



“EFFECTIVENESS OF VIDEO ASSISTED TEACHING ON PRACTICE REGARDING EXERCISES TO SUPPORT SPINE AND PREVENT NECKPAIN AMONG SCHOOL CHILDREN OF SELECTED SCHOOL.”

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ABSTRACT

INTRODUCTION:

Providing care and comfort to the child is most important responsibility. The need for accuracy in providing comfort to children is greater than that of an adult. As this has become quite a norm, many of them are neither as aware nor as concerned as they should be of the ill effects of this practice on their health. At a certain point, they are bound to complain about extreme pain on their backs, shoulders, and neck muscles because of slouching or straining for long period of time. The impact of exercise is straightforwardly identified with the relaxation and comfort of children. A proper exercise is generally revealed as being ideal for meaning of the best possible relaxation and comfort.

MAJOR FINDINGS OF THE STUDY:

According to age of the school children of selected school, 60% of them were from age group 9-11 years and 40% from the 12-14 years of age. 56.67% of school children were male child and 43.33% were female child. None of them were from urban area and all 100% were from the rural area. 58.33% of the school children of selected school answered yes and 41.67% of them answered no to the question do you have neck pain. To the question Do you have knowledge regarding exercises for neck pain, 5% of the school children of selected school answered yes and 95.00% of them answered no. As per the source of knowledge 100% answered that the source of knowledge was relatives. At the time of pre-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, all 100% of school children got the remark try harder. Average practice score at the time of pre-test was 11.81 with standard deviation of

1.09. The minimum score of practice was 10 with maximum score of 15. At the time of post-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, 75% of school children were in the group doing great and 25% of them were in the winner group. Average practice score at the time of pre-test was 34.90 with standard deviation of 0.87. The minimum score of practice was 32 with maximum score of 36. At the time of pre-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, all 100% of school children got the remark try harder. Average practice score at the time of pre-test was 11.81 with standard deviation of 1.09. The minimum score of

practice was 10 with maximum score of 15.

At the time of post-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, 75% of school children were in the group doing great and 25% of them were in the winner group. Average practice score at the time of pre-test was 34.90 with standard deviation of 0.87. The minimum score of practice was 32 with maximum score of 36. The comparisons of the pre-test and post-test means of the practice were done by the paired t test. The pre-test average score was 11.81 with standard deviation of 1.09. The post-test average score was 34.90 with standard deviation of 0.87. The test statistics value of the paired t test was 130.6 with p value 0.00. The p value less than 0.05, hence null hypothesis is rejected. That means there is significant difference in pre and post-test practice.

CONCLUSION:

From the study finding it is concluded that video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school was effective. However, the effect of exercises to support spine and prevent neck pain need to be explored further.

CHAPTER I INTRODUCTION

The first case of COVID-19 pandemic in the Indian state of Maharashtra was confirmed on 9th march 2020. On the evening of 24th march 2020, the government of India ordered a nationwide lockdown for 21 days (phase 1), limiting movement of the entire 138 crore population of India as a preventive measure against the COVID-19 pandemic in India. On 14th April, prime minister Narendra Modi extended the nationwide lockdown until 3 may 2020 (phase 2). With a conditional relaxation lockdown was extended till 31st may 2020.

The Covid-19 pandemic has changed our lives. Governments are taking precautionary measures to spread this infection of novel corona virus. In this emerging society one thing is also evolving which is our education system.¹

Colleges, Universities and schools are closed with no certainty to when it will be open. Though there is need to adopt new changes in education system. Technology has become the life saver for the students in this time. There are several sets of guidelines and plans issued by the government. The National Council of Education Research and Training (NCERT) and Central Board of secondary Education (CBSE) for this purpose. Online classes, entrance tests, Boards examinations, admissions, competitive examinations are the new normal for India. E learnings are the new sources for both students and teachers. The sources which are strictly prohibited to be brought up in the schools and colleges are now the only medium through which teachers can interact with their students.¹

The lecture videos, digital edition of textbook and links to the other study material has been provided to all the students. E-Learning found out to be more flexible to the students to grab the knowledge.¹

Approximately 264 million children and adolescent are not in school, and this pandemic made this situation further worst. As the COVID-19 pandemic spreads, there has been an increasing move towards teaching online because of shutting down of the schools, colleges and universities for an indefinite time as the only option left. Informal and non-formal education is also tremendously affected. However, it is a well-established assumption that no pedagogical approach can replace the peak position of formal education due to having teacher taught direct interaction. But, the aftermath of COVID-19 crisis, online education became a pedagogical shift from traditional method to the modern approach of teaching learning from classroom to zoom, from personal to virtual and from seminars to webinars. Previously, e learning distance education and correspondence courses were popularly considered as a part of non-formal education, but as of now it seems that it would gradually replace the formal education system if the circumstances enduringly persist over time adopting this new teaching learning method has imposed its own challenge on physical fitness which we need to tackle to sustain for long-term anticipating the course of pandemic.²

During the nationwide lock down implemented by the government of Maharashtra due to the coronavirus, has led to the various changes in the overall activities of the lifestyle. With the start of the school year approaching, many students are returning to e-learning formats due to the effect of Covid-19. Students are commonly not used to sitting in front of a computer all day for school learning. Within the in-person environment, students aren't always in front of a computer screen and generally move in the classroom or when they switch classrooms. With e-learning at home, students may be more sedentary. Neck and back pain complaints are often seen after periods of prolonged sitting, especially with poor posture.³

Physical fitness is vital for any profession we are in be it a student or a teacher. Providing care and comfort to the child is most important responsibility. The need for accuracy in providing comfort to children is greater than that of an adult. As this has become quite a norm, many of them are neither as aware nor as concerned as they should be of the ill effects of this practice on their health. At a certain point, they are bound to complaint about extreme pain on their backs, shoulders, and neck muscles because of slouching or straining for long period of time.

Neck and shoulder pain is relatively common among children and teenagers and has a negative impact on their physical and psychological health⁴. Spinal pain in the pediatric population is a significant health issue, with an increasing prevalence as they age. Pediatric patient attends for chiropractor care for spinal pain, yet, there is a paucity of quality evidence to guide the practitioners with respect to appropriate care planning.

Neck pain is often temporary and clears within 1 or 2 days without treatment. However, sometimes neck pain is chronic and affect a child's quality of life, social activities, and education. It is crucial to listen the child when they describe their symptoms to help identify and treat the underlying cause of their neck pain.⁵

Muscle strain in neck may due to rough play or looking down for extended periods, such as while on the phone or computer. Neck pain is usually caused by a muscle strain due to sleeping awkwardly or turning their head quickly, sitting in front of a computer for long period of time, playing sports or doing other activities.⁶ Schoolbag carriage is a common occurrence and has been associated with musculoskeletal discomfort in children.⁷

Maj S Bakhtiar Choudhary et.al. (2020), conducted a study to assess the effects of ergonomic settings on children spending more time on devices. About 186 children (aged between 10-18 years of both sexes) and their parents volunteered to respond to online survey with a questionnaire covering awareness of parents on ergonomics, problems encountered by children on 'make-shift' workplace adjustments, hours of sitting, screen time, eye-monitor ergonomics, backrest, footrest, keyboard & mouse ergonomics, breaks during work and gadgets they used. Problems encountered by the children were analyzed. This was conducted 60 days after the first day of lockdown in Hyderabad (23 March 2020). Children spent longer hours on gadgets, on laptops (58%), android / apple phones (20%), desktops (12%) and tablets (10%). Their content on gadgets was 45% curriculum, 35% games and 20% others. Study revealed that parents were unaware of ergonomics and effects on their children. Very few parents understood the correct sitting posture (6%), eye-monitor ergonomics (1%), laptop ergonomics (3%) and (38%) importance of breaks. About 21% of subjects suffered upper back pain, 18% lower back pain, 13% eye strain, 11% headache, 6% had irregular sleep and 6% behavioral changes. Effects of wrong posture during work, repetition, loading and probable cause for pain were discussed in the paper.⁸

In the current scenario of COVID-19 pandemic study from home have caused a "pain-demic" for upper and lower back. Fortunately, a little exercise and a little workspace optimization go a long way.

