



A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING ILL EFFECTS OF FIRE CRACKER ACCIDENTS AMONG SCHOOL CHILDREN AT MEDAVAKKAM KANCHIPURAM DISTRICT

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ABSTRACT

Need for the study:

Accidents and injury have recently become a major health problem. Fire accidents during firing the cracker is the major public health problem, with prolonged hospitalization in both intensive care unit and general wards. The majority of injuries occur in children who cannot be fully responsible for their actions: hence parents and crackers need education and should direct their attention towards the potential dangers. Children require supervision and education and Diwali fire crackers if possible should be discouraged or at least burned with adult supervision.

Objectives:

- To assess the pre-test and post-test knowledge level regarding ill effects of fire cracker accidents among school children.

- To determine the effectiveness of video assisted teaching programme regarding fire cracker accidents among school children.
- To find out the association between post-test knowledge level with their selected demographic variables.

Key words : Assess, Effectiveness, Video assisted teaching programme, Knowledge, Ill effects of fire cracker Accidents

Methodology:

Research approach: Quantitative research approach

Duration of the study: 4 weeks (18.11.16 – 20.12.16)

Study setting: Government Middle School Medavakkam, Kanchipuram District.

Study design: Pre experimental one group pre-test post-test design.

Study population : School children 6th, 7th, 8th standard

Sample size : 60 School children

Sampling technique: Convenient sampling technique

Data collection procedure : Formal permission was obtained from the administrative authority of the school. The investigator selected 60 samples by convenient sampling technique. A pre-test was conducted by using a structured questionnaire followed by video assisted teaching program. After 7 days post-test was taken..

Data analysis : After the data collection the collected data was organized, tabulated, summarized and analysed, The data was analysed according to objectives of the study by descriptive statistics like mean, median, standard deviation Inferential statistics like student paired test, Mc Nemars test, Chi square test.

Results : The finding of the study revealed that video assisted teaching programme has improved the knowledge of school children regarding ill effects of fire cracker accidents with paired t test, $p < 0.001$. There is statistically significance in knowledge attainment on ill effects of fire cracker accidents shows effectiveness of the video assisted teaching.

Discussion : Hypothesis was proved by statistical significance occur in video assisted teaching. The chi square test shows that there is association between knowledge and demographic variables.

Recommendation:

- Comparative study may be conducted to find out the similarities or differences between the knowledge of urban and rural school children.
- The study can be repeated on the large scale sample to validate and for better generalization of the finding.
- A study can be carried out using other strategies like Computer Assisted Instruction & structured teaching programme.

Conclusion: The result of study shows that video assisted teaching was effective in improving knowledge of school children on ill effects of fire cracker accidents.

Chapter-I
INTRODUCTION

“Give out children a green future. Say no to fireworks”

India is globally recognized for industrial development. Currently occupational environment in the industrialized world is challenging the health and safety of the man. The risk associated with modern occupations necessitate the adaptation of man to the industrial environment on the one hand, and his protection from the risks on the other.

There are variety of industries in India. There are 50,000 fire cracker industries in India, out of which 34,343 fire cracker factories are around Sivakasi, Tamil Nadu. Sivakasi is a big industrial center and it is well known for its products all over India, such as fire crackers and matches. In fact the whole country depends on Sivakasi for its supply of fire crackers and matches. As these industries are well developed Sivakasi was nick named as “Mini Japan In India” by the first Prime Minister of India Pandit. Jawaharlal Nehru.

Majority (30 to 40%) cases of asthma, bronchitis and wheezing are due to burning crackers and rockets. Lot of old and chronic asthma patients are admitted to the hospital during Diwali season irrespective of the family history of asthma or not, and it was difficult season for them to get through (Dr. Niphadkar,1997)⁹¹

The commonest sites for minor injuries following fire cracker accidents are the upper limbs, head and neck. Most frequently clothes catch fire from fire crackers. (Ugeskr Laeger, 1991)⁷⁵

Fire crackers can cause hearing loss, blood pressure, sleeping disturbances, and sudden exposure to loud noise can cause temporary or permanent deafness or even result in heart attack. Nausea and mental impairment are also some of the side effects of fire crackers.

Pets such as dogs and cats also suffer on account of fire crackers as animals have a more sensitive sense of hearing than humans. It is important for each one of us to act as responsible citizens and discourage the use of fire crackers. Diwali is the biggest festival of India and its sanctity should not be blown away in smoke. This festival of good will can be celebrated in a number of ways other than bursting fire crackers.

HAPPY DIWALI WITHOUT CRACKERS 2009; Diwali today means more air, noise, water, land and social pollution due to use of lots of fire crackers. There are more patients for hospitals during and after the festival causing injuries/deaths. Children are the most common victims of fire cracker accidents, with those 15 years old and younger accounting for half of all fire cracker eye injuries.

In 2004, there were 13,837 people died of fire accidents and out of which 237 people died of fire work accidents. In 2005, 14,522 people died of fire accidents and out of which 237 people died by fire work accidents (Indian Statistics, 2005)⁸⁸

For many people bursting crackers is a status symbol, which should change. Let us all make this Diwali a happy and clean one. I strongly feel that Diwali should not be associated with crackers. We should remember people who have sacrificed their life for the country and donate money towards some social cause instead of wasting it on crackers. Pollution in any form be it air pollution or noise pollution harms not only the environment but also the health of people especially children, who suffer from asthma, deafness etc. Bursting crackers make the matter worse for the already suffering public.

1.1 Need for the study

“Be careful with what goes up because it must eventually come down”

Accidents and Injury have recently become a major health problem. Injury related deaths occur in many actively working people and it produce the major social and economic losses, emotional stress, permanent disfigurement and family stress. Fire accidents during

firing the cracker is the major public health problem, with prolonged hospitalization in both intensive care unit and general wards.

The majority of injuries occur in children who cannot be fully responsible for their actions: hence parents and caretakers need education and should direct their attention towards the potential dangers. Children require supervision and education about using fire crackers if possible should be discouraged or at least burnt with adult supervision.

It is estimated that injuries related to fire crackers accounts for around 15.7% of total population. The incident is growing over the years more than 60%. About 75 cases were treated in Narayana Nethralaya of which majority where children, most children under 15 years of age. About 65/132 cases were treated in Minto eye hospital of which the most common victims were boys below 14 years of age. Bottle rockets and sparklers are two of the most common fire crackers associated with injuries.

1.2 Statement of the problem

" A study to assess the effectiveness of video assisted teaching program on knowledge regarding ill effects of fire cracker accidents among school children at Medavakkam ,Kanchipuram District"

1.3 Objectives of the study

- ❖ To assess the pre-test and post-test knowledge level regarding ill effects of fire cracker accidents among school children.
- ❖ To determine the effectiveness of video assisted teaching programme regarding fire cracker accidents among school children
- ❖ To find out the association between pre-test and post-test knowledge level with their selected demographic variables.

1.4 Operational definitions

Assess : Refers to measuring the knowledge of school children regarding ill effects of fire cracker accidents.

Effectiveness : Refers to the post -test result after intervention of video assisted teaching programme on knowledge of school children

Video Assisted Teaching Program : The series of visual information regarding systematic organization of the ill effects of fire cracker accidents which includes, Air pollution, noise pollution, health problem, social problem and affects elderly health, sleep disturbance of people due to improper usage of fire crackers by school children.

Knowledge : The existing and gained information on ill effects of fire cracker accidents.

Ill Effects of Fire Cracker : Accidents or Harmful results due to improper usage of fire cracker which includes Health problems and social problems, environmental problems of the society or community.

1.5 Assumptions:

- ❖ The school children may have inadequate knowledge regarding ill effects of fire cracker accidents.
- ❖ Providing video assisted teaching programme enhance the knowledge of school children regarding ill effects of fire cracker accidents.

1.6 Hypothesis

- H1** There will be significant difference between pre-test and post-test knowledge among school children regarding ill effects of fire cracker accidents.
- H2** There will be a significant association between pre-test and post-test knowledge among school children regarding ill effects of fire cracker accidents with selected demographic variables.

1.7 Delimitation

- ❖ Data collected period was 4 weeks.
- ❖ Small sample size 60 school children.

Chapter-II

REVIEW OF LITERATURE

This chapter deals with the information collected with relevant to the present study through published and unpublished materials. These publications are the foundation to carry out the research work. Highly extensive review of literature pertaining to research topic was done to collect maximum information for laying foundation of the study.

This chapter consists of :

Part – I 2.1 : Review of literature

Part – I 2.1 Review of literature

This part divided in to 3 sections. It deals with review of literature related to

2.1.1 Section – A Causes of fire accidents in the fire Cracker

industry

2.1.2 Section – B Safety measures or the preventive measures of Fire

accident in the firecracker industry.

2.1.3 Section - C Complication of fire accident in the fire cracker

Industry.

2.1.1 Section - A Causes of fire accidents in the fire cracker industry.

Breslin, F.C (2006) conducted a descriptive comparative study to examine the relation between job tenure and work injuries. Data were collected from the workers and the compensation records and labour force survey data was used to confounding multivariate analyse of age, sex, occupation, and job tenure as prediction of rates. The result revealed that in the first month on the job were over 4 times more likely to have job tenure injury, and earlier training programme for the workers in low hazard condition and also reducing job turn over rate.³⁰

Staff reporter THE HINDU (2005) stated that in a fire works manufacturing factory, rockets which was manufactured by using aluminium powder, potassium nitrate, sulphur and charcoal were not properly dried on the drying platform. Rocket had undergone exothermic reaction due to moisture content, and with evolution of heat, got exploded. As a result 10 workers and 3 working sheds completely collapsed⁹⁰

Yan Ke Xue Bao (2002) conducted a retrospective study to analyse one hundred and six cases of school aged children with eye trauma who were treated in hospital in the last 7 years. As result the main causes of trauma were , playing with fire crackers and self made fireworks. Penetrating wound of cornea was often observed. The visual activity of 44.9% was traumatic eyes was observed. Most of them 83.2% were recovered from blindness post operatively.⁸⁵

Mackenzie, D. N (2001) conducted a prospective study between September 1999 to April 2000 in the hand unit at St. George Hospital, Sydney, where treatment for three young men with severe injuries, main cause was by holding a lighted firecracker. They causes illustrate the high light the dangers of these explosive devices.⁵⁵

Chapman.V (2000) conducted a study to analyse the epidemiology of fire related deaths in Alabama. Fatality reports for all fire related deaths in the state of Alabama from 1992 to 1997 were calculated and compared according to demographic variables. Approximately half 48.8% of deaths occurred between the month of November and March, July had the lowest proportion of deaths that is 5%. Most frequently reported cause of fatal fires was misuse of cigerrets.³³

Tearle. P (1998) stated that three elements are needed for a fire to start and flourish, heat, fuel and oxygen. These elements for the three sides of the “Fire Triangle” and the removal or isolation of any one will extinguish a fire. Such action forms basis in use of fire fighting techniques currently in use by fire authorities. Two sides of fire triangle is always present in the workplace. That is fuel –like wood, paper, gasoline. Heat – like a spark,cigarette, match or lighter. Oxygen – there in all around us. Hence these are the most common cause of fire in workplace. These causes are removed fire can’t happen.⁷³

West, J. B. (1997) conducted pilot study to determine the cause of fire and raising the oxygen concentration in the room air of commercial and scientific facilities altitude of 4000 – 5000m. Data from various sources have been analysed to determine the burning rate of material such as paper and cotton clothing at various attitudes. The result revealed that inspite of increase in oxygen concentration in burning rate is much less than at sea level, primarily because the PO₂ is so much lower even with oxygen enrichment.⁸²

Ross Tilly Burn Centre (1991) conducted a descriptive study from 1984 to May 1990, among 193 patients who were admitted to regional adult burn centre for treatment of work related burn injuries. Most of the patients (97.3%) where reffered to the burn centre with in 24 hours of there injury. Common etiology was electrical injury 29.5 % and by flame24.4%. One quarter were cloth fire injury. One quarter were contact injuries. These occupational burns tended to be extensive injuries. Inhalation injury occurred for 14.8% of person in occupational fire injuries.⁹²

2.1.2 Section – B Safety measures or the preventive measures of fire accident in the fire cracker industry.

Hark . J (2007) conducted a study to identify the risk factors for burn injuries and provide starting point for the establishment of an effective prevention plan. Analyzed the demographic etiology and clinical data of 5000 burn patients admitted to 5 major hospital in the burn units in Israel during a 7 year period (1997 – 2003). Data were obtained from the records. The result revealed that male gender was twice as frequent as female gender, with long hospitalization stay in both intensive care units and general wards. In Israel about 5% of all hospitalized injuries were burn related injuries and around 15% among were work related burn injuries.⁴⁵

Edlich, R. F (2004) stated that related roof fires remain life threatening danger in the united states. The National Roofing Contractors Association (NRCA) have set up guidelines for selecting a new roof and proper application, ventilation and insulation of roofing systems are to prevent heat and fire accidents. The NRCA recommended that other fire safety precautions showed also be considered mandatory which would include smoke alarms escape plans and fire sprinklers in order to prevent fire accident in the industry.³⁹

Albrecht, R C (1999) conducted “fishing for burn prevention programme.” It was an interactive educational burn and fire safety programme designed to stimulate people involvement at health fairs, and it provided an alternative to handing out safety information. The programme attracts the people. The design consists of small pool, a small fishing rod, several cut out fish, and hook and loop fasteners, words that will stimulate interaction between people and participants are written on the fish these include, “smoke detectors”, “cool the burn”, “fire escape plan” etc. It provided interactive hands on activity at health faires an increase burn and fire safety awareness for the people.²²

Abdulwadud. O (1998) conducted a retrospective study among subjects who of reported of attended victorian Hospital emergency departments and those admitted for fire work related injuries. The study revealed that 71% of cases were male and most common site of injury were head injury and because injury which occurred even after legislative restriction. Hence the study emphasized that the education and supervision are needed to prevent injuries from fire works.²¹

