36.66%) of them were in the age group of 10 and 10(33.33%) of them were 9 years of age, and 9(30%) of them were 9 years respectively. With respect to sex 19(63.33%) of them were male and 11(36.66%) of them were female. Regarding religion, majority 22(73.33%) were Hindus, 5(16.66%) of them were Christian and 3(10%) of them were Muslim. Regarding fathers education majority 10(33.33%) of them were illiterate, 6(20%) of them completed high school and

6(20%) of them were undergraduate, 5(16.66%) of them have completed higher secondary and 3(10%) of them were primary school. According to the Mother's education 9(30%) of them were illiterate and primary school and 8(26.66%) of them have completed high school and 4(13.33%) of them have completed higher secondary. About the primary care giver majority 27(90%) of them were mother and 3(10%) of them were grandparents. According to the father's occupation majority 16(53.33%) of them were non-professional and 11(36.66%) of them were wage earner and 3(10%) of them were professional. With regard to the mother's occupation, majority 18(60%) of them were house wife and 12(40%) of them were wage earner. According to their residence 30(100%) of them belongs to rural. According to the family income, majority 16(53.33%) of them earned Rs. 10,001-15000 and 14(46.66%) of them earned Rs >15001.

The first objective of the study was to assess the pre test and post test level of dysgraphia among primary school children

The analysis of pre-test, in study group, among 30 primary school children with dysgraphia 26(86.67%) had mild to moderate disability, 4(13.33%) had minimal disability and no one had normal. During post test, 4(13.33%) had mild to moderate disability, 24(80%) had minimal disability and 2(6.66%) had normal level of dysgraphia.

The findings are supported study conducted by **Williams. (2009)**, conducted a study on writing disabilities and academic performance. Assessment was conducted at the age from 5-9 years, and various writing strategies given for the writing disability group, and there is significant improvement in the group those who received intervention. The analysis of pre-test, in study group, among 30 children with

dysgraphia 25(83.33%) had mild to moderate disability, 5(16.67%) had minimal disability and during post test, in study group, among 30 children with dysgraphia 16(53.33%) had mild to moderate disability, 9(30%) had minimal disability and 5(16.67%) had normal.

The second objective of the study was to evaluate the effectiveness of instructional activities on dysgraphia among primary school children.

In study group pre test mean score level of dysgraphia among primary school children were 48.53 with standard deviation 3.57 and mean score level of dysgraphia among primary school children were 57.6 with standard deviation 4.96 in post test respectively. The paired 't' values were 14.59* which is significant at $p < 0.05$. It shows that instructional activities was effective in reducing the level of dysgraphia.

The findings are supported study conducted by **Ms.Joy Priscilla (2013)** Quasi experimental one group pre-test and post-test research design was adopted. A study to assess the effectiveness of instructional activities on dysgraphia and its identification among school children in Al- Ameen primary and high school, Bangalore. A total of 40 school children were recruited as samples. Duration of Instructional activities for 8 weeks. Findings of the study revealed that the overall mean pre-test score obtained by the subjects was 19.38 (41.22%) with the standard deviation of 3.93. The overall mean post test score was 39.53(84.10%) with standard deviation 2.86 . The total difference in the mean of overall pre-test and post-test knowledge score was 19.38 & 39.53 respectively with the obtained 't' value of 25.779 was found to be highly significant at the level of $p < 0.001$. It means there is significant difference between pre-test and post-test dysgraphia of school children regarding dysgraphia.

The third objective of the study was to find out the association between the pre test level of dysgraphia among primary school children with their selected demographic variables.

The result reveals that there is a significant association between the level of dysgraphia among primary school children with their selected demographic variables such as primary care giver (8.19) and family income per month (18.2) at the level of 0.05% level of significance.

The findings are supported study conducted by **Raynolds. (2010)**. conducted a study on handwriting exercises for motor skill activities on children with writing difficulties. The samples were taken from the school children with the age group of 8-12 years and some other variables like sex, class, father and mother education, family income and the medium of education of school and there is significant association among the school children with the selected demographic variables.

SUMMARY

This chapter dealt with the objectives of the study, majority findings of the demographic variables of primary school children with dysgraphia assess the pre and post level of dysgraphia, effectiveness of instructional activities and association between pre test level of dysgraphia among primary school children with the selected demographic variables.

CHAPTER-VI

SUMMARY, CONCLUSION, LIMITATION, IMPLICATION

RECOMMENDATIONS

This chapter deals with the summary of the study and conclusions drawn from the study, implications of the study for different areas like Nursing practice, Nursing education, Nursing administration and Nursing research and it also includes the recommendations for further research in the field.