Exercise is often pointed out as an effective form of treatment in the clinical management of chronic neck pain (CNP).⁹ Exercise reduces the risk of LBP and associated disability, and a combination of strengthening with either stretching or aerobic exercises performed 2-3 times per week can reasonably be recommended for prevention of LBP in the general population¹⁰. The impact of exercise is straight forwardly identified with the relaxation and comfort of children. A proper exercise is generally revealed as being ideal for meaning of the best possible relaxation and comfort.

Thus, a use of particular exercise and valuable means of providing muscle strengthening must be produced keeping in mind that the end goal is to improve the disability reduce pain and promote comfort to the child.

BACKGROUND OF THE STUDY:

Neck pain is common amongst the pediatric population including the children and adolescent. It is a significant health issue where 52% of pediatric patients report musculoskeletal symptoms over a one-year period. Pain is most common but spinal pain in pediatric patients with 60% reporting neck pain is persisting after two years.¹¹

According to the article published by Shabnam Joshi (2021) in journal of musculoskeletal research, the sudden lockdown due to COVID-19 in India led to closure of schools and colleges. This resulted in an increased usage of online mode of study, with a more sedentary lifestyle. The survey study aimed to analyze the prevalence of any musculoskeletal problem in students and teachers due to the same. A Google Form was distributed by a snowball sampling technique using various social media platforms. A total of 715 responses were received. Maximum respondents were in the age range of 18–25 years. Eighty eight percent of participants in the survey were involved in the online mode of education, with 60.8% experiencing some form of musculoskeletal pain or discomfort; 71% of people believed that the cause of pain was online working. Neck pain (51.3%) followed by low back pain (33.4%) and headaches (29.8%) were commonly reported. University teachers reported maximum pain followed by university students, school teachers and school students. Of all the respondents, 60.8% people admitted to adopting awkward postures while at work, whereas only 27.6% of them exercised to relieve pain and discomfort. There is an urgent need to develop appropriate intervention strategies for people involved in sedentary online work to prevent the occurrence of musculoskeletal pain and discomfort. Physical therapy can play a major role in managing this lifestyle hazard.¹²

Data from the new Indian express (2021) Doctors pointed out that there is easily a 50 per cent increase in pediatric orthopedic issues like pain in the neck, shoulder, upper back and limbs. While orthopedic issues are common among adults, doctors are noticing a new trend with children in the age group of 9-14 years complaining of orthopedic problems. Doctors pointed out that there is easily a 50 percent increase in pediatric orthopedic issues like pain in the neck, shoulder, upper back and limbs. The reason is lack of activity and improper posture while attending online classes. In one case, a 14-year-old boy had severe back pain and consulted a doctor at Fortis Hospitals, Rajajinagar. The doctor prescribed painkillers, and when the pain persisted, he was advised physiotherapy. After 30 days of physiotherapy, his condition improved and he was asked to take up indoor games to stay active, and prescribed calcium and Vitamin D tablets for three months. Dr Vinay Kumaraswamy, Consultant - Orthopedics & Joint Replacement Surgery, Fortis Hospitals, who treated the patient, said, "I have never come across children coming in with back pain or neck pain. Usually such complaints are among adults, often software engineers who work long hours. Now cases are increasing in the pediatric age group, as due to the pandemic, there is lack of activity among children. The body does not get Vitamin D as they are unable to go out and play under the sun. Many sit on the floor to attend online classes, instead a table and chair will correct their posture. The use of mobile phones strains their necks and eyes." Dr Jayanth S Sampath, Senior Consultant Pediatric Orthopedic Surgeon, Rainbow Children's Hospital, said he has been seeing 3 to 4 children a week with neck pain, lower back pain and general body pain. "Due to lack of activity and exposure to sunlight, prolonged sitting for online classes, we are seeing 'adult symptoms' in children. Weight gain is also a significant issue due to lack of activity. We encourage children to perform stretching exercises for all lower limb joints, avoid sitting for more than an hour at a time, restrict use of portable electronic devices, correct Vitamin D deficiency, and take up whatever physical activities are possible in this situation," he said. Dr Prashanth Inna, Consultant – Pediatric Orthopedic Surgery, Manipal Hospitals, Old Airport Road, said children's agility has also come down. "Earlier, children would come in with minor injuries, but now with agility going down, they are reporting bad injuries," Dr Prashanth said. If children remain like this for a few more months, their condition can get chronic, doctors warn.¹³

Data from the health site, by longjam Dineshwari (2021), Kerala. The Covid-19 pandemic has brought many changes in our lives, from our eating habits to how we learn and work. Students and educators have been forced to adapt to remote classes and embrace new virtual learning apps, while companies allow employees to work from home. While some see benefits in virtual learning, others fear about its impact on children's health. Kerala State Education Minister V. Sivankutty on Monday informed the state Assembly about the health issues facing school children due to the online classes.

Citing the results of a study undertaken by the State Council of Education Research and Training, Sivankutty said that the school children who are now in their second year of online classes are experiencing some health issues. In Kerala, regular classes in educational institutions were closed in March 2020 and since then it has been on an online mode of education.

"Studies showed that 36 per cent of the students are suffering from headache and neck pain while 28 per cent have reported pain in the eyes," he told the state Assembly. Sivankutty underscored the need to make parents aware of the use of digital equipment, and stated that more councillors will be appointed in schools.¹⁴

An article by Farheen Hussain Times of India (2020), Bengaluru. Online classes have, literally, become a pain in the neck for students, thanks to bad posture and lack of physical activity.

Take Shwetha N, 14, for example. In August, she was still trying to adjust and cope with the challenges of virtual classes when she began experiencing excruciating pain in her neck and back. "My right shoulder would constantly hurt," Shwetha said. "At first my parents thought maybe it was the way I slept, but the pain remained for almost a month and we decided to consult our family doctor." Shwetha says her doctor suggested some exercises and asked her to follow a few precautions. She says she now feels much better.

Dr Kiran Chouka, senior orthopedic and joint replacement surgeon at Apollo Hospitals, Seshadripuram, Bengaluru, told TOI he now has eight and 10-year-olds approaching him with complaints of back pain. "Earlier, I would stress the need for comfortable footwear and mattresses for complete well-being and support of the body," Dr Chouka said. "But now, with the pandemic forcing people to work from home, I advise ergonomic chairs with proper elbow support for both children and adults."

Dr Chouka said there is an increasing incidence of trapezitis or stiffness around the neck among children because of lack of exercise and movement. He advises body movement short walks and stretching at regular intervals to avoid it. Experts say there is more than a 20% increase in the number of children reaching out to doctors with complaints of neck and back pain.

Dr Kumardev Arvind Rajamanya, consultant orthopedic surgeon, Manipal Hospitals, Whitefield, said, in the past, the overwhelming majority of such cases were adults in the age-group of 30-55 and senior citizens, but in the past few months, children as young as 10 years are approaching him with similar complaints. "Before the pandemic hit, only children who constantly used gadgets had such issues," Dr Kumardev said. "Spending hours together hunched over phones and tablets can lead to severe back and neck issues. I always ask my patients to lift their heads and look away for a few minutes before resuming what they are doing. Ergonomic chairs with elbow support and placing gadgets at eye-level are also helpful." He said parents must ensure their children take a break every 15 minutes. "For every 10 minutes, one must stand for a minute," he says.