Briske, L. A (1998) conducted a retrospective study to evaluate three smoke detector promotion programmes. Participants were randomly selected at eight area Minnesota Cherokee country. The study result revealed that most of the person (76%) who receive the detectors were not utilizing because the detectors were not in working condition and also the

batteries were either missing or disconnected and it was clearly stated that future programme to meet the current recommendation and standard of National Fire Protection Agency rather distributing smoke detectors.³²

Moyer. P (1998) stated that how to prevent and minimize the speed of fire, a simple rule to remember is the “Fire Triangle” of oxygen, heat and fuel. Minimizing oxygen enrichment will reduce the hazard. Proper protocols need to be established for each units of fire works.⁶⁵

Moe. H (1991) conducted a retrospective study to analyse the fire work related injuries over a five year period from 1986 to 1990 were analysed. The result revealed that the majority of (68.5%) the patients were teenagers between 10 to 19 years of age. Fourteen cases were caused by self made fireworks and another 16 cases were due to modified fire works. Twent four cases suffered from permanent disabilities. Mostly the finger amputations. Such injuries could be prevented by Law enforcement, coupled with public health education to modify social behaviour especially, when the ban against the self- made fire works.⁵⁹

Morad. M (1980) stated that burn injuries is a public health concern often associated with individual pain, emotional stress, prolonged hospitalization, permanent disfigurement and family stresses etc. Prevention programmes have been found effective to reduce mortality and morbidity rate.⁶²

2.1.3 Section - C Complication of fire accident in the fire cracker industry

Bialasiewicz, A. A (2007) conducted a prospective study on diagnosis and management of a “fire cracker” injury presenting with a post traumatic inflammation with an intra ocular foreign body. A 10 year old boy sustained a penetrating 16 mm of cornea sclera blast injury to his left eye. The cranial computed tomography revealed a metallic intra ocular foreign body (IOFB), retinal detachment and sub retinal haemorrhage. Post operatively large projectiles or parts removed from the eye immediately, in order to prevent complication from toxic metalloids due to fire cracker accident.²⁸

Liran. A (2007) conducted a retrospective study to identify risk factors of burn injuries and provide a starting point for establishment of an effective prevention plan. They analysed the demographic, etiologic clinical data of 5000 burn patients admitted to the five major hospitals in burn units in Israel during 7 year period (1997 – 2003). The data were obtained from the records of National Trauma Register. The difference between various group has been evaluated by chi – square test. The result revealed that the male gender was

twice as frequent as female gender in burn patients, 68.0% Vs 31.9%. Around 15% were work related burn injuries. The mean deviation of hospitalization was 13.7 days (SD17.7%). Surgical procedures became more common during the period of stay (13.4% - 19.8%) Mortality rate was 4.4 %. They found a strong correlation between burn degree and total body surface area and mortality etc.⁵³

Sharma, Y. R (2005) conducted a prospective observational study that enrolled all consecutive eyes with fireworks related ocular injury visiting trauma clinic during one year period. As a result 96% of patients were male, 50% were younger than 15 year old. The type of fire work involved with intra ocular injury was a bottle rocket in 38.5%. Bottle rocket injuries were more frequently associated with facial laceration, intra ocular foreign body and endophthalmitis development.⁷¹

Plontke, S.K (2003) conducted prospective study by the incidents of blast and explosion trauma due to use of firecrackers in Western Industrialized Society. The results are based on 562 centers in Germany; total of 8,160 cases was estimated giving an incidence of 9.9 per100,000 inhabitants. These incidences suggest that firecrackers may pose a momentous public high risk. Because of medical and economic importance of incurable sensory neural hearing loss. It is the task of public health services to promote the effective prevention of irreversible damage to the hearing organ and other complication due to fireworks.⁶⁸

Miller, J. M (2003) conducted experimental study to analyse the inner ear damage from toy cap pistols and fire crackers. Groups of guinea pigs comprising 7 animals in each group, were exposed to 10, 50, to 100 exposures to toy cap pistol shots. An additional group of 7 animals comprised the control material. The exposures were performed, with 15 seconds interval at 0.25 meter distance for toy cap pistol shots and at 0.8 meter for fire crackers, the peak sound level at the ear was 155dbc for both impulsive sounds. After 3 week survival period the animals were anesthetized and decapitated the cochlea were examined histological in surface preparation. One animal in each group exposed to 10 firecrackers and 10 toy cap pistol shots showed sensory cell loss. The result revealed that the fire 24 out of 28 animals showed pronounced sensory cell loss, it was clearly indicating that the risk for firecracker noise induced hearing loss, with toy cap guns and fire crackers.⁵⁸

Becker, J. M (2000) conducted a retrospective study on fatal and near fatal asthma in Children exposed to fireworks. Patients data were collected from an estimated 8,300 emergency department visits in United States. Information was also obtained from the consumer and National weather service. As a result one patient who admitted in the emergency department had a respiratory arrest and was resuscitated, but subsequently

expired. The second patient was able to treat aggressively and avoided intubations. These cases demonstrated the risks that fireworks may cause fatal asthma in children, who exposed to fireworks.²⁵

Wang, K. L (1998) conducted a prospective study on retinal detachment due to fire cracker injury at Tong Ren Hospital, Beijing, China. 7 cases of retinal detachment due to fire cracker injury were reported. Most of them were young boys. Associated anterior segment changes as well as the nature of the retinal breaks attested to the similarity between fire cracker injury and blunt contusion injuries. After successful retinal reattachment of all cases also the visual results were poor. This was clearly indicating that, to prevent visual from fire cracker injury, educational programmes should directed to school age boys.⁸⁰

Loomis, D. P (1997) fatal occupational injuries were studied by using the data from medical examiners in North Carolina for the year 1991 to 1997, cases were defined as deaths due to accidents at the work place. The industries contributing largest proportion of these deaths and 27% of the latter deaths occurred in catastrophic fire. Decentralized and rural industries were the most hazardous. Many deaths were outside the current jurisdiction of occupational safety and health agencies. These patterns suggest that greater scrutiny of such industries through both research and intervention is warranted.⁵⁴

Grassi. R (1996) conducted retrospective study on two different series of patients with burst injuries of the hand. One series included 23 men. 15- 55 year old, the first instance assessment of injuries of right hand 13 patients and left hand 10 patients. Another 42 men and 2 women aged 7- 61 year for second instance examinations. Two series were compared and the result follows. Both series the right hand was frequently involved. In the left hand the carpal bone were never affected. First meta carpal bones were most often fracture. The second finger was most frequently fractured and second meta carpal bone most often amputated. The severity of the above injuries and the extend of tissue damage depend on several factors including fire cracker speed, shape, weight and characteristic of fire cracker.⁴¹

Kumagami, H (1992) conducted a experimental study on the animals to analyse the cochlear deafness induced by firecracker explosion, fibrous degeneration of the end lymphatic sac was observed 4 months after the disappearance of prayer's rifles. The result revealed that the cochlear deafness by acoustic trauma after the lapse of long period of time exposure.⁵¹

Morell, T. C (1992) conducted a retrospective study on review of injuries due to fireworks seen in five casualty departments in Denmark over a period of four year. Total

catch mat population of 675000, 13% population of Denmark. During the period of observation, 358 injuries due to fireworks were observed. In 51% mechanism of the injury consisted of direct heat 33% patients were hit by flying fireworks. Among that 10% had small foreign bodies in the eye. The regions most frequently injured were the hands, fingers 40% eyes 24%. The estimated number of injuries due to fireworks in Denmark is 690 annually.⁶³

Knapp, J. F (1990) stated that in 1986, cared for 4 year old boy, in children's Mercy Hospital, UMKC school of medicine who was injured in the explosion of the illegal fire cracker equivalent to one third of a stick of dynamite. It was found that this child injury were similar to those encountered in adults. This case was presented as illustrative of blast trauma in child hood, and as a review of blast injury.⁵⁰

Vajpayee, R. B (1991) conducted a retrospective study on the records of 59 patients (6eyes) with contact thermal burns of the cornea (unilateral in 52 cases and bilateral in 7 cases) were reviewed to determine the causes. The commonest cause was splashing of boiling fluids (42% of cases followed by contact with red hot fire cracker particles(18%) and lit match heads (17%).In 59 eyes (89% the burn was limited to the corneal epithelium, in (8%) the superficial stroma was also involved , and in 2 (3%) there was associated corneal perforation caused by mechanical impact of foreign bodies due to force of the fire crackers.⁷⁶

Gupta, D (1989) conducted a prospective study to determine auditory status of cross section of target population involving 600 participants from various age group before and exposure of fire cracker noise after Deepawali. The average sound level at the distance of 3m was 150 db, thus exceeding the damage risk criterion for adults (i.e. 130 db peak level). An average 30 db persist and sensory neural hearing was found in 25% of the target population as a result of fire cracker noise during Deepawali.⁴³

Berger, L. R (1985) conducted a prospective study on injuries from fireworks. There were more than 8200 workers of fire works related injuries treated in US emergency room. The result revealed that the eyes were the body part most often injured, followed by fingers. Burns account for majority of fire cracker injuries. Every type of fire works resulted in serious injury or death.Fire crackers , bottle rockets and sparklers contribute to the most hospitalizations.²⁷

Saravanabavanathan.N (1978) conducted a retrospective study on injuries caused by home made unconventional explosives were studied. The use of these types of explosives was common in India, Srilanka and other eastern countries. Injuries were due to blast effect,

shrapnel and flash. The blast effect was seen only when the explosion occurs at close range.⁶⁹

Review of literature has helped the investigator to gain a broader knowledge on safety measures of fire accident, to formulate tool, to frame conceptual framework and also served as a gain pathway to proceed with the study.

Part – II 2.2 CONCEPTUAL FRAMEWORK

This study based on Context, input, process and product evaluation model.

Context

Context evaluations assess needs, problems, assets and opportunities to define goals and priorities. In this study, the context process includes the demographic variables like age, religion, family income, family type, food habit and parental education level. Pre-intervention assessment was done on level of knowledge, of ill effects of fire cracker accidents

Input

Input evaluations assess alternative approaches, competing action plans and budgets for their feasibility and potential cost-effectiveness to meet targeted needs and achieve Goals. In this study the input the selected sample receives video teaching on ill effects of fire cracker accidents.

Process

Process evaluations assess the implementation of plans. In this study Process includes the transformation of knowledge regarding ill effects of fire cracker accidents.

Product

Product evaluations identify and assess outcomes. This study the product is change in level of knowledge, regarding ill effects of fire cracker accidents.

Evaluation

Evaluation is the feed back of the effectiveness of video assisted teaching programme. This study the feed back gives information of environmental responses to the system, output is utilized by the system in adjustment correction and accommodation to the interaction with the environment. In this study it refers to analysis of the post test.

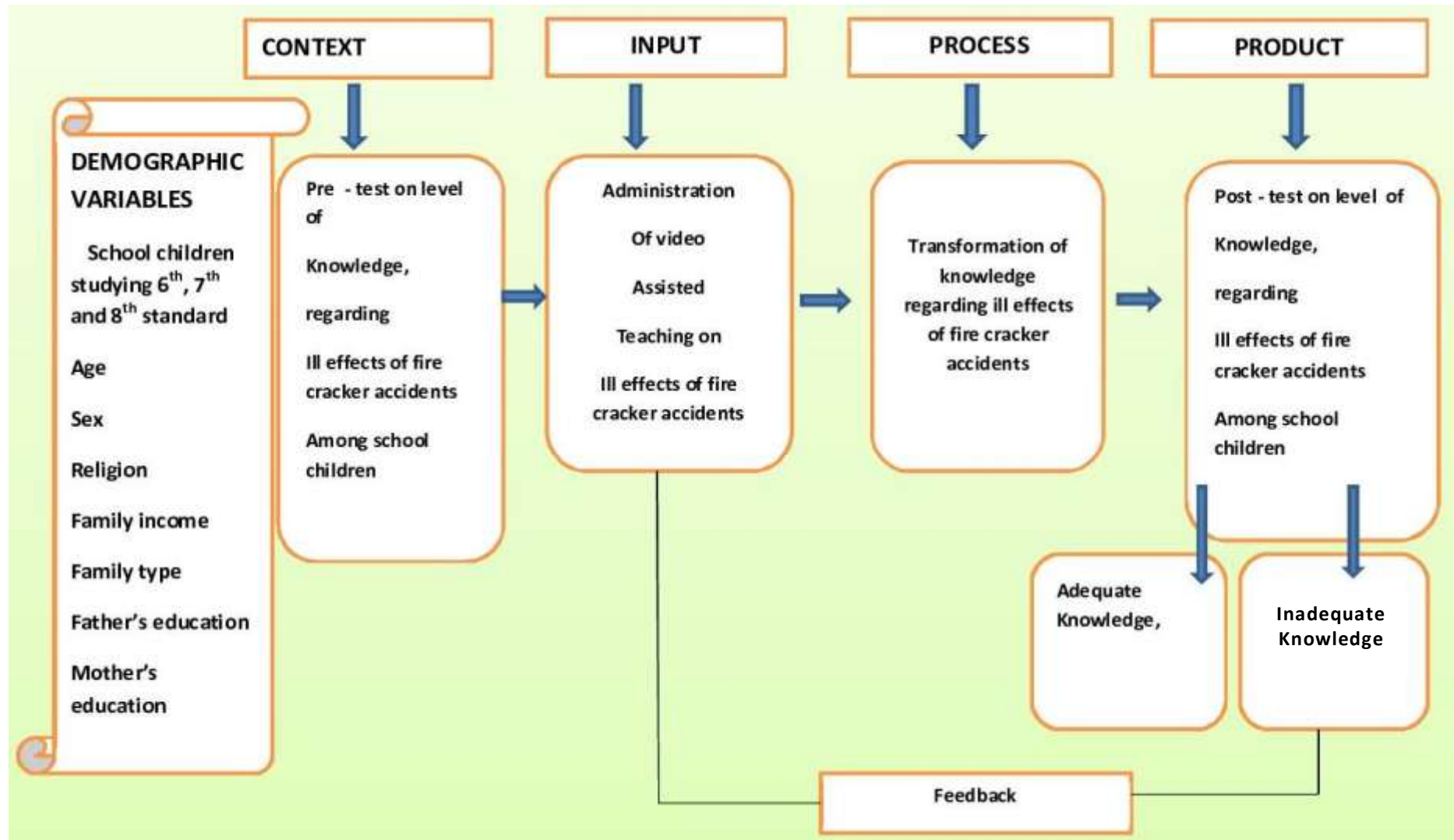


FIG-2.1: CONCEPTUAL FRAMEWORK ADOPTED AND MODIFIED FROM DANIEL L, STUFFLEBEAM'S CONTEX, INPUT, PROCESS AND PRODUCT EVALUATION (CIPP) MODEL 2003

CHAPTER – III METHODOLOGY

This chapter deals with the methodology which was followed study to assess effectiveness of video assisted teaching programme on knowledge regarding ill effects of fire cracker accidents among school children at Medavakkam, Kanchipuram District.