SUMMARY

This study was undertaken to assess the effectiveness of instructional activities on dysgraphia among primary school children. Quantitative research approach with Quasi- experimental, one group pre test & post test design was adopted to determine the effectiveness of instructional activities on dysgraphia. The study was conducted in Swami Vivekananda Primary School in Ramayanpatti, situated in Tirunelveli district. Samples were selected by using Stratified random sampling technique with lottery method. 30 samples were selected. The instructional activities was given to the samples, 1 hour for one month. After one month the post test was conducted by using the Dysgraphia disability scale. The conceptual frame work based on Imogene King's goal attainment theory. The data was collected and analyzed using descriptive and inferential statistics. To test the hypothesis paired 't' test and chi square were used. The level of significance was assessed by $p < 0.05$ to test the hypothesis.

OBJECTIVES OF THE STUDY

- ❖ To assess the pre test and post test level of dysgraphia among primary school children.
- ❖ To evaluate the effectiveness of instructional activities on dysgraphia among primary school children.
- ❖ To find out the association between the pre test level of dysgraphia among primary school children with their selected demographic variables.

FINDINGS OF THE STUDY

The major findings of the study was summarised;

- During pre-test, among 30 primary school children with dysgraphia 26(86.67%) had mild to moderate disability and 4(13.33%) had minimal disability of dysgraphia.
- During post test, among 30 primary school children with dysgraphia 4(13.33%) had mild to moderate disability, 24(80%) had minimal disability of dysgraphia and 2(6.66%) were normal level of dysgraphia.
- In pre test mean score level of dysgraphia among primary school children were 48.53 with standard deviation 3.57 and mean score level of dysgraphia among primary school children were 57.6 with standard deviation 4.96 in post test respectively. The paired 't' values were 14.59* which is significant at $p < 0.05$. It shows that instructional activities was effective in reducing the level of dysgraphia.

- There was a significant association between the level of dysgraphia among primary school children with their selected demographic variables such as primary care giver (8.19) and family income per month (18.2) at the level of 0.05% level of significance. Hence the research hypothesis (H₂) is accepted.

CONCLUSION

The study was done to determine the effectiveness of instructional activities on dysgraphia among primary school children in selected school, Tirunelveli district. In pre test mean score level of dysgraphia among primary school children were 48.53 with standard deviation 3.57 and mean score level of dysgraphia among primary school children were 57.6 with standard deviation 4.96 in post test respectively. The paired 't' values were 14.59* which is significant at $p < 0.05$ level . From the results of the study, it is concluded that instructional activities are effective in reducing the level of dysgraphia. Those skills are easy to follow and cost effective. School children can do self instructional activities. Therefore, the investigator felt that more importance should be given to instructional activities to reduce dysgraphia.

IMPLICATIONS

The researcher has derived the following implications from the study results, which are of vital concern to the field of nursing service, nursing administration, nursing education and nursing research.

Implications for nursing service

- The findings of the result suggest that nursing personnel should develop in depth knowledge about dysgraphia among school children.
- This study recommends that nurses should be knowledgeable regarding instructional activities.
- These findings suggest that mental health nurses should identify the learning difficulties and promote the school children in improving their learning skills.
- The study emphasis that nurses and nursing students should encourage the practice of instructional activities in schools as well as in community setup.
- These findings suggest that School health nurse should identify the dysgraphia among school children and taught some instructional activities to the parents.

Implications for nursing education

- The study enhances the nurse educators should be equipped with knowledge regarding instructional activities.
- The study will be enable the nursing students should receive adequate practice in instructional activities through the curriculum and the benefits of instructional activities in reducing the writing disability.
- Conduct workshops and conferences for students regarding the use of various techniques of instructional activities in day today nursing practice.

- Extensive use of mass media propaganda will help children and parents to gain knowledge regarding the benefits of instructional activities.

Implications for nursing administration

- This study suggest that nurse administrators should conduct inservice education for the nursing staff regarding the benefits of instructional activities.
- These findings will help the administrator; the nurse should assist in implementing instructional activities through various means of psycho educational programmes.
- The findings of the study emphasize the nurse administrators to conduct various mass awareness programmes focusing on instructional activities.

Implications for nursing research

- Nursing research is to be done to find out the various instructional activities such as Rub hands in circle on the carpet,Squeezing the ball,Using key board,Sand writing, Play with clay, Cutting the shapes, Picking the grains etc.... to reduce dysgraphia.
- The findings of the study would help to expand the scientific body of professional knowledge upon which their research can be conducted.
- Large scale study should be conducted on the effectiveness of instructional activities on dysgraphia and disseminate the findings through conferences, seminars and publishing in nursing journals.