Dr Srinivas Chirukuri, orthopedic surgeon and CEO, Prakriya Hospitals, said many children adopt wrong posture which leads to multiple skeletal problems. "A child's bones and muscles need the right stimulus to grow," Dr Chirukuri said. "Bad posture and lack of physical activity leads to problems like being overweight, lack of stamina, anxiety, attention deficit disorders and poor mental functioning. Boredom has increased. The current scenario is depriving kids of enough opportunities to grow." He said addiction to social media and excess screen time is leading to depression and poor physical and mental growth. "Parents must find ways to engage their children so that they have the right balance of education and physical activity," Dr Chirukuri said.¹⁵ Musculoskeletal pain (MSP), is a public health problem in both genders and in all age groups all around the world. It is considered as a frequent and costly occupational health problem in both developed and developing countries. MSP may cause considerable personal discomfort due to pain, disability, impaired quality of life and time lost from work in adulthood.

Hauda Ben Ayed (2019) conducted a cross sectional study, Musculoskeletal pain (MSP) is a public health problem among school-adolescents. This study aimed to identify the prevalence, risk factors and consequences of neck, shoulders and low-back pain among school-adolescents. School-adolescents aged from 12 to 18 years between October 2017 and February 2018 in South of Tunisia were recruited. Eligible participants were randomly selected and were asked to respond a four-section questionnaire. Factors independently associated with MSP were determined through multivariate logistic regression analysis. Results: Among 1221 enrolled subjects, shoulders, low-back and neck pain were reported in 43%, 35.8% and 32%, respectively. Multivariate analysis showed that independent risk factors of neck pain were female gender (Adjusted odds ratio AOR=1.55; P=0.002), using computer ≥ 4 hours/week (AOR=1.50; P=0.010), too low desk (AOR=2.30; P<0.001) and carrying schoolbag ≥ 60 minutes (AOR=1.58; P=0.008). Female gender (AOR=3.30; P<0.001), BMI ≥ 25 Kg/m² (AOR=1.6; P=0.018), playing videogames ≥ 2 hours/day (AOR=2.37; P<0.001) and schoolbag to body weight $\geq 10\%$ (AOR=1.46; P=0.026) were independently associated with shoulders pain. For low back-pain, independent risk factors were high-school grade (AOR=2.70; P<0.001), playing videogames ≥ 2 hours/day (AOR=1.83; P<0.001), watching TV ≥ 12 hours/week (AOR=1.5; P=0.016), too low seat backrest (AOR=1.4; P=0.005) and too far seat-to-black (board) distance (AOR=1.5; P=0.041). School adolescents consumed drugs for MSP in 19.5%, had sleep disturbance in 34% and aggressive

behaviors in 22.8%. The prevalence of MSP was substantially high among school-adolescents and their associated risk factors included sociodemographic factors, leisure activities and classroom furniture. An ergonomic specific and behaviour-based school program is urgently needed.¹⁶

From the above perspective, researcher aimed, to primarily identify the prevalence of neck, shoulders and low-back pain occurrence among school children, secondly to investigate their potential risk factors and finally to assess their consequences on physical and social life.

NEED FOR THE STUDY:

It's that time of year again: "Back to School". After a few months of summer fun, this season of new beginnings bring along activities to child's body who might find out of practice, including some that could strain student's spines. One of the most well-known enemies to students during the first few weeks of school is back pain. Stuffed with new text books, notebooks, calculators, pens and pencils. Students haven't been accustomed to carrying that kind of weight on their spines in months. Also due to Covid and home schooling a lot more school students are seen with shoulder and neck pain.

The International Association for Study of Pain (IASP) defines pain as "An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage." It further states that "pain is always subjective, and each individual learns the application of the word through experiences related to injury in early life."

For people suffering from pain, their initial response is to avoid activity and seek rest. And yet exercise therapy is often prescribed as a treatment option to manage pain. There are known benefits of exercise and regular physical activity.¹⁷

Pavithra Rajan (2013), stated that Musculoskeletal health in schoolchildren is a global health problem. The objective of the current study was to assess ergonomic behavior and musculoskeletal health in urban poor schoolchildren in Pune, India. Sixty-five (29 male students) slum dwelling schoolchildren were assessed for their ergonomics using a validated and reliable tool. Average age was 13 years. Out of 65 students, 36 reported presences of musculoskeletal pain. In addition, 78.5% had bad ergonomics when lifting books. Sitting posture was poor in 67.7%, while 50.8% demonstrated bad posture while using a computer. As far as the female students were concerned, it was seen that out of 36 students, 55.6% complained of presence of pain. Out of the 20 students who reported pain, 70% had a score lower than 7.5 on ergonomic score assessment (indicative of bad ergonomics). When the male students were considered, out of 29 students, 65.5% reported presence of pain. Out of the 19 students who reported pain, close to 79% demonstrated bad ergonomics. There is presence of musculoskeletal aches and pains in this underprivileged section of the society, including demonstration of bad ergonomics and postures while performing activities in school. Thus, musculoskeletal health problems exist in urban slum schoolchildren. It is important to identify health problems at an early stage in both boys and girls. Children are the future of the nation and hence, identification of health issues early in life and preventing them from becoming chronic is of utmost importance.¹⁸

Joseph John et. al (2021), conducted a Cross-sectional study to find the prevalence of musculoskeletal pain among school-going children and its relationship with backpack weight.

This study was carried out among school-going children from grade 6 to 10 with age of 10 to 16 years from an urban and rural location. Schools were selected randomly from all enlisted schools in the district of Khurdha, Odisha state of India. A structured questionnaire was administered to assess symptoms of musculoskeletal pain. Anthropometric measurements along with backpack weight were taken. Chi-square test was performed for categorical variables and Student's *t*-test for continuous variables. Multivariate regression analysis was performed to identify

factors with maximum effect on musculoskeletal pain. The prevalence of musculoskeletal pain was 18.8% in the preceding year. Backpacks weights were higher among children of urban schools as compared with rural areas. Children from urban schools were more likely to have pain than those from rural schools (OR 1.88, 95% CI 1.41–2.49). Those children with a backpack weight more than 10% of body weight had almost twice the risk of musculoskeletal pain compared to backpack weight less than 10% (OR 1.91, 95% CI 1.4–2.6) in univariate analysis whereas no significant association was found on multivariate analysis. The prevalence of musculoskeletal pain was high in school-going children. In children, carrying higher backpack weight, and a higher percentage of the backpack to body weight had a significant association with musculoskeletal pain. Gender, height, body mass index, and backpack weight to body weight > 10% had no association with musculoskeletal pain.¹⁹

Sharma Manisha et.al. (2021), conducted a study with the aim of this study is to analyse the effect of online classes on the mental and physical well-being of students due to the COVID-19 pandemic. The coronavirus has shut down all schools and universities over the globe. With idiosyncratic upsurge of online learning, nowadays, teaching is undertaken remotely on digital platforms by the use of laptops and mobile phones. Many researches have shown that the excessive or prolonged use of screens can impact mental and physical health. The mental and physical affections include stress, depression, sleep disorders, impact on eyesight, postural pain, hand disabilities, and musculoskeletal disorders. The survey was conducted on an online mode through Google forms. All gender college-going students within the age group of 18–25 years undergoing online classes for a minimum of 1 month were included in the study. The assessment of mental health was done using the Perceived Mental Stress Test Scale (Psychological Stress Test) and the Patient Health Questionnaire, whereas for the assessment of the physical health, the Neck disability index, and the Oswestry low back pain disability index was used. Karl Pearson's correlation coefficient was applied to find the correlation between the duration of online classes and stress, depression, neck, and back disability. A significant effect of online classes was found on the mental and physical health of students, 57.3% of population had moderate stress, 32% of population had mild depression, 48% of population had mild neck pain, and 41.3% of population moderate back pain. Students' mental and physical health has been affected as a result of longer duration spent online on laptops and phones for classes.²⁰