3.1 Research approach: Quantitative approach

3.2 Duration of the study: 4 weeks from 18.11.16 to 20.12.16

3.3 Study setting: Government middle school at Medavakkam.

3.4 Study Design: Pre experimental one group pre - test post - test design.

Table : I

pre- test	video assisted teaching	post -test
O1	X	O2

Notes

- O1 - Pre-test
- X - Video Assisted teaching on ill effects of fire cracker accidents
- O2 - Post –test

3.5 Study population

3.5.1 Target population: Government Middle School children 560

3.5.2 Accessible population: 6th, 7th, 8th standard school children Government Middle School Medavakkam.

3.6 Sample size: 60 school children

3.7 Sampling criterion

3.7.1 Inclusion criteria

- ❖ School children who are studying in 6th, 7th, and 8th standard
- ❖ School children who are willing to participate

- ❖ School children who are able to read and write in Tamil and English

3.7.2 Exclusion criteria

- ❖ School children who are not willing to participate
- ❖ School children who are mentally challenged

3.8. Sampling technique

Convenient sampling technique

3.9. Research Variables

3.9.1. Independent variable : Video Assisted teaching

3.9.2 . Dependent variable : School children Knowledge

3.9.3 Extraneous Variable: Age, Sex, Education, Religion, Father Education, Mother Education, Occupation of the Father, Monthly family income, Type of family.

3.10. Development and description of the tool

3.10.1 Development of the tool

Opinion of experts from medicine and nursing, Construction of tool, Content validity, Pretesting of tool, Reliability of tool and instrument was ascertained by test – retest reliability.

3.10.2 Description of the tool

The tool was prepared by the investigator. The tool consists of two sections;

Section-A: Demographic data which includes age, religion, family income, parent's educational status, and type of family. Demographic variables were coded to assess the background of school children and thereby subject it for statistical analysis.

Section-B: Structured Questionnaire. It consists of 20 structured questionnaires to assess the knowledge on ill effects of fire cracker accidents.

The tool consists of 5 questions related to knowledge and 9 questions related to disadvantages, 6 questions related to prevention.

3.11 Score interpretation:

Section B: It consists of 20 structured questions to assess the knowledge on ill effects of fire cracker accidents. Each correct answer was given a score of (1) one and wrong answer was scored as (0) zero. The total scores were 20.

Table – 3.2 The scores were interpreted as follows:

Level of knowledge	Score
Adequate	11-20
Moderate	6-10
Inadequate	0-5

3.12 Content Validity

Content validity was determined by Nursing, Medical and statistical experts. They suggested certain modifications in tool. After the modifications they agreed this tool for evaluate the effectiveness of video assisted teaching programme on knowledge regarding ill effects of fire cracker accidents among school children at Medavakkam, Kanchipuram District.

3.13 Ethical consideration

The study objectives, intervention and data collection procedure were approved by the research and the institutional ethics committee of Madras Medical College.

3.14 Reliability

After pilot study reliability of tool was assessed by using test retest reliability method and its correlation coefficient r - value was 0.80 (knowledge). This correlation coefficient is very high and it is good tool for evaluate the effectiveness of video assisted teaching programme on knowledge regarding ill effects of fire cracker accidents among school children at Medavakkam, Kanchipuram District.

3.15 Pilot study

The pilot study was conducted after getting formal administrative permission and ethical clearance. The pilot study was conducted at Government Middle School at Madavakkam for a period of one week. The study in which the prior conducted was excluded for the main study. The data related to the variables were collected. The pre and post assessment of ill effects of fire cracker accidents knowledge was given to the participants by investigator in person. Results were analyzed. The investigator found that the instrument was

feasible to use and further no modifications were needed before the actual implementation of the study.

3.16 Data collection procedure

The study was conducted in selected school of Medavakkam, Kanchipuram District after obtaining permission from the Deputy Director of Health Services, and medical officer of Primary Health Centre. A self introduction was given by the investigator and the informed written consent was obtained from the school children and purpose of the study was explained to the participants. They were assured that no physical or emotional harm would be done in the course of the study. The objectives and purpose of the study were explained and confidentiality was maintained.

The data collection procedure was done participants selected by convenient sampling technique 60 samples taken and divided into two batch, each batch 30 children selected. Then pre test questionnaire given and explained about questions then collected the questions. After that each batch 25 to 30 minutes video assisted teaching given regarding ill effects of fire cracker accidents. Last I was clarified the doubt. After 6 days went to the school and meet the students given the post test questionnaire.

Table - 3.3 3.17 Intervention protocol:

S.NO	Protocol	Pre experimental group
1.	Place	Govn't middle school children
2.	Intervention tool	Video assisted teaching
3.	Duration	7 days
4.	Time	3.00pm to 4.00pm
5.	Administered by	Investigator

3.18 Data entry and analysis:

Data entry: Entered the data into the excel sheet and coding the data into SPSS statistical package system.

Analysis: Collected data will be analyzed by descriptive and inferential statistics.

Descriptive analysis

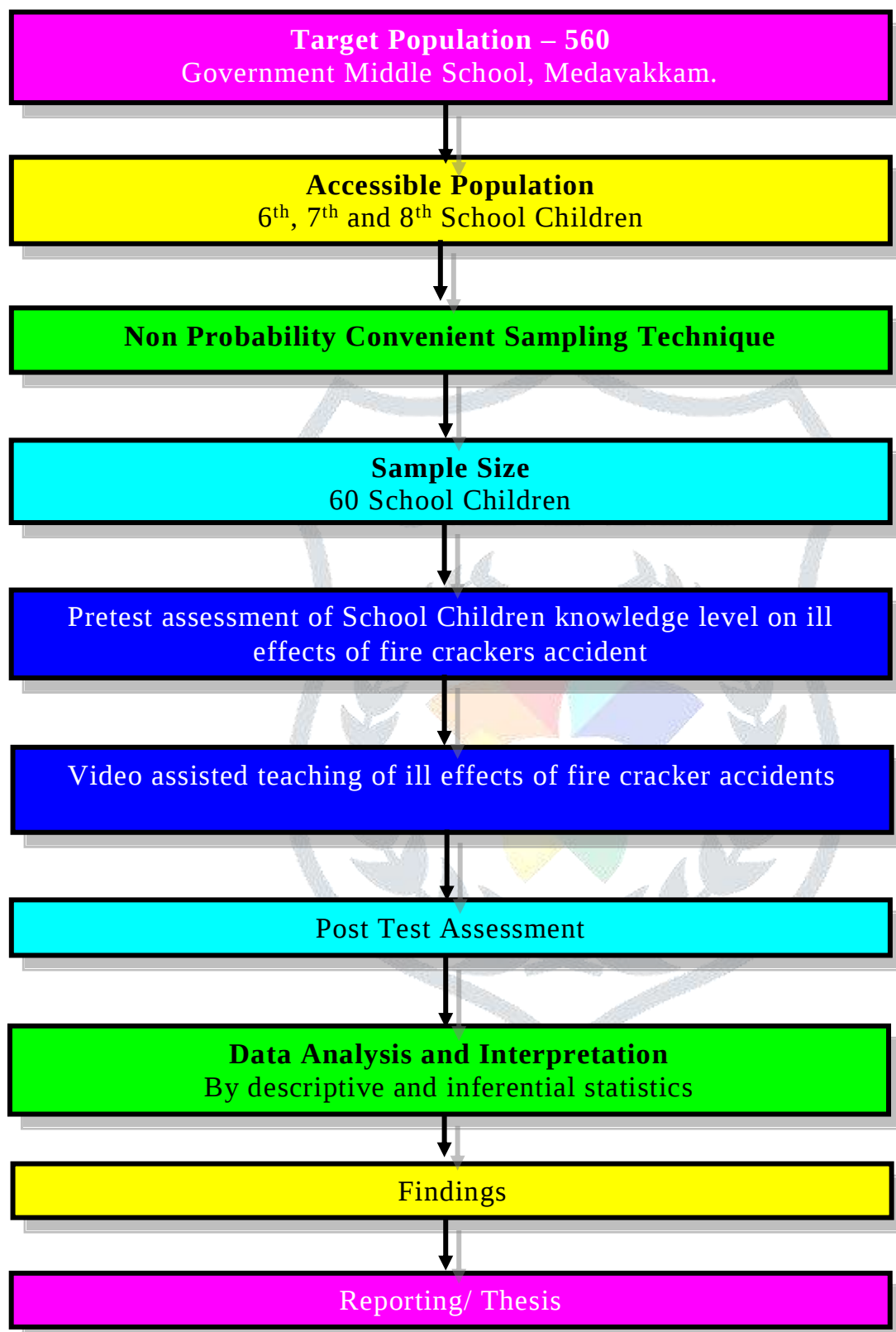
- ❖ Frequency and percentage analysis will be used to describe demographic characteristic of school students.

- ❖ Range, mean and standard deviation will be used to assess the knowledge of school students.

Inferential analysis

- ❖ Paired t-test will be used to compare the pre-test and post-test knowledge.
- ❖ Chi-square analysis will be used to find out the association between the pre-test knowledge scores and demographic variable.
- ❖ $P < 0.05$ was considered statistically significant.



Figure : 3.1 Schematic representation of research design

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

Analysis is a process of organizing synthesizing data in such a way that a research questions can be answered and hypothesis tested.

- (Polit and Hungler 2008)

This chapter deals with the analysis and interpretation of the data obtained from 60 school children with reference their knowledge regarding ill effects of fire cracker accidents. The analysis and interpretation of the study was based on the data collected through structured Multiple Choice Questions to assess the knowledge. The collected data were tabulated and presented according to the objectives under the following headings.

- Section –I : Destribution of demographic variables of study participants.
- Section-II : Pre-test level of knowledge about ill effects of fire cracker accidents.
- Section –III : Post-test level of knowledge about ill effects of fire cracker accidents
- Section- IV : Comparison of pre and post -test level of knowledge
- Section –V : Effectiveness of video assisted teaching on ill effects of fire cracker accidents
- Section-VI : Association between pre and post-test level knowledge with selected demographic variables.
- Section-VII : Association between school children knowledge gain score and demographic Variables.

Section – I :Destribution of demographic vaiables of study participants

Table 4.1 : Demographic Profile

Demographic variables		No. of school children	%
Age	11 years	20	33.3%
	12 years	20	33.3%
	13 years	20	33.4%
Sex	Male	6	10.0%
	Female	54	90.0%

Demographic variables		No. of school children	%
Education	6th std	20	33.3%
	7th std	20	33.3%
	8th std	20	33.4%
Religion	Hindu	55	91.7%
	Christian	3	5.0%
	Muslim	2	3.3%
Father Education	No formal education	15	25.0%
	Primary	20	33.3%
	Middle	19	31.7%
	High school	6	10.0%
Mother Education	No formal education	17	28.3%
	Primary	21	35.0%
	Middle	17	28.3%
	High school	5	8.4%
Occupation of the father	Self employed	31	51.7%
	Daily wages	28	46.6%
	Retired employee	1	1.7%
Monthly family income	< Rs,5000	34	56.7%
	Rs.5000 -10000	26	43.3%
	>Rs.10000	0	0.0%
Type of family	Nuclear family	49	81.7%
	Joint family	11	18.3%
	Extended family	0	0.0%

Above table reveals the demographic information of school children those who are participated for the following study on "Assess the effectiveness of video assisted teaching programme on knowledge regarding ill effects of fire cracker accidents among school children at Medavakkam, Kanchipuram".

Section –II : Pre-test level of knowledge about ill effects of fire cracker accidents**Table 4.2 : Percentage of Pretest Knowledge Score**

Fire cracker accidents Knowledge on	Maximum score	Mean	SD	% of knowledge
General Information	5	2.15	.95	43.0%
Disadvantages	9	3.42	1.23	38.0%
Prevention	6	1.70	.93	28.3%
TOTAL	20	7.27	1.68	36.4%

Above table reveals each domain wise school children pre-test percentage of knowledge regarding ill effects of fire cracker accidents. They are having more score in **General Information of Fire cracker accidents** (43.0%) and minimum score in **Prevention of Fire cracker accidents** (28.3%). Overall they are having 36.4% of score.

Table-4.3 : Domainwise Percentage of Pre test Level of Knowledge Score

Fire cracker accidents Knowledge on	Pre-test Level of Knowledge						Total
	Inadequate		Moderate		Adequate		
	n	%	n	%	n	%	
General Information	53	88.3%	7	11.7%	0	0.0%	60
Disadvantages	55	91.7%	5	8.3%	0	0.0%	60
Prevention	57	95.0%	3	5.0%	0	0.0%	60

Above table reveals each domain wise pre-test percentage of level of knowledge score regarding ill effects of fire cracker accidents among school children before the video assisted teaching programme.