Limitations

Since there were very few studies done on the effectiveness on instructional activities on dysgraphia among school children, the investigator had a lot of difficulty in collecting the study materials for the review.

Recommendations

The following studies can be undertaken to strengthen instructional activities as a good remedy for the writing difficulty among school children.

- ❖ A study can be conducted for the school children with other conditions like dyslexia and other learning problems.
- ❖ A study can be conducted for school children to reduce dyscalculia.
- ❖ A study can be conducted among school children with low academic performance due to learning difficulties.
- ❖ A study can be done on school teacher's and mothers by using a structured teaching programme in schools and community settings.
- ❖ A study can be conducted for different age group
- ❖ A study can be conducted on special children based on their IQ
- ❖ A study can be conducted for long term

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APPENDIX - I

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY



NEHRU NURSING COLLEGE

G.O.(MS) NO. 486 HEALTH DATED ON 27.8.98

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY PROC. NO.:18677/AFFLN.II(1)/99 Dated on 28.9.2000
APPROVED BY TAMIL NADU NURSES AND MIDWIVES COUNCIL AND INDIAN NURSING COUNCIL

NEHRU NAGAR, POST BOX NO. 3,
TIRUCHENDUR ROAD, VALLIOOR - 627 117.
TIRUNELVELI DIST, TAMILNADU.

Email : nehrunursingcollege@gmail.com
Tel : 04637 - 221460, 222126
Teli Fax : 04637 - 221460

Your Ref :

02/02/2018
Date :

Our Ref : NNC/PER/05

LETTER SEEKING PERMISSION TO CONDUCT THE RESEARCH STUDY IN SWAMI VIVEKANANDA PRIMARY SCHOOL, TIRUNELVELI.

From
M. Suja
Msc Nursing II year
Nehru Nursing College
Vallioor.

To
The Headmaster
Swami Vivekananda Primary School
Tirunelveli.

Through
The Principal
Nehru Nursing College
Vallioor.

Respected Sir,

Sub: Requisition for conducting the research study.

As a part of our Msc Nursing II year requirement under the Tamil Nadu DR. M.G.R Medical University, I need to conduct a research project. I have selected the research topic as "A study to assess the effectiveness of instructional activities on dysgraphia among primary school children in selected schools at Tirunelveli district,"

Hence I kindly request you to grant me permission to conduct this study during February 2018 in Swami Vivekananda Primary school, Tirunelveli. I assure that I will abide by the rules of the institution and information collected from the study participants will be maintained confidentially.


Thanking You

Date: 2/2/2018

Place: Vallioor



NEHRU NURSING COLLEGE


Principal

Yours faithfully,

M. Suja


APPENDIX - II

LETTER GRANTING PERMISSION TO CONDUCT THE STUDY

**SWAMI VIVEKANANDA NURSERY &
PRIMARY SCHOOL
RAMAYANPATTI.**

Date 26.02.2018.

This is to Certify that Mrs. Suja.M is a M.Sc (Nursing) Student of Nehru Nursing College, Vallioor, Tirunelveli has conducted a study on "A study to assess the effectiveness of Instructional activities on Dysgraphia among Primary school children in Swami Vivekananda Primary School, Ramayanpatti, Tirunelveli District for one month (February)


HEADMISTRESS
SWAMI VIVEKANANDA
Nursery & Primary School,
RAMAYANPATTI

APPENDIX - III

LETTER REQUESTING OPINION AND SUGGESTION OF EXPERTS FOR CONTENT VALIDITY OF THE TOOL

From,

M.Suja
M.Sc (N) II Year
Nehru Nursing College
Vallioor.

To,

Subject:

Requesting expert's opinion on validity of the tool to assess the effectiveness of instructional activities on Dysgraphia among primary school children in selected schools at Tirunelveli District.

Respected Sir/Madam,

A tool has been developed to assess the effectiveness of instructional activities on Dysgraphia among primary school children in selected schools at Tirunelveli District. This has been developed as a part of my research work. Kindly evaluate my tool and give your opinion, and valuable suggestion to enable the investigator to modify the tool. I will be thankful and grateful for your kind consideration.

Thanking you,

Station:

Yours sincerely,

Date:

M. Suja

Enclosure :

- Content
- Tool
- Evaluation criteria

APPENDIX -IV

EVALUATION CRITERIA CHECK LIST FOR TOOL VALIDATION

Instructions:

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a column for remarks. Kindly place tick mark in the appropriate column and give remarks.

Interpretation of column:

Column I : Meets the criteria.