Isha Sikka et.al (2020), conducted an experimental study, contemporary societies, computer use by children is a necessity and thus highly prevalent. Using computers for long hours is related to a higher risk of computer-related muscular disorders like forward head posture (FHP) and neck pain (NP). Deep cervical flexor (DCF) muscles are important head-on-neck posture stabilizers; thus, their training may lead to an improvement in FHP and NP. The aim of this study was to determine if 4 weeks of DCF training is effective in alleviating NP, improving FHP, and functional status in adolescent children using computers regularly, a pre-test post-test experimental group design was used. Subjects were randomly assigned into the experimental group (receiving DCF training and postural education) and the control group (receiving postural education only). 30 subjects with a mean age of 15.7 ± 1.725 years with NP and FHP using computers regularly participated in the study. Dependent variables were measured on day 1 (at baseline) and after 4 weeks of training. Photographic analysis was used for measuring FHP, visual analogue scale for NP intensity, and neck disability index for functional status. Data analysis showed that in both groups, no significant improvement occurred in FHP. In both groups, there was a significant improvement in functional status and NP. There was no significant difference between both groups for FHP and NP. There was a significant improvement in functional status in the experimental group in comparison to the control group. Four weeks of DCF training does not cause a significant improvement in FHP in 13 to 18 years old adolescent children using computers regularly.²¹

TITLE OF THE STUDY:

“EFFECTIVENESS OF VIDEO ASSISTED TEACHING ON PRACTICE REGARDING EXERCISES TO SUPPORT SPINE AND PREVENT NECK PAIN AMONG SCHOOL CHILDREN OF SELECTED SCHOOL”.

OBJECTIVES OF THE STUDY:

Primary objective:

1. To assess the pre-existing practices regarding exercise to support spine and prevent neck pain among school children of selected school.

Secondary objective:

1. To assess the effectiveness of video assisted teaching on practices regarding exercise to support spine and prevent neck pain among school children of selected school.
2. To find out the association between the effectiveness of video assisted teaching on practices regarding exercise to support spine and prevent neck pain with selected demographic variables among school children of selected school.

HYPOTHESIS:

H0- There will be no significant difference between pre test and post test level practice regarding exercise to support spine and prevent neck pain with selected demographic variables.

H1- There will be significant difference between pre test and post test level practice regarding exercise to support spine and prevent neck pain with selected demographic variables.

OPERATIONAL DEFINITIONSEFFECTIVENESS:

According to the Oxford dictionary 'effectiveness' is the fact of producing the result that is wanted or intended.²³

In this study 'effectiveness' means to check the result of the video assisted teaching on exercise to support spine and prevent neck pain.

VIDEO ASSISTED TEACHING

According to the Oxford dictionary 'video assisted teaching' means a system of recording moving pictures and sound either using a digital method of storing data or using video tape.²⁴

In this study 'video assisted teaching' means to teach the school children exercises to support spine and prevent neck pain with the help of video.

PRACTICE:

According to Oxford dictionary 'practice' means improving skills.²⁵

In this study 'practice' means skills to perform exercises to support spine and prevent neck pain in children.

EXERCISE:

According to the Oxford dictionary 'exercise' means an activity carried out for specific purpose.²⁶

In this study 'exercise' means engage in physical activity to support spine and prevent neck pain

SUPPORT:

According to the Oxford dictionary 'support' means to help.²⁷

In this study 'support' means to maintain the correct posture while sitting during online lectures or while carrying backpacks.

PREVENT:

According to the Oxford dictionary 'prevent' means to stop somebody from doing something.²⁸

In this study 'prevent' means to keep from occurring neck pain with the help of video assisted teaching on exercises to support spine and prevent neck pain.

PAIN:

According to the Oxford dictionary 'pain' means highly unpleasant physical sensation caused by illness or injury.²⁹

In this study 'pain' means physical suffering or distress of spine and neck.

SCHOOL CHILDREN:

According to Oxford dictionary 'school children' means a child who attends school.³⁰

In this study 'school children' refers to children from 4th to 6th standard.

SCOPE OF THE STUDY:

The study will help to find out on ground reality in terms of neck pain among the school going children.

The study will help the respondents to know the level of knowledge that they possess regarding exercises to support spine and prevent neck pain. The study will enhance the knowledge of the respondents regarding exercises to support spine and prevent neck pain. The study will help to reduce neck pain and prevent many of the long-term health consequences associated with neck pain.

ASSUMPTIONS:

1. School students sit in unnatural position during e-learning.
2. Students spend unregulated hours for gaming or viewing videos.
3. School students have some knowledge about the exercises to support spine and prevent neck pain.
4. Video assisted teaching may enhance the practice of the students regarding exercises to support spine and prevent neck pain.

LIMITATIONS:

1. The study was confined to specific school which imposes limits to any large generalization.
2. The data was collected from 60 samples to find out the effectiveness. It could be done on more samples for the larger generalization.
3. The study was restricted only to school students of 4th to 6th standard of the selected school.

ETHICAL ASPECTS:

Ethical issue was addressed by taking institutional ethical committee approval for ethical consideration. Permission from competent authorities of selected school and informed consent and assent from the participants and their parents were taken for their willingness to participate in the study. The confidentiality of the data was maintained with fair non discriminating selection of participants, no harm or injustice were done while dealing with the samples and the data.

CONCEPTUAL FRAMEWORK

A conceptual framework represents the researcher's synthesis of the literature on how to explain a phenomenon. The conceptual framework "sets the stage" to present the particular research question that drives the investigation being reported based on the problem statement. The conceptual framework lies within a much broader framework called the theoretical framework.

The conceptual framework for this study is based on Health Belief Model by social psychologists Hochbaum, Rosenstock, was applicable for this study to assess practices of school children regarding exercise to support spine and prevent neck pain.³¹