Table 4.4 : Pre-test Level of Knowledge Score

Level of knowledge	No. of school children	%
Inadequate knowledge	55	91.7%
Moderate knowledge	5	8.3%
Adequate knowledge	0	0.0%
Total	60	100%

Above table reveals the school children pre-test level of knowledge score before the administration of video assisted teaching programme. 91.7% of the school children are having inadequate level of knowledge score, 8.3% of them are having moderate level of knowledge score and none of them are having adequate level of knowledge score.

Table – 4.5 Score interpretation

Minimum score = 0 Maximum score =1 questions= 20 Total score=20

S. No.	Grade	Score	% of score
1.	Inadequate	0 – 10	0% - 50%
2.	Moderate	11 – 15	51% - 75%
3.	Adequate	16 – 20	76% - 100%

Section – III : Post-test level of knowledge about ill effects of fire cracker accidents

Table-4.6 : Percentage of Post-test Knowledge Score

Fire cracker accidents Knowledge on	Maximum score	Mean	SD	% of knowledge
General Information	5	4.30	.46	86.0%
Disadvantages	9	7.12	1.28	79.1%
Prevention	6	4.82	.39	80.3%
Total	20	16.23	1.32	81.2%

Above table reveals each domain wise post-test percentage of knowledge score regarding ill effects of fire cracker accidents among school children. They are having more score in **General Information of Fire cracker accidents**(86.0%) and minimum score in **Disadvantages of Fire cracker accidents** (79.1%). Overall they are having 81.2% of score.

Table 4.7 : Domainwise percentage of post-test level of knowledge score

Fire cracker accidents Knowledge on	Post-test Level of Knowledge						Total
	Inadequate		Moderate		Adequate		
	n	%	n	%	n	%	
General Information	0	0.0%	10	16.7%	50	83.3%	60
Disadvantages	0	0.0%	13	21.7%	47	78.3%	60
Prevention	0	0.0%	12	20.0%	48	80.0%	60

Above table reveals each domain wise post-test percentage and level of knowledge score regarding ill effects of fire cracker accidents among school children after the video assisted teaching programme.

Table 4.8 : Post-test level of knowledge score

Level of knowledge	No. of school children	%
Inadequate knowledge	0	0.0%
Moderate knowledge	12	20.0%
Adequate knowledge	48	80.0%
Total	60	100%

Above table reveals the post-test level of knowledge score after administration of video assisted teaching programme among school children. None of the children are having inadequate level of knowledge score, 20.0% of them are having moderate level of knowledge score and 80.0% of them are having adequate level of knowledge score.

Section-IV : Comparison of pre and post-test level of knowledge

Table -4.9 : Comparison of Pre test and Post test Knowledge Score

Fire cracker accidents Knowledge on	Knowledge score				Mean Difference	Student's paired t-test
	Pre test		Post test			
	Mean	SD	Mean	SD		
General Information	2.15	.95	4.30	.46	2.15	t=14.33, P=0.001*** significant
Disadvantages	3.42	1.23	7.12	1.28	3.70	t=15.54, P=0.001*** significant
Prevention	1.70	.93	4.82	.39	3.12	t=23.14, P=0.001*** significant

*** very high significant at $P \leq 0.001$

Above table reveals compares pre-test and post-test mean knowledge score.

Considering knowledge on **General Information of Fire cracker accidents** aspects, in pre-test, school children are having 2.15 score where as in post-test they are having 4.30 score, so the difference is 2.15 This difference between pre-test and post-test is large and it is statistically significant.

Considering knowledge on **Disadvantages of Fire cracker accidents** aspects, in pre-test, school children are having 3.42 score where as in post-test they are having 7.12 score, so the difference is 3.70. This difference between pre-test and post-test is large and it is statistically significant.

Considering knowledge on **Prevention of Fire cracker accidents**, in pre-test, school children are having 1.70 score where as in post-test they are having 4.82 score, so the difference is 3.12. This difference between pre-test and post-test is large and it is statistically significant.

Statistical significance was calculated by using student's paired 't' test.

Table 4.10 : Comparison of overall pre and post-test knowledge score

	No. of school children	Knowledge score Mean $\pm$ SD	Mean Difference	Student's paired t-test
Pretest	60	7.27 $\pm$ 1.68	8.96	t=31.11 P=0.001*** DF =59 significant
posttest	60	16.23 $\pm$ 1.32		

DF= Degrees of Freedom

*** very high significant at $P \leq 0.001$

Above table reveals the comparison of overall pre-test and post-test knowledge score.

Considering overall knowledge score, in pre-test, school children are having 7.27 score where as in posttest they are having 16.23 score , so the difference is 8.96. The difference between pre-test and post-test score is large and it is statistically significant. Differences between pre-test and post-test score was analyzed using students paired t-test.

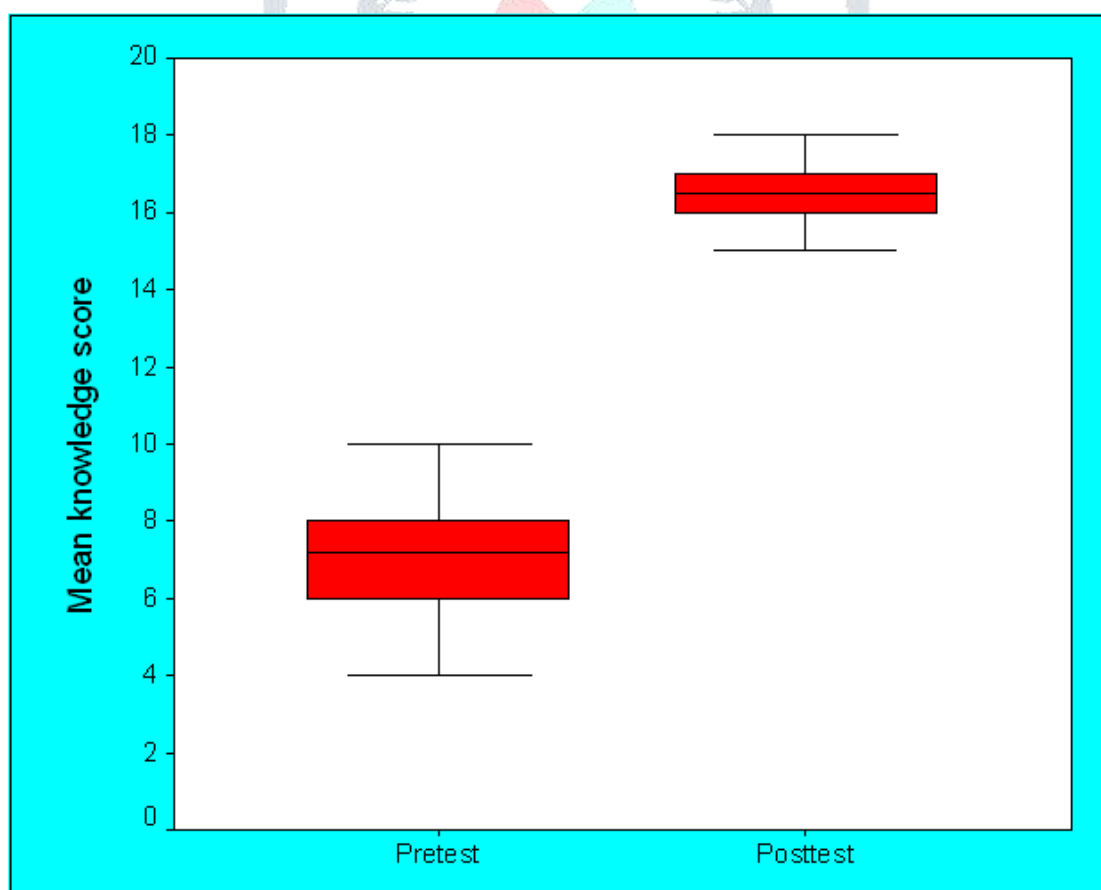


Fig:4.1 : Box-plot Compares the pre-test and post-test knowledge score regarding Fire cracker accidents among school children, before and after administration of Video Assisted Teaching Programme.

Table 4.11 : Pre-test and post-test level of knowledge score

Level of knowledge	Test				Extended McNemar's test
	Pre-test		Post-test		
	n	%	n	%	
Inadequate	55	91.7%	0	0.0%	$\chi^2=56.25$ p=0.001*** DF= 2 significant
Moderate	5	8.3%	12	20.0%	
Adequate	0	0.0%	48	80.0%	
Total	60	100%	60	100%	

DF= Degrees of Freedom

*** very high significant at $P \leq 0.001$

Above table reveals compares the pre-test and post-test knowledge score regarding Fire cracker accidents among school children, before and after administration of Video Assisted Teaching Programme

91.7% of the school children are having inadequate level of knowledge score, 8.3% of them are having moderate level of knowledge score and none of them are having adequate level of knowledge score.

None of the children are having inadequate level of knowledge score, 20.0% of them are having moderate level of knowledge score and 80.0% of them are having adequate level of knowledge score.

Statistically there is a significant difference between pre and post test knowledge score. It was confirmed using extended McNemar's test

Table - 4.12 : Percentage of knowledge gain score

	Max score	knowledge score Mean $\pm$ SD	Mean Difference in knowledge score with 95% Confidence interval	Percentage of knowledge gain score with 95% Confidence interval
Pre-test	20	7.27 $\pm$ 1.68	8.96 (8.39 – 9.54)	44.8% (42.0% – 47.7%)
Post-test	20	16.23 $\pm$ 1.32		

Above table reveals the effectiveness of the study.

On an average, school children are **gained** 44.8% of knowledge score after administration of video assisted teaching programme. Differences between pre-test and post-test score was analysed using mean difference with 95% confidence interval and proportion with 95% Confidence interval. This 44.8% of knowledge gain score shows the **effectiveness of video assisted teaching programme**.

Section – V :Effectiveness of video assisted teaching on ill effects of fire cracker accidents

Table-4.13 : Effectiveness of video assisted teaching programme

Fire cracker accidents Knowledge on	Pre-test knowledge	Post-test knowledge	% of knowledge gain
General Information	43.0%	86.0%	43.0%
Disadvantages	38.0%	79.1%	41.1%
Prevention	28.3%	80.3%	52.0%
Overall	36.4%	81.2%	44.8%

Above table reveals each domain wise percentage of knowledge gain.

In **Fire cracker accidents Knowledge on General Information** aspects, school children are gained **43.0%** of knowledge.

In **Fire cracker accidents Knowledge on Disadvantages** aspects, school children are gained **41.1%** of knowledge.

In **Fire cracker accidents Knowledge on Prevention** aspects, school children are gained **52.0%** of knowledge.

Overall they gained **44.8%** of knowledge score after intervention.

This shows the **effectiveness of video assisted teaching programme on knowledge regarding ill effects of fire cracker accidents among school children at Medavakkam, Kanchipuram**.

Section – VI : Association between pre and post-test level of knowledge with selected demographic variables

Table 4.14 : Association Between Pre-test Level of Knowledge Score and School Children Demographic Variables

Demographic variables		Pre-test level of knowledge score						Total	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
Age	11 years	18	90.0%	2	10.0%	0	0.0%	20	$\chi^2=0.54$ P=0.76 DF=2 NS
	12 years	17	89.5%	2	10.5%	0	0.0%	19	
	13 years	20	95.2%	1	4.8%	0	0.0%	21	
Sex	Male	5	83.3%	1	16.7%	0	0.0%	6	$\chi^2=0.61$ P=0.43 DF=1 NS
	Female	50	92.6%	4	7.4%	0	0.0%	54	
Education	6th std	18	90.0%	2	10.0%	0	0.0%	20	$\chi^2=0.54$ P=0.76 DF=2 NS
	7th std	17	89.5%	2	10.5%	0	0.0%	19	
	8th std	20	95.2%	1	4.8%	0	0.0%	21	
Religion	Hindu	50	90.9%	5	9.1%	0	0.0%	55	$\chi^2=0.49$ P=0.78 DF=2 NS
	Christian	3	100.0%			0	0.0%	3	
	Muslim	2	100.0%			0	0.0%	2	
Father Education	No formal education	14	93.3%	1	6.7%	0	0.0%	15	$\chi^2=1.99$ P=0.57 DF=3 NS
	Primary	17	85.0%	3	15.0%	0	0.0%	20	
	Middle	18	94.7%	1	5.3%	0	0.0%	19	
	High school	6	100.0%			0	0.0%	6	
Mother Education	No formal education	16	94.1%	1	5.9%	0	0.0%	17	$\chi^2=1.69$ P=0.63 DF=3 NS
	Primary	18	85.7%	3	14.3%	0	0.0%	21	
	Middle	16	94.1%	1	5.9%	0	0.0%	17	
	Highschool school	5	100.0%			0	0.0%	5	
Occupation of the father	Self employed	28	90.3%	3	9.7%	0	0.0%	31	$\chi^2=0.21$ P=0.89 DF=2 NS
	Daily wages	26	92.9%	2	7.1%	0	0.0%	28	
	Retired employee	1	100.0%			0	0.0%	1	
Monthly family income	< Rs,5000	32	94.1%	2	5.9%	0	0.0%	34	$\chi^2=0.61$ P=0.43 DF=1 NS
	Rs.5000 - 10000	23	88.5%	3	11.5%	0	0.0%	26	

Demographic variables		Pre-test level of knowledge score						Total	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
Type of family	Nuclear family	46	93.9%	3	6.1%	0	0.0%	49	$\chi^2=1.71$ P=0.19 DF=1 NS
	Joint family	9	81.8%	2	18.2%	0	0.0%	11	

DF= Degrees of Freedom Not significant P> 0.05 NS= Not significant.

Above table reveals the association between pre-test level of knowledge score with school children demographic variables. None of the demographic variables are significantly associated with their pre-test level of knowledge. It was confirmed using chi square test.