Column II : Partially meets the criteria.

Column III :Does not meet the criteria.

S.NO	CRITERIA	1	2	3	REMARKS
1	Content <ul style="list-style-type: none">• Adequacy• Relevance• Organized				
2	Language <ul style="list-style-type: none">• Simplicity• Clarity• Relevant				
3	Scoring <ul style="list-style-type: none">• Easy To Score• Clarity				
4	Practicability <ul style="list-style-type: none">• Procedure• Utility• Feasibility				

Signature:

Name :

Designation :

Address:

Signature of the expert

APPENDIX V

LIST OF EXPERTS VALIDATED THE TOOL

1. Dr. C. Paneer Selvan, M.B.B.S, M.D (Psych) NIMHANS
Consultant Psychiatrist,
Sneka Mind Care Centre,
Tirunelveli.
2. Dr. Karthik Duraisamy, M.B.B.S, M.D,(Psych) NIMHANS
Child Psychiatrist,
Sneka Mind Care Centre,
Tirunelveli.
3. Mrs. Femila MSc(N)
Associate Professor,
Christian College Of Nursing,
Neyoor.
4. Mrs. Jega Juliet MSc(N)
Assist.Professor,
Christian College Of Nursing,
Neyoor.
5. Mrs. Inigo MSc(N)
Assist. Professor,
Thasaiah College Of Nursing,
Marthandam.

APPENDIX VI

TOOL FOR DATA COLLECTION

SECTION A- DEMOGRAPHIC VARIABLES

1. Age

- a) 8 years
- b) 9 years
- c) 10 years

2. Sex

- a) Male
- b) Female

3. Religion

- a) Hindu
- b) Christian
- c) Muslim
- d) Others

4. Father's education

- a) Illiterate
- b) Primary school
- c) High school
- d) Higher secondary
- e) Graduation
- f) Post graduation

5. Mother's education
 - a) Illiterate
 - b) Primary school
 - c) High school
 - d) Higher secondary
 - e) Graduation
 - f) Post graduation
6. Primary care giver
 - a) Mother
 - b) Father
 - c) Grandparents
 - d) Guardian
7. Mothers Occupation
 - a) Housewife
 - b) Professional
 - c) Non professional
 - d) Wage earner
8. Fathers Occupation
 - a) Professional
 - b) Non professional
 - c) Wage earner
9. Residence
 - a) Rural
 - b) Urban

10. Family income per month

- a) < Rs 5000
- b) Rs 5001 – Rs 10,000
- c) Rs 10,001 – 15,000
- d) > Rs 15,001

SECTION B - DYSGRAPHIA DISABILITY SCALE

S.NO	ITEMS	0	1	2	3	4
1.	FINE MOTOR FUNCTION: <ul style="list-style-type: none"> • Grip • Pour a glass of water into other • Putting a coin in safe box • Buttoning 					
2.	SENSORY MOTOR FUNCTION: <ul style="list-style-type: none"> • Pain • Light touch • Pressure • Stereognosis • Graphesthesia 					
3.	PERCEPTUAL MOTOR FUNCTION: <ul style="list-style-type: none"> • Tying a ribbon • Contouring around a figure • Cutting a circle • Imitation of hand posture 					
4.	HAND WRITING: <ul style="list-style-type: none"> • Respecting lines • Spacing between words • Letter directions • Spelling a sentence • Punctuation 					
5.	DRAWING					
6.	FINGER TAPPING SPEED					

Scoring Instructions:

0 – Unable to do the task even with help

1 – Hardly able with examiners help

2 – Slow with many mistakes

3 – Able with minimal mistakes

4 – Able without mistakes

Scoring :

- **0 – 20** **Total Disability**
- **21 -36** **Severe Disability**
- **37 – 52** **Mild to Moderate Disability**
- **53 – 68** **Minimal Disability**
- **69 -80** **Normal**

APPENDIX - VII

INSTRUCTIONAL ACTIVITIES

INTRODUCTION:

Good morning, I am postgraduate student from Nehru Nursing College, Vallioor, Tirunelveli. Dysgraphia were found more common among the school children. Due to this the children become poor in their academic performance. We can reduce the dysgrphia by giving writing therapy.

1st day

- Rub hands in circle on the carpet
- Squeezing the ball
- Using key board
- Sand writing

2nd day

- Connecting dots or dashes
- Writing paragraph within the limited lines
- Tracing pictures
- Copying letter from pictures

3rd day

- Play with clay
- Cutting the shapes
- Picking drumstick leaves
- Picking the grains

APPENDIX - VIII

PHOTOGRAPHS