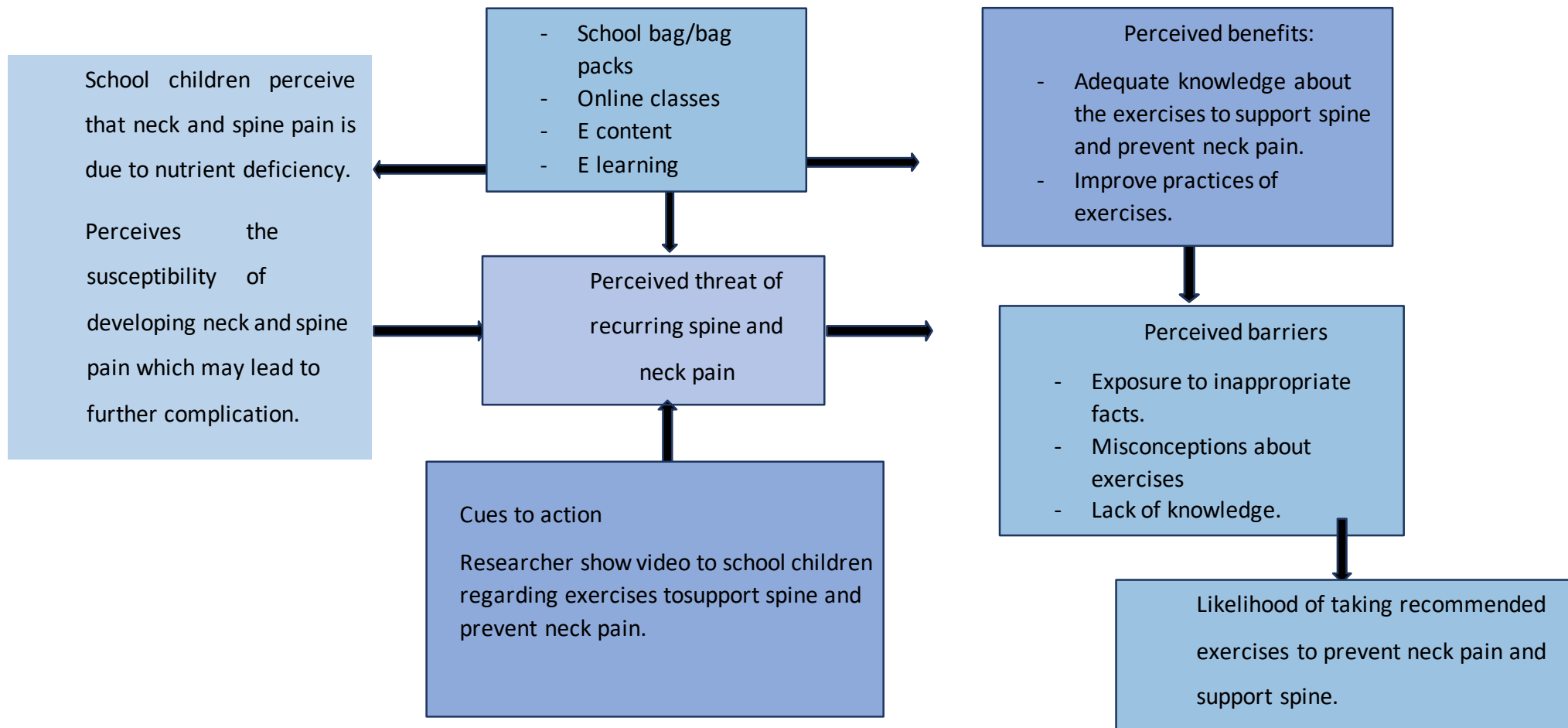


Fig. No. (I) 1 Conceptual framework on Health Belief Model.

SUMMARY:

The chapter dealt with the introduction, background, need of study, title of the study, objective, hypothesis, operational definition, scope of the study, assumptions, limitations, ethical aspects, and conceptual frame work imparting focus on the significance of exercises to prevent neck and spine pain among children.

CHAPTER II

REVIEW OF LITERATURE

The purpose of literature review is to discover what has previously been done about the problems to be studied, what remains to, what methods have been employed in other research and how the result of other research in the area can be combined to develop knowledge.

A literature review helps to lay the foundation for a study, and can also inspire new research ideas. In this study review of literature is arranged as per the following subheads.

1. Reviews related to incidences of spine and neck pain among school children.
2. Reviews related to effectiveness of video assisted teaching.
3. Reviews related to exercises to support spine and reduce back pain among school children.
4. Reviews related to incidences of spine and neck pain among school children.

Maj S Bakhtiar Choudhary et.al. (2020), conducted a study to assess the effects of ergonomic settings on children spending more time on devices. About 186 children (aged between 10-18 years of both sexes) and their parents volunteered to respond to online survey with a questionnaire covering awareness of parents on ergonomics, problems encountered by children on 'make-shift' workplace adjustments, hours of sitting, screen time, eye-monitor ergonomics, backrest, footrest, keyboard & mouse ergonomics, breaks during work and gadgets they used. Problems encountered by the children were analysed. This was conducted 60 days after the first day of lockdown in Hyderabad (23 March 2020). Children spent longer hours on gadgets, on laptops (58%), android / apple phones (20%), desktops (12%) and tablets (10%). Their content on gadgets was 45% curriculum, 35% games and 20% others. Study revealed that parents were unaware of ergonomics and effects on their children. Very few parents understood the correct sitting posture (6%), eye-monitor ergonomics (1%), laptop ergonomics (3%) and (38%) importance of breaks. About 21% of subjects suffered upper back pain, 18% lower back pain, 13% eye strain, 11% headache, 6% had irregular sleep and 6% behavioural changes. Effects of wrong posture during work, repetition, loading and probable cause for pain were discussed in the paper.³²

Mullerpatan R, et.al. (2021), conducted a study with the aim to measure point prevalence of low back and neck pain among rural and tribal people in Raigad District of Maharashtra, India, and explore attitudes and beliefs of rural people towards spine pain and disability. In a cross-sectional survey of six villages in the Raigad District of Maharashtra State of India, low back and neck pain were measured using the Spine Pain Questionnaire. 2323 participants were surveyed, which include children and adolescents. Among rural people (n = 2073), the point prevalence of low back and neck pain was 4.9% (95% CI 3.94-5.79) and 2.9% (95% CI 2.21-8.87), respectively. Among tribal people (n = 250), prevalence was 10.0% (95% CI 6.28-13.71) for low back pain and 3.6% (95% CI 1.29-5.90) for neck pain. Lifting heavy weights and bending trunk were the limiting activities.³³

Dr. Mohan A. Patil, et.al. (2016), carried out a study to decide regional cut-offs of heavy relative weights of backpacks in male and female children. In a community based co-relational study 249 male and 251 female children in the age group of 11-14 yrs. using backpack from 6 schools of Kolhapur city, Maharashtra, India was studied. Musculoskeletal effects were noted as per Nordic Musculoskeletal Questionnaire. Data was recorded in MS Excel worksheet and statistically analysed using computer assisted statistical software SPSS Package Version-20. Musculoskeletal problems due to heavy backpacks were found in 60.6% of children; 55.02% males and 66.53% females. Prevalence increased with increasing relative weight of backpack both in male and female children. With relative weight of backpack $\leq 11\%$, most children were asymptomatic. Relative weight of 12% to 13% showed statistically insignificant prevalence of musculoskeletal symptoms. With a relative weight of backpack $\geq 14\%$ in males and $\geq 15\%$ in females, prevalence of musculoskeletal symptoms steeply increased. Relative weight of backpack $\leq 11\%$ is safe to carry. As relative weight of backpack increases to $\geq 15\%$, majority of adolescent children in the age group of 11 - 14 years in this region are at risk of developing musculoskeletal adverse effects.³⁴

Sabui TK et.al. (2018), conducted a study to know the prevalence and pattern of musculoskeletal abnormalities in school-going

children living in the hilly and foothill regions of the Eastern Himalayas using the paediatric Gait, Arms, Legs, Spine (pGALS) screening tool. Total of 3608 children, aged 3-12 years were enrolled from 16 schools (5 in the hills) in the eastern Himalayan region. After the three screening questions, the pGALS manoeuvres were administered. Subjects were shown a video on pGALS before the actual testing. Those detected to have abnormality were probed in greater detail and referred for treatment as necessary. The pGALS examination was completed in 3463 children with a median time of 3 min (range 1.9-5.4 min). The abnormality pattern was in the order: growing pains (38.86%), hypermobility (25.54%), mechanical pains (24.46%) and others (11.14%). Among mechanical pain, back and neck problems occurred with a similar overall frequency of 7.61%. Similar order was observed considering only children from the hills. However, in hill children, the proportion of mechanical problems (32.28%) exceeded proportion of hypermobility (23.62%). Asymptomatic hypermobility was more common than symptomatic hypermobility. Maximum prevalence of hypermobility was in 6-9-year age group of the 94 children with hypermobility, 55.32% had some kind of pain. Paediatric Gait, Arms, Legs, Spine is an acceptable screening tool for musculoskeletal abnormalities in apparently healthy children. Growing pain is the commonest musculoskeletal complaint while hypermobility is the commonest physical abnormality in school-going children in the Eastern Himalayas. Asymptomatic hypermobility is more common than symptomatic hypermobility.³⁵