Table 4.15 : Association Between Post-test Level of Knowledge Score and School Children Demographic Variables

Demographic variables		Post-test level of knowledge score						Total	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
Age	11 years	0	0.0%	8	40.0%	12	60.0%	20	$\chi^2=8.26$ P=0.02* DF=2 S
	12 years	0	0.0%	3	15.8%	16	84.2%	19	
	13 years	0	0.0%	1	4.8%	20	95.2%	21	
Sex	Male	0	0.0%	2	33.3%	4	66.7%	6	$\chi^2=0.74$ P=0.38 DF=1 NS
	Female	0	0.0%	10	18.5%	44	81.5%	54	
Education	6th std	0	0.0%	8	40.0%	12	60.0%	20	$\chi^2=8.26$ P=0.02* DF=2 S
	7th std	0	0.0%	3	15.8%	16	84.2%	19	
	8th std	0	0.0%	1	4.8%	20	95.2%	21	
Religion	Hindu	0	0.0%	11	20.0%	44	80.0%	55	$\chi^2=0.83$ P=0.65 DF=2 NS
	Christian	0	0.0%	1	33.3%	2	66.7%	3	
	Muslim	0	0.0%	0	0.0%	2	100.0%	2	
Father Education	No formal Education	0	0.0%	5	33.3%	10	66.7%	15	$\chi^2=2.23$ P=0.55 DF=3 NS
	Primary	0	0.0%	3	15.0%	17	85.0%	20	
	Middle	0	0.0%	3	15.8%	16	84.2%	19	
	High school	0	0.0%	1	16.7%	5	83.3%	6	
Mother Education	No formal education	0	0.0%	5	29.4%	12	70.6%	17	$\chi^2=1.42$ P=0.69 DF=3 NS
	Primary	0	0.0%	3	14.3%	18	85.7%	21	

Demographic variables		Post-test level of knowledge score						Total	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
	Middle	0	0.0%	3	17.6%	14	82.4%	17	
	High school	0	0.0%	1	20.0%	4	80.0%	5	
Occupation of the father	Self employed	0	0.0%	3	9.7%	28	90.3%	31	$\chi^2=7.35$ P=0.03* DF=2 S
	Daily wages	0	0.0%	8	28.6%	20	71.4%	28	
	Retired employee	0	0.0%	1	100.0%	0	0.0%	1	
Monthly family income	< Rs,5000	0	0.0%	7	20.6%	27	79.4%	34	$\chi^2=0.02$ P=0.89 DF=1 NS
	Rs.5000 - 10000	0	0.0%	5	19.2%	21	80.8%	26	
Type of family	Nuclear family	0	0.0%	12	24.5%	37	75.5%	49	$\chi^2=5.56$ P=0.02* DF=1 S
	Joint family	0	0.0%	0	0.0%	11	100.0%	11	

DF= Degrees of Freedom Not significant $P > 0.05$ NS= Not significant

* significant at $P \leq 0.05$ ** significant at $P \leq 0.01$

Above table reveals the association between post-test level of knowledge score with school children demographic variables. Elder children, More standard studying children, self employed fathers children and joint family system children are gained more knowledge than others. It was confirmed using chi square test.