Sharan, Deepak et.al. (2012), Conducted a study with an aim to find out the prevalence of different musculoskeletal problems among the school children in India. In a retrospective study data was collected from twenty-two students. The main diagnostic criteria were pressure mark (redness or swelling) over neck and shoulder corresponding to the straps of the backpack, stooping posture while carrying the back pack, pain or stiffness in the neck, upper back and shoulders predominantly while carrying the back pack and absence of these symptoms during school holidays. Results revealed that pain in the upper back (40%), neck (27%) and shoulder (20%) were most prevalent body regions followed by forearm and wrist pain (7%) and low back (6%). Results further revealed that all the students participated in this study have a pressure mark over shoulder. 54.55% of the children were diagnosed with myofascial pain and rest with thoracic outlet syndrome.³⁶

Gauri A. et.al. (2019), conducted a cross-sectional study on 163 students from two city schools. Physical factors were evaluated using a structured questionnaire. Strengths and difficulties questionnaire was used to assess psychosocial factors. The studied sample consisted of 49.7% boys and 50.3% girls. Mean school bag weight was 6.1 ± 2.4 kg (range: 2.2-15.6 kg). Mean weight of school bag as a percentage of body weight was $13.5 \pm 6.2\%$. Approximately 76% students carried more than 10% of their body weight. The prevalence of back pain (over last 1 month) was 53.9%. No associations were found between back pain and weight of school bag, weight of school bag as a percentage of body weight and physical activities. Significant associations were found between back pain and number of hours spent watching television [odds ratio (OR): 3.3, 95% confidence interval (CI): 1.5-7.5; $P=0.003$], history of injury to the back (OR: 4.8, 95% CI: 1.47-15.8, $P=0.003$), presence of a family member complaining of back pain (OR: 1.98, 95% CI: 1.25-3.14, $P=0.002$), conduct ($P=0.042$) and hyperactivity problems ($P=0.045$). Thus, there appears a need to consider psychosocial factors along with physical factors when evaluating a young student with back pain.³⁷

Williams CM, et.al. (2017), conducted a Longitudinal cohort study to assess whether there is an independent relationship between the age at which infants first sit and walk without support and spinal pain at 11 years of age. Data from the Danish National Birth Cohort were analysed, using the age at which children first sat and first walked without support as predictors. Parents reported the predictors when the children were 6 months and 18 months of age, and also provided information in response to a comprehensive list of covariates, including child sex, birth weight, and cognitive development; socioeconomic indicators; and parental health variables. Outcomes were measured at 11 years of age using the Young Spine Questionnaire, which assesses the presence and intensity of spinal pain. Data was analysed using multivariable logistic regression models to estimate determinants of neck, thoracic, lumbar, and multisite pain. The analyses included data from approximately 23 000 children and their parents. There were no consistent independent associations between the age at first sitting or walking and spinal pain at the age of 11. Odds ratios were between 0.95 and 1.00 for the various pain sites. The age at which a child first sits or walks without support does not influence the likelihood that he or she will experience spinal pain in later childhood.³⁸

Strandberg-Larsen K, et.al (2017), conducted a study with aim to describe the patterns in low back, mid back, and neck pain

complaints in young adolescents from the Danish National Birth Cohort (DNBC) and to investigate the co-occurrence of spinal pain and stress and general well-being, respectively. Cross-sectional data from the 11-year follow-up of DNBC were used. As part of a web-based survey, a total of 45,371 young adolescents between 10 and 14 years old completed the Young Spine Questionnaire, the Stress in Children Questionnaire, and a one-item question on general well-being. Associations between spinal pain and, respectively, stress and general well-being were estimated by means of multiple logistic regression models. Almost one fifth of boys and one quarter of girls reported spinal pain. Compared with adolescents who reported no stress, adolescents reporting medium and high values of stress had odds

ratios (OR) of 2.19 (95% CI 2.08-2.30) and 4.73 (95% CI 4.28-5.23), respectively, of reporting spinal pain (adjusted for age, gender, and maternal education). Adolescents who reported poor general well-being had an OR of 2.50 (95% CI 2.31-2.72) for reporting spinal pain compared to adolescents with good general well-being. Spinal pain is a common complaint among young adolescents and co-occurs with stress and poor general well-being.³⁹

Minhelli B. et.al. (2020), conducted a study that aimed to determine the prevalence of NP and LBP in adolescents and to investigate its association with sedentary activities and postures. The sample was comprised of 304 students, being 144 (47.4%) boys, aged between 10 and 17 years old (13.68 ± 2.02). The measurement instruments included a questionnaire, postural evaluation of some task and the transportation and weighing of the backpack. The prevalence of NP and LBP were, respectively: in the lifetime: 51% and 65.1%; at the moment: 5.9% and 8.6%; and in a 12-month period: 39.8% and 47%. The older students (15-17 years old) had 3.03 times higher probability of developing LBP (95% CI (1.82-5.03; $p \leq 0.001$)) than the younger one (10-14 years), adolescents who used a mobile phone more than 10 h per week had 2.48 times higher probability of developing NP (95% CI: 1.29-4.75; $p = 0.006$) than those who had used for a shorter period (until 10 h) and 2.39 more probability to develop the LBP (95% CI: 1.41-4.08; $p = 0.001$). The students who sit with a spine in a wrong position had 3.24 more chances to have LBP (95% CI: 1.33-7.89; $p = 0.010$). Data of this study showed a higher prevalence of NP and LBP in this sample and revealed that adolescents who used a mobile phone more than 10 h per week had more probability to develop both NP and LBP and older students and who sit with a spine in a wrong position had more chances to have LBP.⁴⁰

Gaowgzehriziq et.al. (2020), conducted a study focusing on the use of smartphones in distance learning. Moreover, the study also examined the excessive use of smartphones which ultimately causes neck pain during the COVID-19 pandemic. The current study consisted of 1045 number of participants. The survey results discussed the feedback of respondents based on their understanding. In this study, a quantitative approach was selected. 27 questions were prepared and included in the questionnaire. The data collected from the survey form was examined based on the students' responses. This study investigated the outcomes based on demographic and descriptive analysis, Pearson correlation analysis, reliability test, and linear regression analysis; it was noteworthy that the participants belonged to different regions, mindset and background. Thus, the results were based on the respondents' perception.⁴¹

Reviews related to effectiveness of video assisted teaching.

Samuel Shiji et.al. (2017), Conducted a study on "Effectiveness of video assisted teaching programme on knowledge regarding Primordial Prevention of Cardiac Diseases among High School teachers in selected schools, Bangalore." The objectives were to assess the knowledge regarding Primordial Prevention of Cardiac Diseases, evaluate the effectiveness of video assisted teaching programme on knowledge regarding Primordial Prevention of Cardiac Diseases among high school teachers in selected schools, Bangalore and to find out the association between post-test knowledge regarding Primordial Prevention of Cardiac Diseases with their selected demographic variables. Pre-experimental one group pre-test post-test design was adopted for this study. 40 high school teachers of Jyothi School, Bangalore were selected for the study using non-probability convenient sampling technique. The pre-test was administered using a structured questionnaire to assess the knowledge after which the video was presented. Post-test was done after 14 days using the same instrument. The data obtained were analysed using descriptive and inferential statistics. The findings of the study showed that the mean pre-test knowledge score 15.23 ± 3.04 was less than the post-test knowledge score 22.55 ± 2.72 . The 't' test value computed between the pre-test and post-test score was statistically significant at 0.05 level ($t=28.820$, $df=39$). The findings also denoted a significant correlation between the post-test knowledge and the demographic variables.⁴²