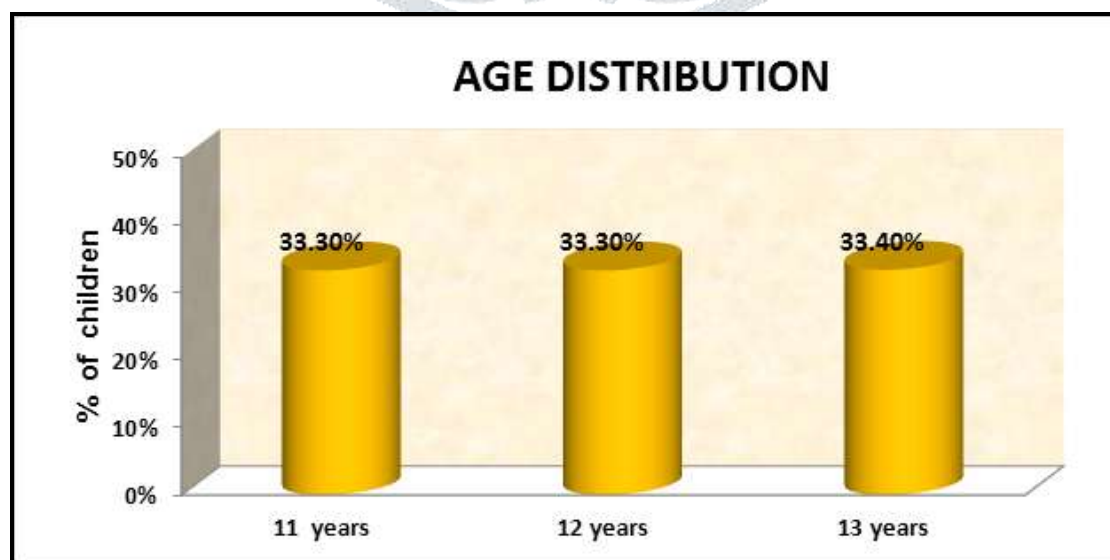


Fig: 4.2 Age wise distribution of school children

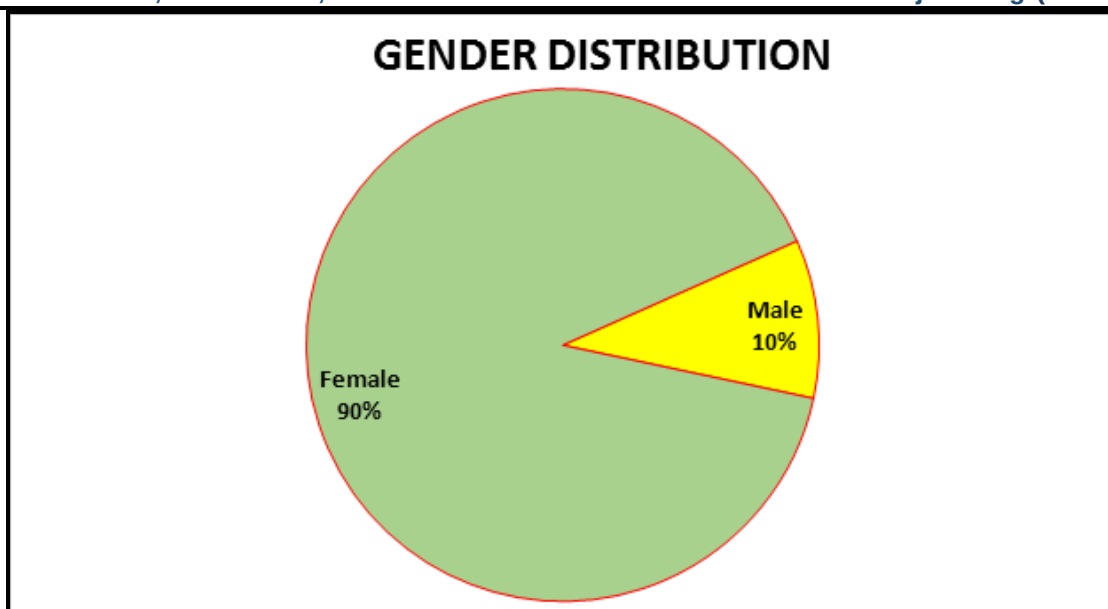


Fig: 4.3. Gender wise distribution of school children

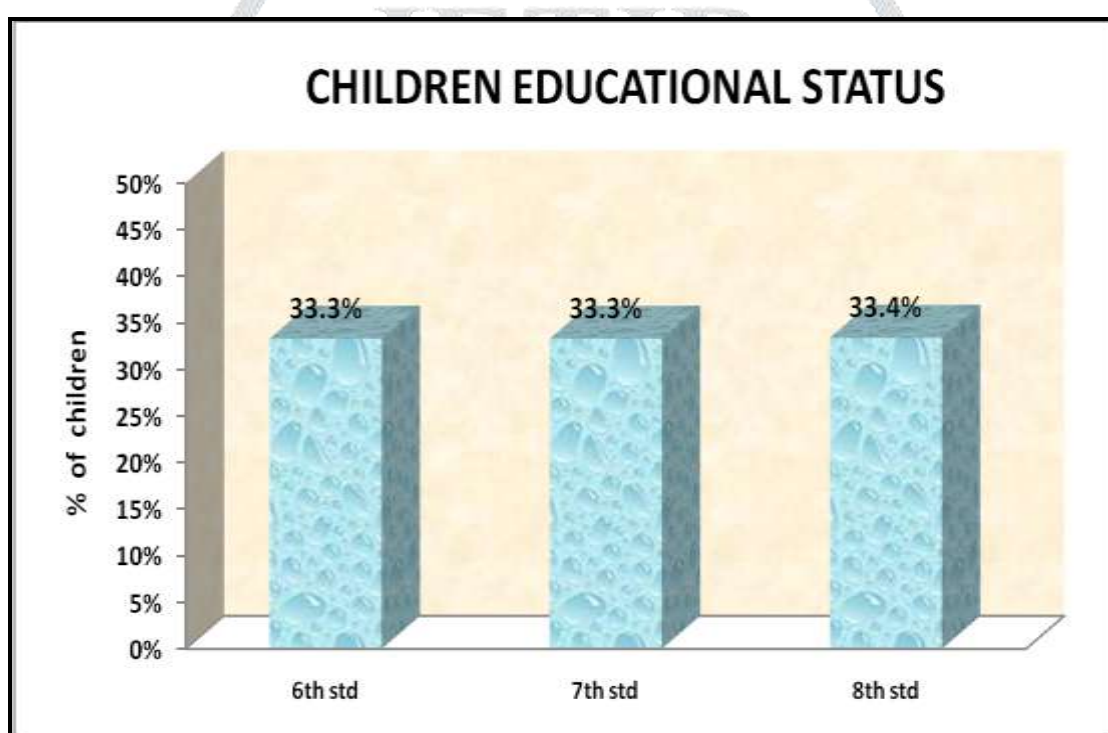


Fig:4.4. Children educational status wise distribution of school children

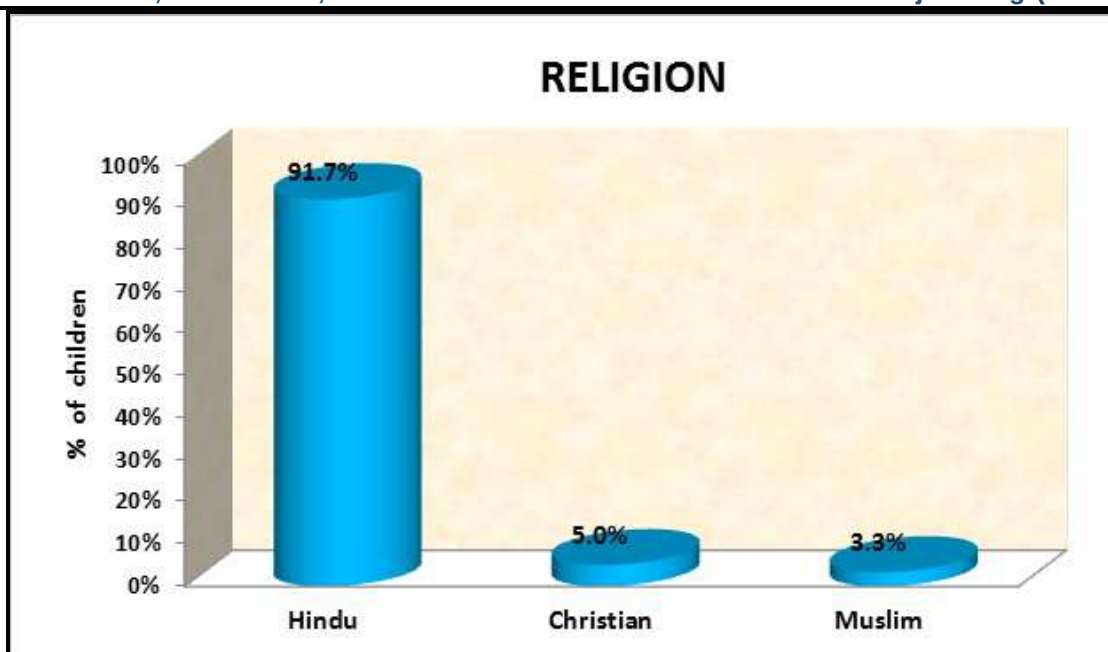


Fig: 4.5. Religion wise distribution of school children

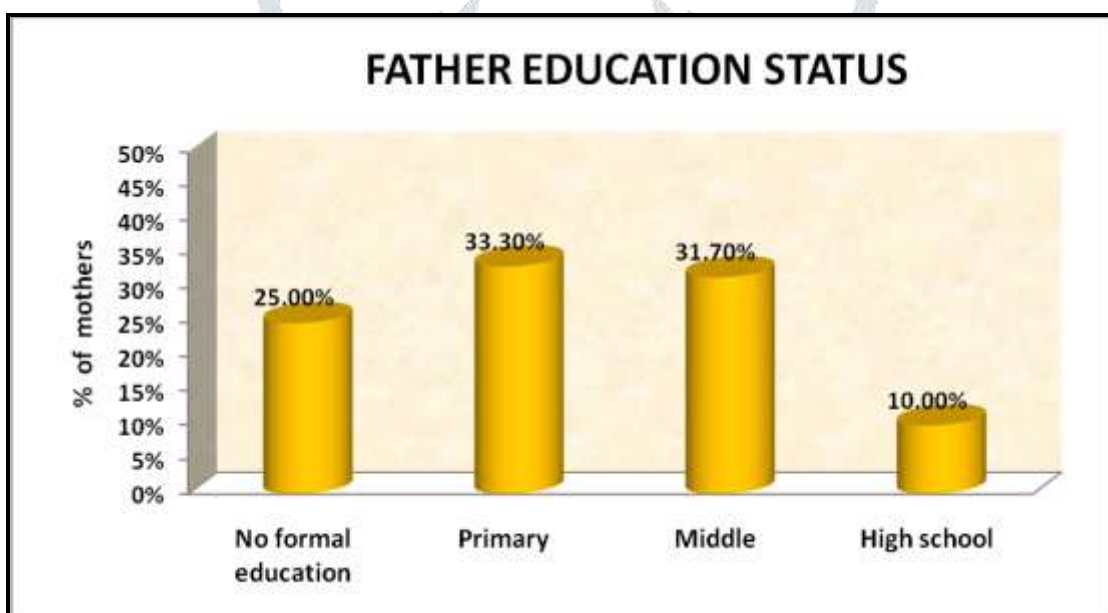


Fig:4.6.Father educational status wise distribution of school children

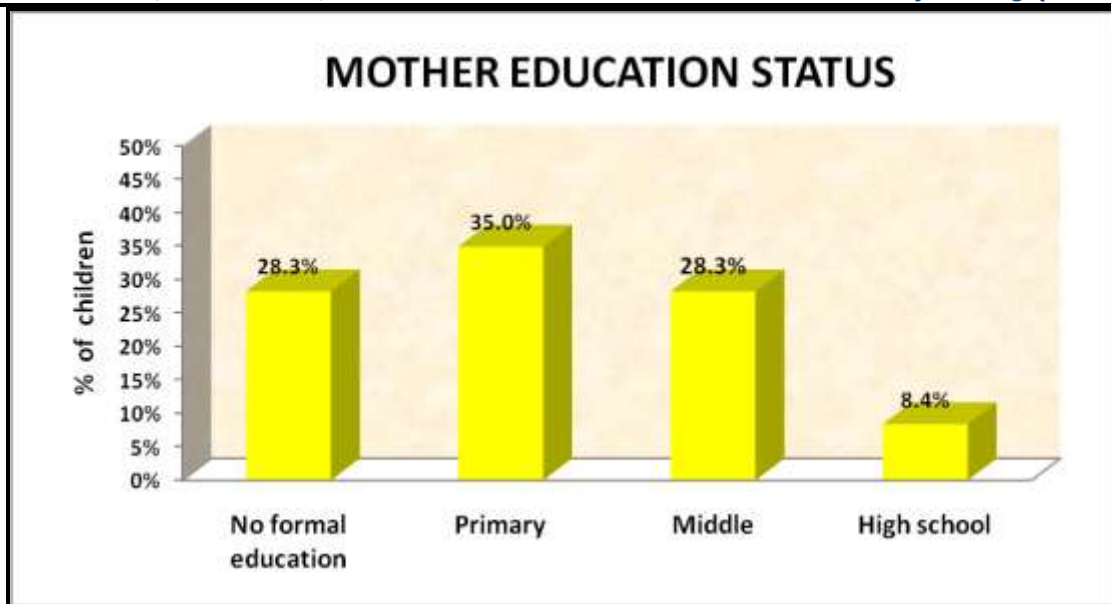


Fig:4.7.Mother educational status wise distribution of school children

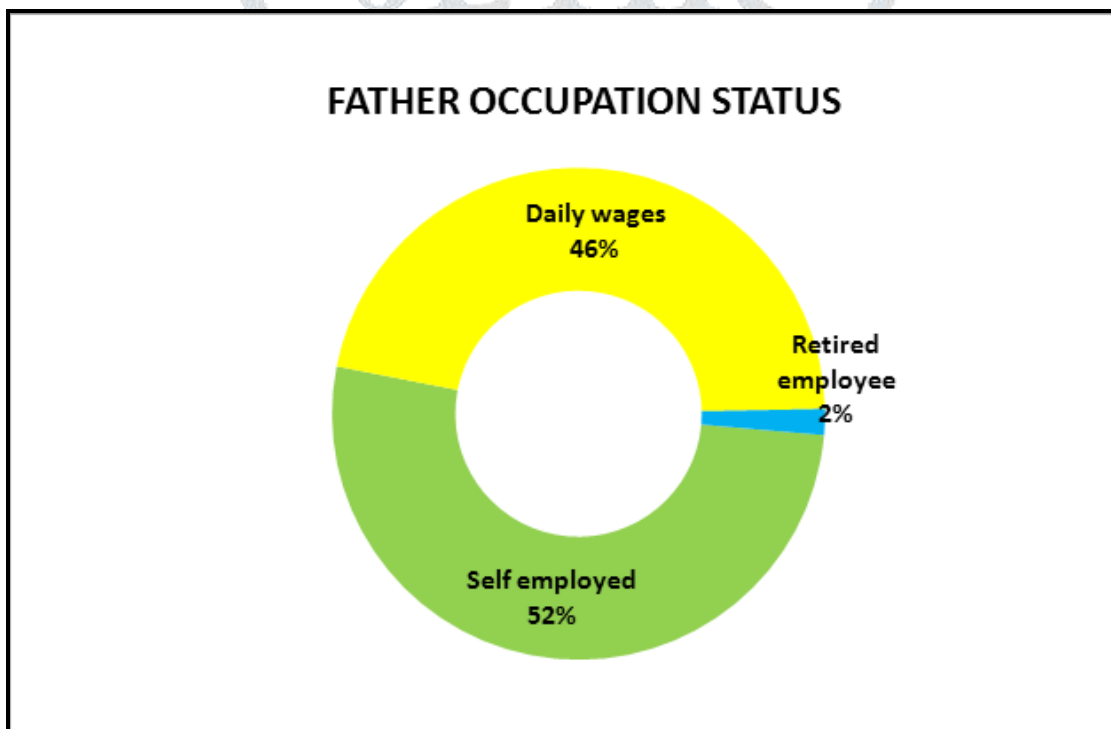


Fig:4.8. Father occupation status wise distribution of school children

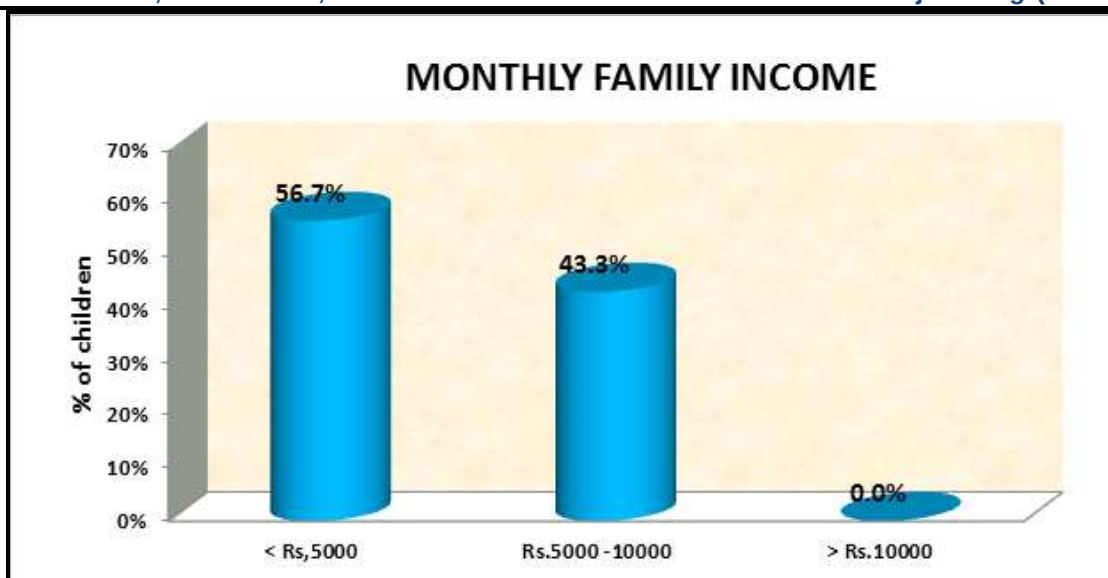


Fig:4.9. Monthly family income wise distribution of school children

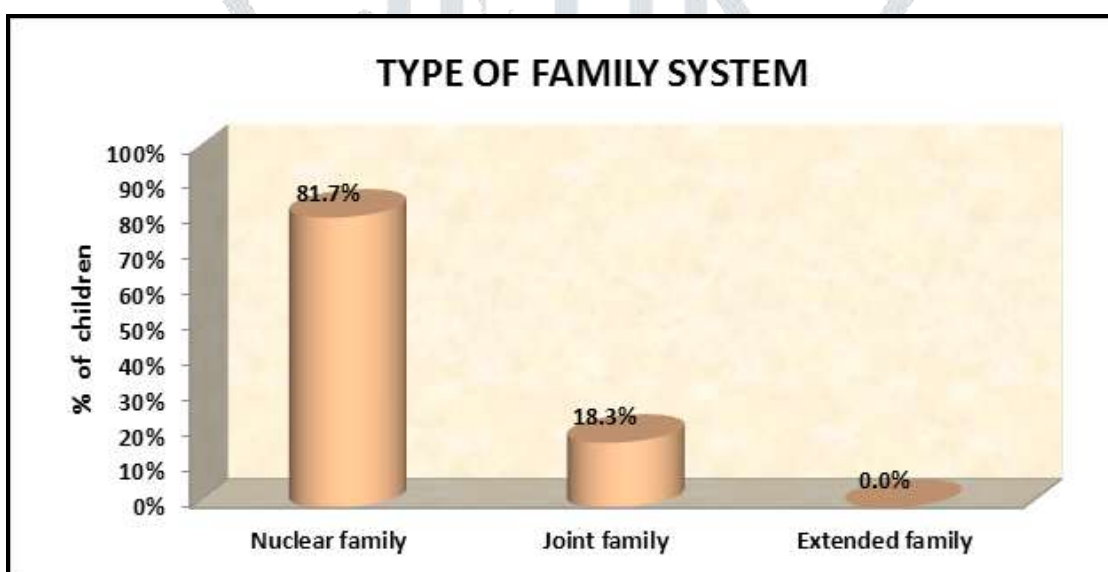


Fig:4.10. Type of family system wise distribution school children

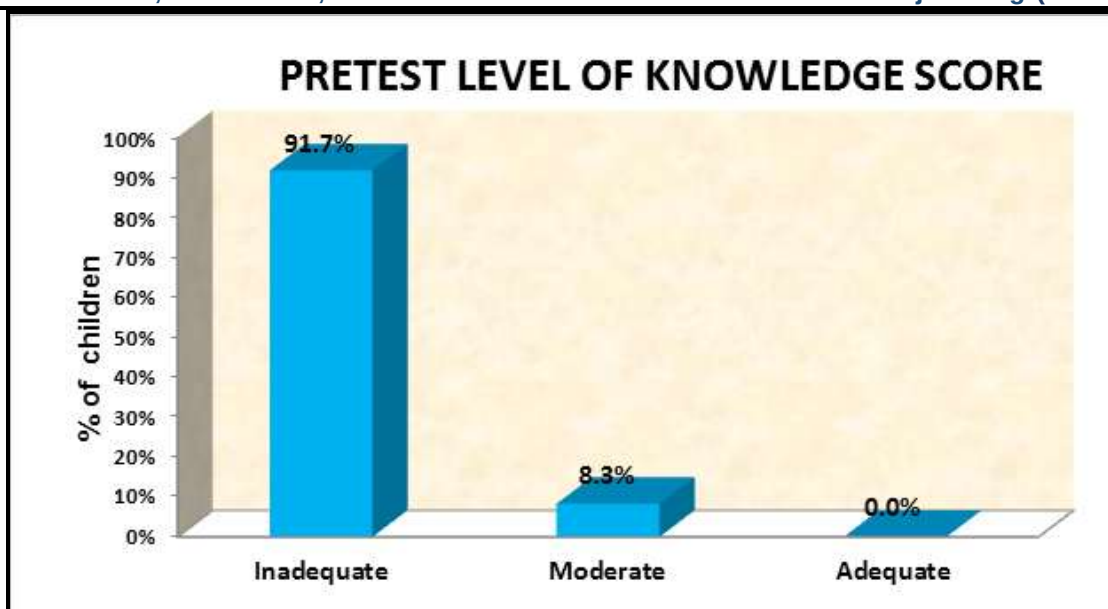


Fig:4.11. Pretest level of knowledge score of school children.

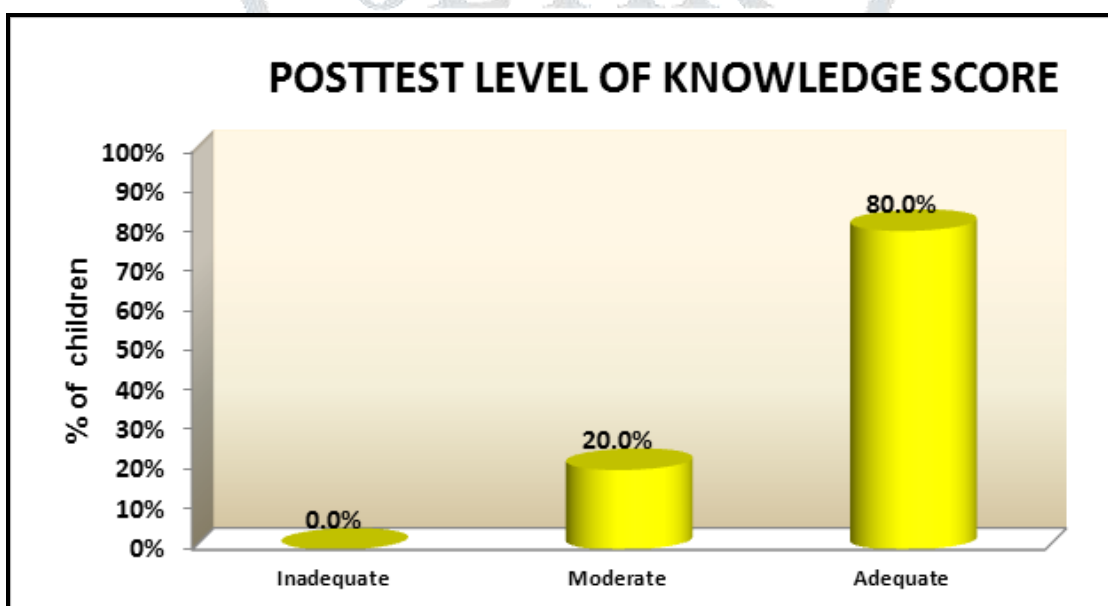


Fig:4.12. Post test level of knowledge score of school children.

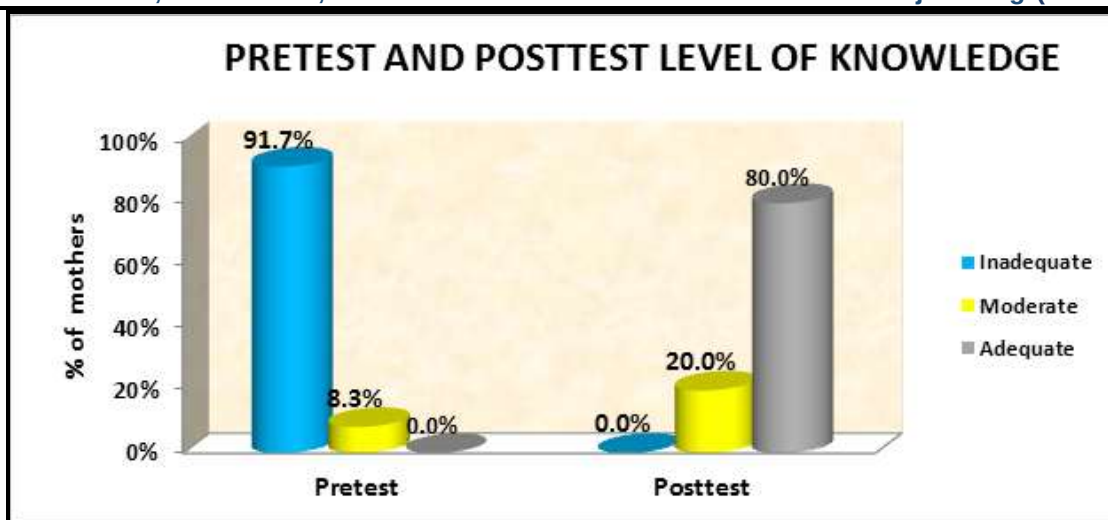


Fig: 4.13. Pretest and post level of knowledge of school children.

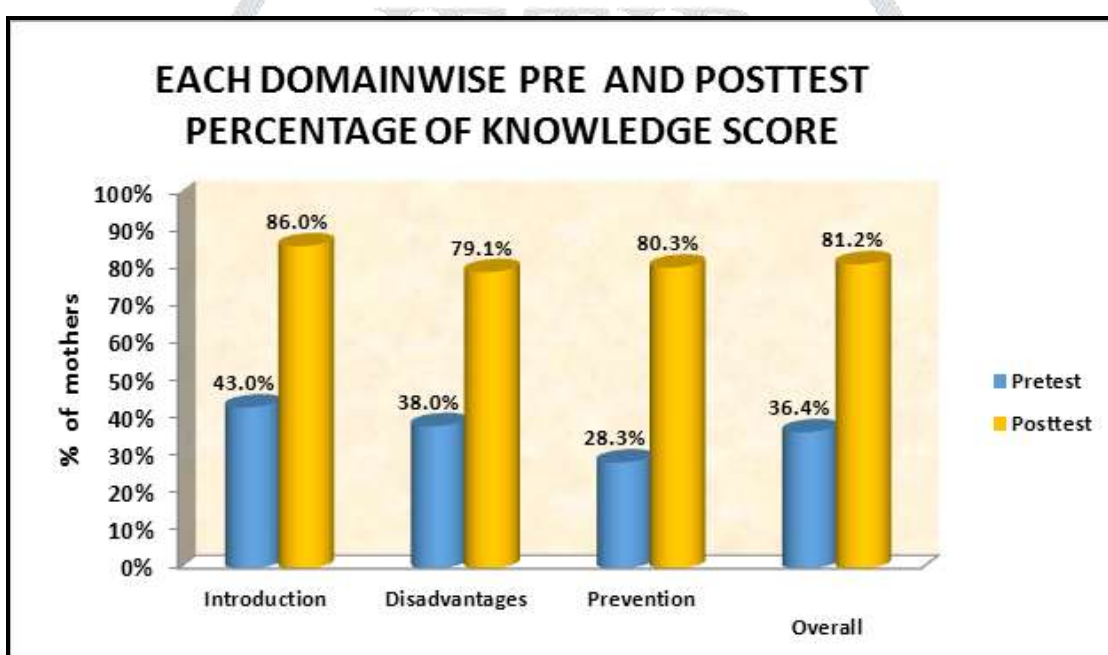


Fig:4.14.Domain wise pre and posttest percentage of knowledge score

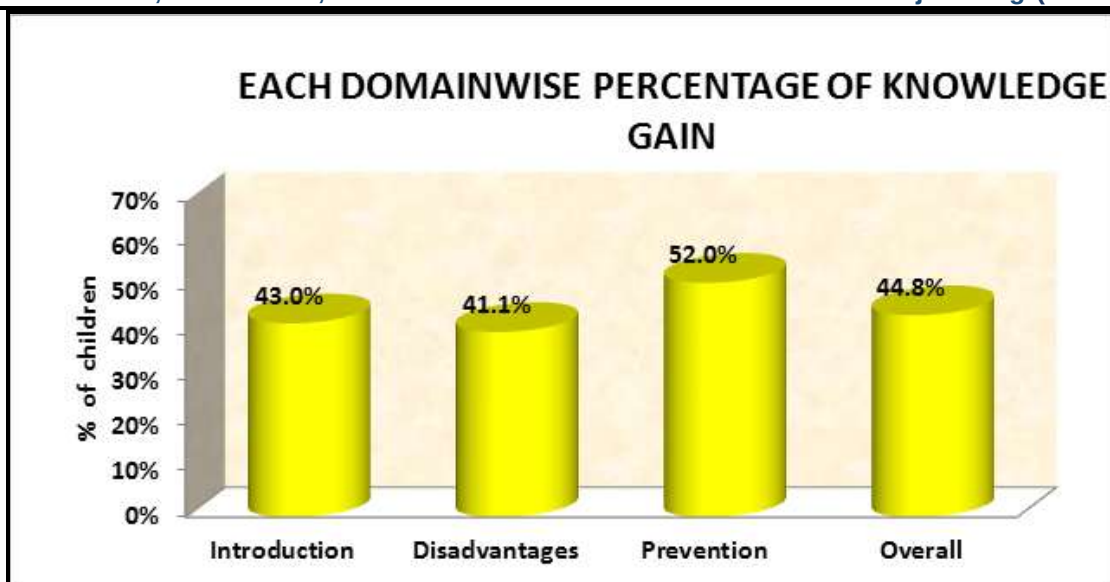


Fig:4.15. Domain wise percentage of knowledge gain

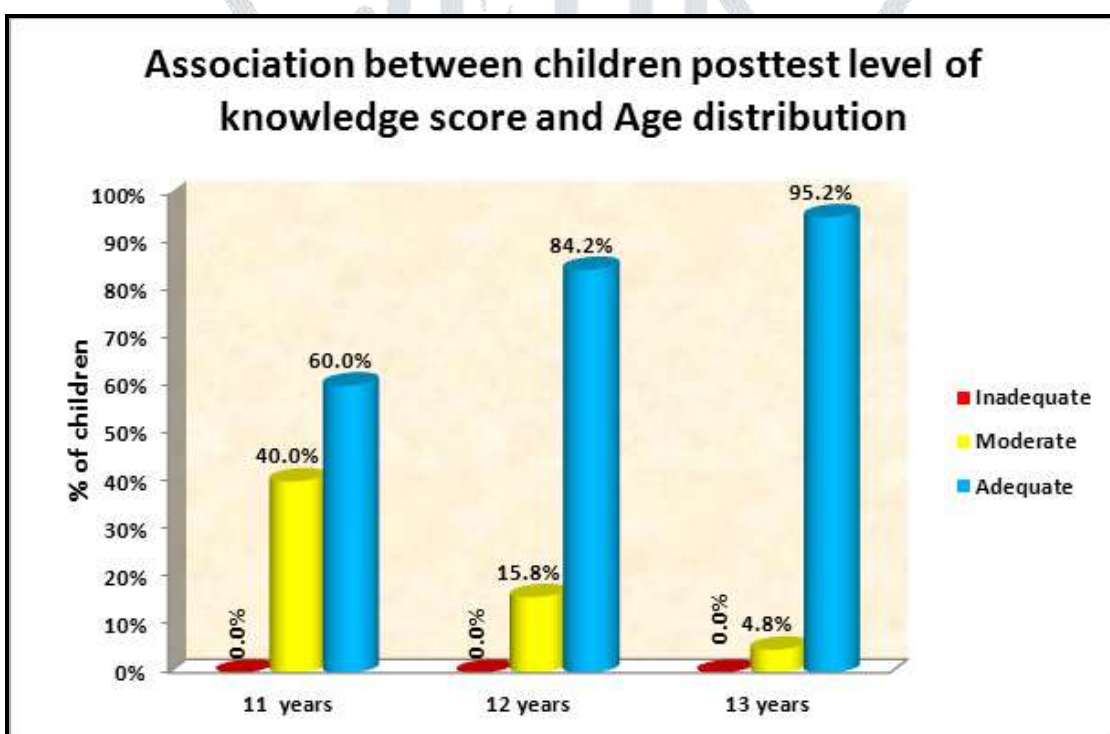


Fig:4.16. Association between children posttest level of knowledge score and age distribution

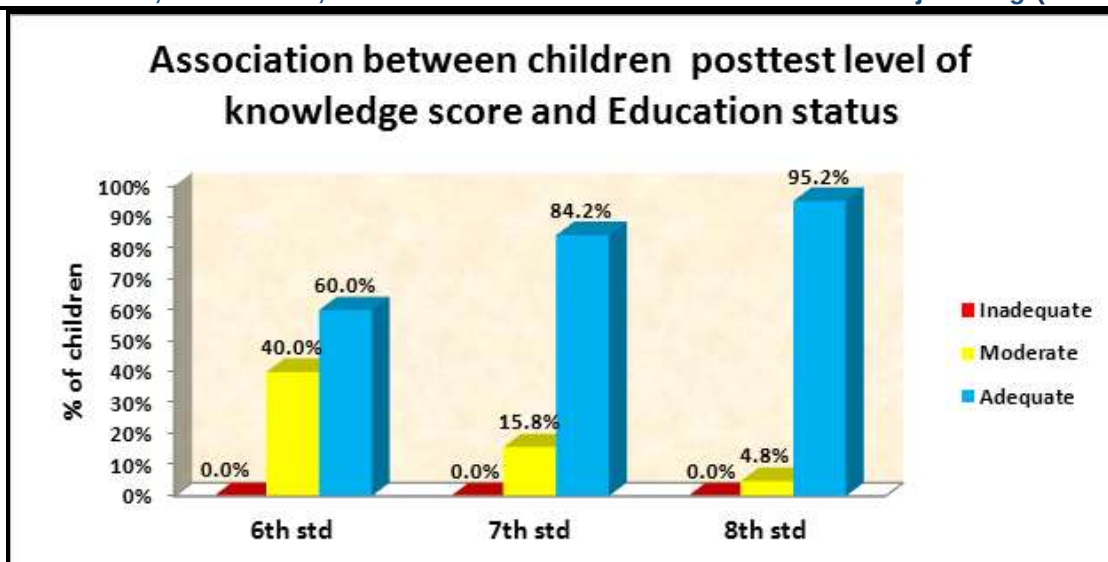


Fig:4.17. Association between children posttest level of knowledge score and education status

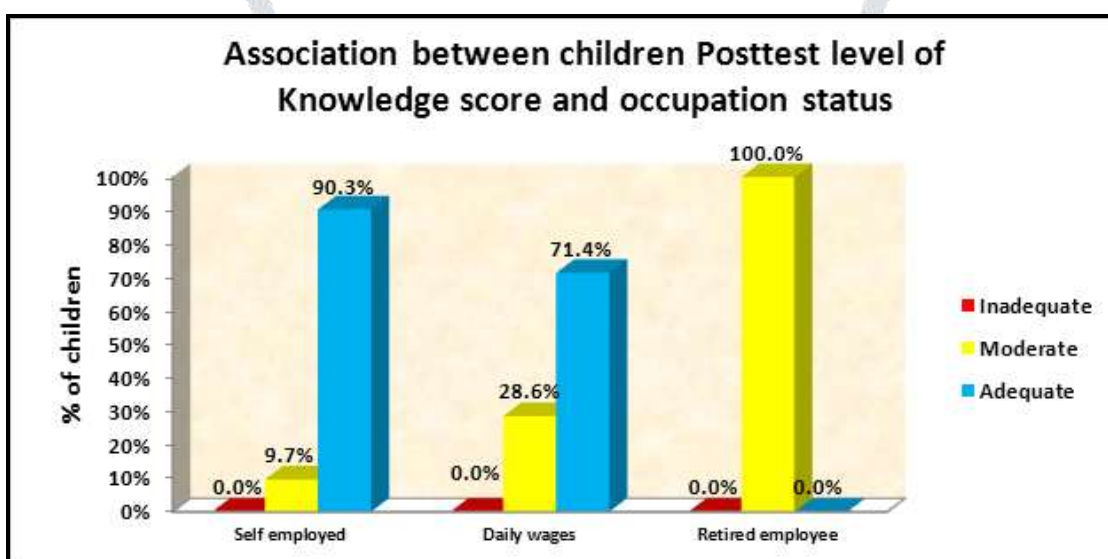


Fig:4.18. Association between children posttest level of knowledge score and occupation status.