Sree Vidhya. K.P et.al. (2021), conducted a study to assess the effectiveness of video assisted teaching programme on knowledge

regarding first aid management of foreignbody aspiration among mothers of under-five children in selected Anganwadis. The other objectives of the study were to find out the association between level of knowledge with selected demographic variables of mothers regarding first aid management of foreign body aspiration. Quasi experimental one group pre-test post-test design was conducted among 30 mothers of under-five children. Samples were selected by using purposive sampling method from 2 anganwadis. Pre-test was conducted using structured knowledge questionnaire. It was followed by video assisted teaching of first aid management of foreign body aspiration with appropriateAV aids by the investigator. Post-test was done after 7 days and the analysis shows that there is a significant increase in knowledge score of mothers regarding first aid management of foreign body aspiration. Also, the study findings revealed that there is no association between knowledge score of mothers with their selected demographic variables. Thus, the study concluded that the video assisted teaching regarding first aid management of foreign body aspiration was effective in improving the knowledge of mothers.⁴³

Nandini. M. et. al. (2019), conducted a study on Effectiveness of video-assisted teaching program on toilet training of toddlers among parents in a selected rural area. In order to achieve the objectives of the study, a pre experimental study approach was adopted for the study. The overall mean knowledge score was 14.03 ± 2.665 , with a mean percentage of 46.75%, revealing that the overall knowledge of the parents regarding toilet training is moderate. Area-wise analysis of knowledge score revealed that the parents had the highest knowledge in the area of meaning of toilet training and its readiness with a mean percentage of 57% and least in the area of steps of toilet training with a mean percentage of 41.43%. The assessment of the effectiveness of video-assisted teaching program on toilet training revealed that the total mean knowledge score is increased by 25.83% with a mean \pm standard deviation (SD) of 7.75 ± 2.55 after the administration of video-assisted teaching program. The pre-test mean was 14.03 with that of SD ± 2.665 and post-test mean was 21.78 with that of SD ± 2.616 . The pre-test knowledge level was average in 60%, poor in 35%, and good in 2% and post-test knowledge level was very good in 12.5%, good in 70.5%, and average in 12.5% of the parents. The cumulative frequency distribution of pre- and post-test knowledge scores shown in the Ogives shows a significant difference between the pre- and post-test scores. The knowledge pre-test median was 13.50, whereas the post-test median score was 21.50. It shows a difference of 9 in knowledge. Association between pre-test knowledge with demographic variables revealed that there was a significant association between the pre-existing knowledge with these demographic variables on toilet training.⁴⁴

Saldon Ngawang et. al (2020), conducted a study to compare the knowledge among mothers regarding the post discharge care of high-risk babies between the study and control group. A quantitative, true experimental design was adopted by using computer randomized table and generated sampling technique, 40 mothers were selected in which 20 in each study and control group. An interview schedule to collect the baseline variables, structured questionnaires to assess the knowledge and reported checklist to assess the practice of mothers were made. The collected data was analysed by using descriptive and inferential statistics. It revealed that mean knowledge scores in experimental group were 15.59 and SD was 1.85 and in control group mean was 11 and SD was 2.79, whereas the mean practice scores in experimental group were 8.35 and SD was 0.93 and in the control group mean was 6.15 and SD was 0.933. The findings of the study show that, the experimental group has mean knowledge score of 15.95 1.85 was higher than the control group mean knowledge score 11 ± 2.79 , whereas the experimental group has mean practice score of 8.35 0.933 was greater than the control group mean practice score 6.15 0.933. It depicts that; VAT was an effective method to enhance the knowledge and reported practice regarding post discharge care of high-risk babies among mothers.⁴⁵

Ramakrishnan J et.al. (2017), the study was conducted with the objectives to assess the pre-test and post-test level of knowledge scores among school teachers, to determine the effectiveness of video assisted teaching programme and to associate the pre-test knowledge scores and their selected demographic variables. The researcher used a quasi-experimental research design. The research approach was evaluative approach. The study conducted in Capron Hall girls higher secondary school at Madurai district. 60 samples were selected by using non-probability convenient sampling technique. The data was collected by using structured questionnaires before and after administration of video assisted teaching programme. The study findings of this study show that, there was a significant improvement of knowledge among school teachers after administration of video assisted teaching programme. The mean and SD of post-test knowledge score was (28.55 ± 1.29) and pre-test knowledge score was (15.27 ± 3.13) . The paired 't' value (132.59) at LOS (<0.001) shows that there is a statistical difference between pre-test and post-test level of knowledge score among school teachers. The result supported that, the knowledge of school teachers was improved after administration of video assisted teaching programme and pamphlet regarding prevention of child abuse.⁴⁶

Mr. Garg Sunil Kumar et.al. (2017), conducted a study to evaluate the effectiveness of video assisted learning package on knowledge regarding oral hygiene among children. A study was conducted on 60 school children selected through simple random sampling technique using true experimental research design in Government primary schools. Data was collected using structured questionnaire and statistically analysed. A statistically significant difference was found in mean pre-test (8.83) and mean post-test (14.90) knowledge score of experimental group at 0.05 level of significance. There was a statistically significant difference in post-test mean knowledge scores of experimental groups (14.90) and control group (10.37) at 0.05 level of significance. The study concluded an enhancement in level of knowledge by video assisted learning package and recommended similar patterns of Education to improve the oral health of individuals.⁴⁷

Mrs. Ritanjali Sahoo et.al (2021), conduct a study to educate staff nurses on UCB stem cells banking. An experimental research approach with quasi-experimental one group pre and post-test design was adopted. Convenience sampling technique was used to select 190 staff nurses working in selected Hospitals of Odisha. A closed ended knowledge questionnaire and video assisted teaching module were administered. Mean post-test knowledge scores were significantly higher than the mean pre-test knowledge scores. There was an improvement in the level of knowledge as tested by paired 't' test & Chi-square test. Results were found to be statistically significant ($P < 0.05$). This study demonstrated that VATM on UCB stem cells banking was effective in improving the knowledge of staff nurses.⁴⁸

Mohan Sofiya et.al. (2015), conducted a Quasi-experimental Study on Effectiveness of Video Assisted Teaching on First Aid for Minor Injuries among National Cadet Corp Students in a selected School, Telangana. The sample for the study comprised of 50 NCC Students selected using simple random sampling. The data was collected between 17th Feb. to 23rd Feb. 2015, by using structured knowledge questionnaire. The data was analysed using descriptive and inferential statistics. The difference between pre-test and post-test level of knowledge was found through paired 't' test. It revealed that calculated value 15.76 was higher than tabulated 't' value 2.02. It shows that VAT was found to be effective at 0.05 level as there was significant increase in the level of knowledge on post-test. Association between knowledge and religion, Education of mother, Education of father, occupation of mother, were significantly associated at $P < 0.05$ level, however variables such as age, gender, occupation of father, monthly income, were not found to be significant.⁴⁹

Seham Mohamed Abd Elaziz et.al.(2016) conducted a study to evaluate the effect of video-assisted teaching intervention on nurses' knowledge and practice regarding arterial blood gases sampling for ventilated children at paediatric intensive care units. A quasi-experimental research design was utilized to conduct the study. The study was conducted at Paediatric Intensive Care Units (PICUs). A convenient sample of (70) nurses were included in this study regardless of their personal characteristics. Two tools were used, Tool 1: A structured interviewing questionnaire designed to assess nurses' personal characteristics, personal data of the studied children, and nurses' knowledge regarding arterial blood gases sampling. Tool 2: An observation checklist to assess nurses' practice regarding arterial blood gases sampling. There was a significant improvement in nurses' total knowledge and practice regarding arterial blood gases sampling after video-assisted teaching intervention. It concluded that video-assisted teaching intervention had a positive effect on the improvement of nurses' knowledge and practice level, which indicates that the video-assisted teaching intervention is an effective method. The study recommended that applying the video-assisted teaching intervention for nurses caring for ventilated children helps to promote and update their knowledge and ensure competent practice.⁵⁰ **Jaklein R. Younis et.al. (2015)**, the current study was conducted to determine the effect of video assisted teaching method versus traditional lecture on primary teachers' knowledge and skills regarding first aids management of children's school day accidents. A Comparative research design was used for this study. simple random sample of 200 primary school teachers was included the study was carried out at four primary schools two tools were used for data collection. Tool one: teachers' knowledge questionnaire: it consisted of two parts. (a) A structured: socio- demographic questionnaire to obtain demographic data of the studied subjects; (b) Structured knowledge questionnaire regarding first aids measures. Tool two: five points Likert- scale structured performance check list was used to assess degree of improvement in primary school teachers' management skills regarding first aids for children's school day accidents after utilization of Video-assisted teaching method versus Lecture Method. The study showed a statistically significant improvement in total knowledge score of primary school teachers undergoing video-assisted teaching method regarding first aids of children's school day accidents (28.68 ± 3.77) compared to teachers undergoing traditional lecture (12.77 ± 5.00). Also, there was statistically significant improvement in management skills of primary school teachers undergoing video-assisted teaching method (28.68 ± 3.77)

compared to teachers undergoing traditional lecture. Utilization of video-assisted teaching method was succeeded in achieving significant improvements in the primary school teachers' knowledge and skills regarding first aid of children's school day accidents compared to traditional lecture method.⁵¹