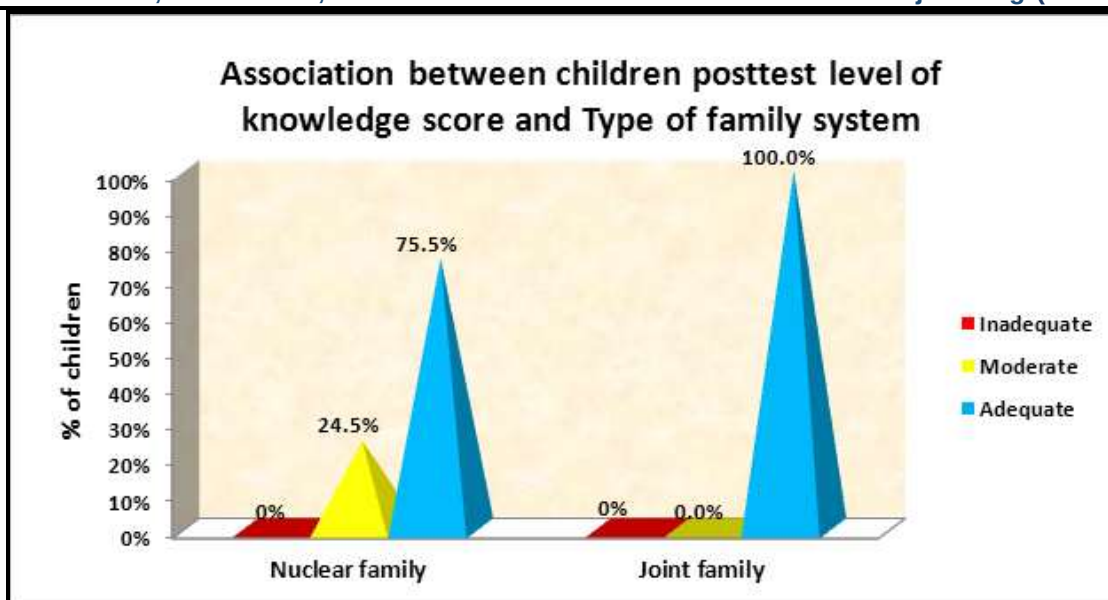


Fig:4.19. Association between children posttest level of knowledge score and type of family system.

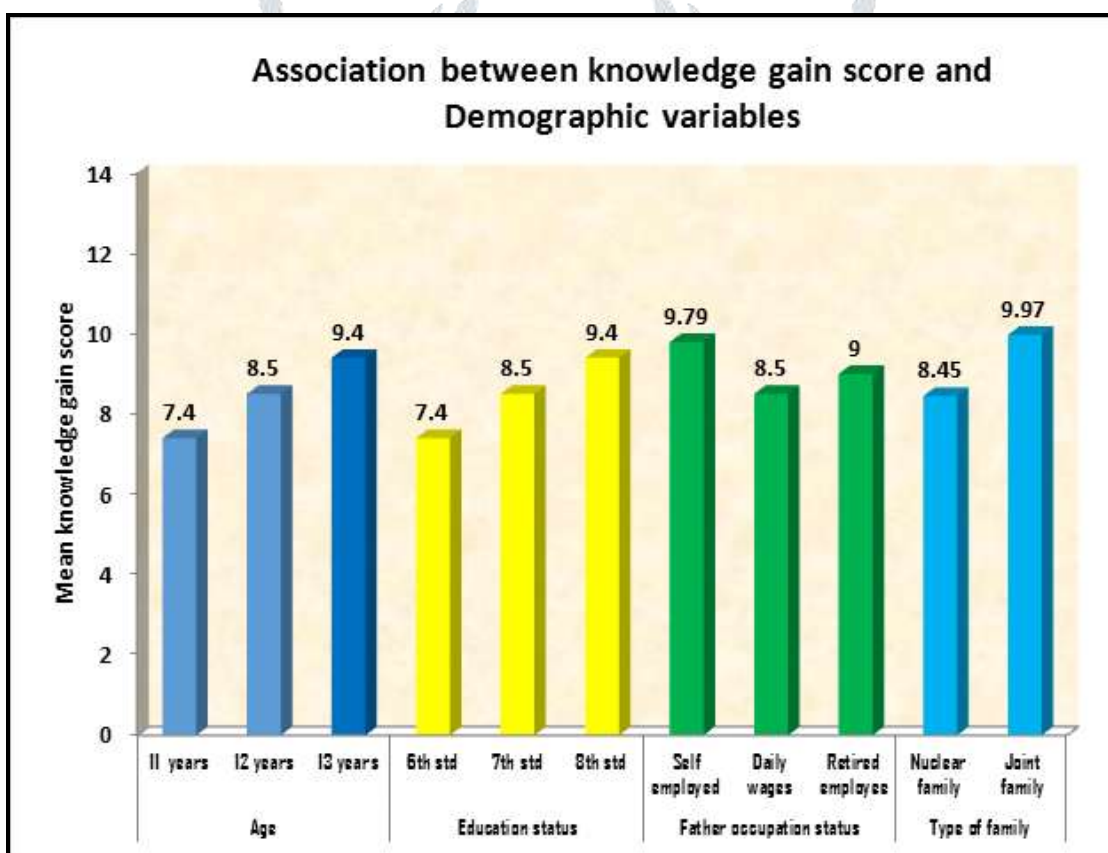


Fig:4.20. Association between knowledge gain score and demographic variables.

CHAPTER – V

SUMMARY OF THE STUDY FINDINGS

This chapter deals with the summary of the result and finding of the study.

6.1 Summary of the study findings

The study was conducted to ascertain the effectiveness of Video Teaching programme on ill effects of fire cracker accidents among school children. It was quantitative approach. The main objective of the study is to assess the level of knowledge with one group pre-test and post-test design. The study was conducted at Govt. Middle School, Medavakkam, Kanchipuram District. 60 school children were included in the study based on the inclusion criteria. Self administered questionnaire was used to determine the level of knowledge among school children.

6.2 : Major findings of the study

1. Findings related to Demographic variables

Out of 60 samples

- ❖ Majority of the students (90%) female children.
- ❖ Religion wise Hindu children (91.7%)
- ❖ Type of family (81.7%) belongs to nuclear family

2. Findings related to knowledge regarding ill effects of fire cracker accidents.

Out of 60 samples **In general information** : 0.0% were inadequate knowledge, 16.7% were moderate knowledge, 83.3% were adequate knowledge. **In disadvantages** : 0.0% were inadequate knowledge, 21.7% were moderate knowledge, 78.3% were adequate knowledge. **In prevention** : 0.0% were inadequate knowledge, 20.0% were moderate knowledge, 80.0% adequate knowledge. **Mean score** is inadequate knowledge is 0.0%, moderate knowledge is 20.0%, adequate knowledge is 80.0%.

3. Findings related to association with Demographic variables:

- ❖ There was significant association with the effectiveness of video assisted teaching regarding ill effects of fire cracker accidents and their age χ^2 value = 8.26 $P = 0.02^*$

- ❖ There was significant association with the effectiveness of video assisted teaching regarding ill effects of fire cracker accidents and their education χ^2 value = 8.26 $P = 0.02^*$.
- ❖ There was significant association with the effectiveness of video assisted teaching regarding ill effects of fire cracker accidents and their occupation of the father χ^2 value = 7.35 $P = 0.03^*$
- ❖ There was significant association with the effectiveness of video assisted teaching regarding ill effects of fire cracker accidents and their type of family χ^2 value = 5.56 $P = 0.02^*$

CHAPTER – VI DISCUSSION

The results of the study was discussed based on the objectives and the following supportive studies,

Objective –I To assess the pre-test and post-test knowledge regarding ill effects of fire cracker accidents among school children

In pre-test level of knowledge on ill effects of fire cracker accidents among school children, 91.7% of them had inadequate knowledge and 8.3% of them had moderate knowledge and none of them had adequate knowledge.

In post-test level of knowledge on ill effects of fire cracker accidents among school children, non of them had inadequate knowledge and 20.0 % of them had moderate knowledge and 80.0% of them had adequate knowledge.

The findings were supported by **Wees .B (2005)** that the overall mean score of pre-test was 7.27 with the S.D. **1.68**, where as in post-test the overall mean score of **16.23** with S.D. of **1.32**. the t-test value was 31.11* which is statistically at $p < 0.001$ level of significance. The study finding implied that education had a vital role in improving the knowledge of school children regarding fire cracker accidents.⁸¹

Objective – II To determine the effectiveness of video assisted teaching programme regarding fire cracker accidents among school children.

In pre-test level of knowledge on ill effects of fire cracker accidents among school children, 91.7% of them had inadequate knowledge and 8.3% of them had moderate knowledge and none of them had adequate knowledge.

In post-test level of knowledge on ill effects of fire cracker accidents among school children, non of them had inadequate knowledge and 20.0% of them had moderate knowledge and 80% of them had adequate knowledge. $X^2 = 56.25$ $P = 0.001***$

Briske, L. A (1998) conducted a retrospective study to evaluate three smoke detector promotion programmes. Participants were randomly selected at eight area Minnesota Cherokee country. The study result revealed that most of the person (76%) who receive the detectors were not utilizing because the detectors were not in working condition and also the batteries were either missing or disconnected and it was clearly stated that future programme to meet the current recommendation and standard of National Fire Protection Agency rather distributing smoke detectors.³²

Objective – III To find out the association between pre-test and post-test knowledge with their selected demographic variables.

- ❖ There was significant association with the effectiveness of video assisted teaching regarding ill effects of fire cracker accidents and their age x^2 value = 8.26 $P = 0.02^*$
- ❖ There was significant association with the effectiveness of video assisted teaching regarding ill effects of fire cracker accidents and their education x^2 value = 8.26 $P = 0.02^*$.
- ❖ There was significant association with the effectiveness of video assisted teaching regarding ill effects of fire cracker accidents and their occupation of the father x^2 value = 7.35 $P = 0.03^*$
- ❖ There was significant association with the effectiveness of video assisted teaching regarding ill effects of fire cracker accidents and their type of family x^2 value = 5.56 $P = 0.02^*$.

H₁ There will be significant difference between pre-test and post-test knowledge among school children regarding ill effects of fire cracker accidents.

In pre-test school children had 1.70 score where as in post- test they had 4.82 score, so the difference is 3.12. This difference between pre-test and post-test is large and it is statistically significant. Hence Research Hypothesis H₁ is accepted.

H₂ There will be significant association between pre-test and post-test knowledge among school children regarding ill effects of fire cracker accidents with selected demographic variables.

The association between post-test level of knowledge score with demographic variables reveals elder children, more standard studying children, self employed fathers children and joint family system children are gained more knowledge than others. It was confirmed using chi square test. Hence Research Hypothesis H₂ is accepted.

CHAPTER-VII

CONCLUSION AND RECOMMENDATION

This chapter deals with the implications, recommendations and conclusion of the study.

7.1 Implications

Nursing practice

The study findings related that there is a relationship between the knowledge and nursing practice on ill effects of fire crackers accidents among the school children.

- ❖ The community health nurse can be resource personnel for the school teachers and they can also educate them at the gross root level in imparting knowledge regarding ill effects of fire crackers accidents among the school children.
- ❖ The community health nurse has to educate the mothers of the school children regarding ill effects of fire crackers accidents in rural areas.
- ❖ Training and in-service education to the school teacher to utilize the knowledge in early prevention of fire crackers accidents among the school children.
- ❖ Posters can be displayed regarding previous incidents to increase the knowledge of the community.
- ❖ Not only nurses but all the health care providers such as auxiliary nurses and midwives, village health guides, nurses working in community center should provide in-service education regarding ill effects of fire crackers accidents.

Nursing education

The study clearly concluded that the knowledge of the school children regard ill fire crackers accidents is adequate.

- ❖ To provide knowledge, the nursing personnel need to be equipped with adequate knowledge and conduct mass health programme on ill effects of fire crackers accidents.

- ❖ The community health nursing curriculum needs to be strengthened and should include more content towards school based health services which should enable the students to know about the ill effects of fire crackers accidents.

Nursing administration

- ❖ Majority of industrial hazards are preventable in nature.
- ❖ Nurses involved in industrial health administration should formulate policies, regarding specific job description of industrial health nurses.
- ❖ Nursing service administration should be empowered regarding the policies in relation to health and safety.
- ❖ The nurse administrator has to incorporate with the information, education and communication process.

Nursing Research

- ❖ The findings of the study help the professional nurses and the student to develop inquire by providing a base .
- ❖ The study provides baseline for conducting similar studies in different settings.

7'2 Limitation:

1. Generalization of the study was limited in the samples only.

7.3 Recommendations

On the basis of the present study the following recommendations have been made for further study.

- ❖ The study can be repeated on the large scale sample to validate and for better generalization of the finding.
- ❖ Descriptive study can be conducted to assess knowledge, of school children regarding ill effects of fire crackers accidents.
- ❖ Comparative study may be conducted to find out the similarities or differences between the knowledge and practices of urban and rural school children.

- ❖ Video Assisted Teaching programme on ill effects of fire crackers accidents can be compared with other teaching strategies.
- ❖ School syllabus may include topic related to ill effects of fire crackers accidents.
- ❖ Education can be given to school teachers on ill effects of fire crackers accidents who are the sources of knowledge for children.
- ❖ A study can be carried out using other strategies like Computer Assisted Instruction & structured teaching programme

7.3 Conclusion

School children's are having decreased level of knowledge, regarding ill effects of fire crackers accidents and also they don't know the effective way of maintaining their fire accidents which leads to complication diseases. Increasing level of knowledge is very much important to prevent such complication and it may be done through Video Assisted Teaching.

The finding of this present study revealed that Video Assisted Teaching is effective in improving the knowledge regarding ill effects of fire crackers accidents. It is a safe and easiest method of teaching only. This study highlights the need for adopting this type of teaching for preventing fire cracker accidents and complications among school children.

The study findings implied that the education has a vital role in improving the knowledge of the students regarding fire cracker accidents. Since school education is an integral part of medical and prevent accidents, nurses can play an important role in health educational programme, making the children an important channel for disseminating the health information to the families and the communities. Today's students are tomorrow's leaders. The student community needs to be strengthened with the treasure of knowledge especially with health related issues.

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