Rakshale, Nilima et.al. (2020), conducted a study to evaluate the effectiveness of video assisted teaching program regarding post-traumatic stress disorder among primary teachers. The study design was pre-experimental research design, one group pre-test post-test approach. primary teacher of Rashtasanttukdoji primary school Wardha, lokvidhalay primary school Wardha, savitribai primary school Wardha, zilla parishad primary school neri, zilla parishad primary school dighi, zilla parishad primary school selsura, sample size was 30. After the detailed analysis of the conducted study leads to the following conclusion that Mean knowledge score of the primary teacher in pre-test was 7.33 ± 2.225 and in post-test it was 24.43 ± 1.499 . The findings show significant difference between pre-test and post-test that is After the completion of this study it is revealed that video assisted teaching program on knowledge regarding post-traumatic stress disorder among the primary teachers improving knowledge in that majority of primary teacher had (26.66%) good and (20%) excellent level of knowledge score in post-test. Statistically interpreted that video assisted teaching programme is effective on knowledge regarding, post-traumatic stress disorder (PTSD) among primary teachers.⁵²

Joshi M.A et.al.(2016), the study aimed at developing and evaluating the effectiveness of video-assisted teaching on knowledge regarding selected fruits and vegetables among school children. The frame work, of the present study was based on systems model. The conceptual framework was divided into these phases, input, process and output in a specific context, including evaluation of all phases. The Research Design used was one-group Pre-test Post-test pre-Experimental Design; Nonprobability Convenience Sampling Method was used. The Sample was selected from the selected schools of Pune city. The samples consisted of 600 7th standard school children from the respective schools of Pune city that was selected as per criteria. Major finding of the study was that majority of the children were from age group of 12 years and of them majority 51% of them were male. The researcher applied 'Z' test to know the difference between average scoring of before and after video assisted teaching to respondents and found significant difference in the knowledge score. The mean pre-test score was 7.103 and mean post test score was found 10.415 so the researcher can conclude video-assisted teaching was effective in increasing the knowledge of school children on knowledge regarding selected fruits and vegetables.⁵³

Bokade, Kanchan et.al (2021), conducted a study on effectiveness of the Video-Assisted Teaching on Anorexia Nervosa among Adolescent Girls in Selected Colleges. This study was based on a Quasi-experimental one-group pre-test and post-test research design. In this study, 60 adolescent girls were included. The sampling technique used in this study was the nonprobability convenience method of sampling. Data was collected by using questionnaires. Results: In the pre-test, 14(28%) of the adolescent girl had poor knowledge, 68% of them had average, and 4% of them had a good level of knowledge score. The minimum score in pre-test was three, and the maximum score was 11; the mean score for the pre-test was 6.88 ± 2.04 with a mean percentage score of 34.40 ± 10.23 , whereas in post-test, 8(16%) of the adolescent girl had average knowledge, 70% of them had good, and 14% of them had an excellent level of knowledge score. Conclusion: Thus, it is concluded that the planned teaching on the prevention of anorexia nervosa among adolescent girls effectively improved the knowledge.⁵⁴

D.J.Dini (2018), conducted a study to evaluate the effectiveness of video assisted teaching on knowledge and attitude regarding prevention of worm infestation among mothers of toddlers in selected hospitals at Dindigul District. In this study a quasi-experimental non-equivalent control group pre-test- post-test design was adopted. Purposive sampling technique was used to select 30 samples in experimental and 30 samples in control group. Self-administered structured questionnaire was used to collect the demographic variables and to assess knowledge on prevention of worm infestation and to assess the level of attitude a modified Likert scale was used. Findings show that in experimental group 17(56.7%) mothers had unfavourable attitude, 13(43.3%) of the mothers had moderately favourable attitude and none of the mothers had highly favourable attitude in the pre-test experimental group. In post-test 28 (93.3%) of the mothers had favourable attitude, 2 (6.7%) of the mothers had moderately favourable attitude and none of the mothers had unfavourable attitude. Finding showed that the mean score of knowledge and attitude in the post test were greater than the mean score of the pre-test. The obtained "t-value" was highly significant at $P < 0.05$ level. The relationship between the level of knowledge and attitude were found to have positive correlations ($r = 0.1767$) in the experimental group. There was statistically significant association at the level of $P < 0.05$ between knowledge of mothers of toddlers, and the place of defecation in the experimental group. There was statistically significant association at the level of $P < 0.05$ between attitude of mothers of toddlers and

the monthly income in the experimental group. There was no statistically significant association at the level of $P < 0.05$ between knowledge of mothers of toddlers and their selected demographic variables in the control group. There was no statically significant association at the level of $P < 0.05$ between attitude of mothers of toddlers in the control group. The above findings supported that the video assisted teaching helped to give adequate knowledge and develop favourable attitude regarding prevention of worm infestation among mothers of toddlers.⁵⁵

Elisabeth Coyne et.al (2018), conducted the study with the aim to inform future educational strategies by synthesising research related to blended learning resources using simulation videos to teach clinical skills for health students. An integrative review methodology was used to allow for the combination of diverse research methods to better understand the research topic. This review was guided by the framework described by Whittemore and Knafl. Ten articles met all the inclusion criteria and were included in this review. The MMAT scores varied from 50% to 100%. Thematic analysis was undertaken and we identified the following three themes: linking theory to practice, autonomy of learning and challenges of developing a blended learning model. Blended learning allowed for different student learning styles, repeated viewing, and enabled links between theory and practice. The video presentation needed to be realistic and culturally appropriate and this required both time and resources to create. A blended learning model, which incorporates video-assisted online resources, may be a useful tool to teach clinical skills to students of health including nursing. Blended learning not only increases students' knowledge and skills, but is often preferred by students due to its flexibility.⁵⁶

Reviews related to exercises to support spine and prevent neck pain among school children.

Anand Misra, et.al. (2021), conducted a comparative study on, carrying heavy backpacks could cause a wide spectrum of Musculo-skeletal disorders and postural dysfunction. A relative lack of awareness of the very high rates of postural deviation caused due to backpack leads to altered biomechanics. The purpose of the study was to establish the effectiveness of exercise therapy in preventing postural deviation caused by back pack in school children. 40 subjects of both genders, between the ages of 10 and 14 years were randomly selected on the basis of selection criteria were assigned to the two groups with 20 subjects in each group - Control Group and Experimental Group. The experimental group subjects were under a structured 6 weeks exercise program for 30 minutes each day for 6-days a week and the control group subjects were not under any exercise program. Angular deviations caused due to backpack for all the subjects were measured by Imaging Tool. There was statistically significant reduction in crania vertebral angle and crania horizontal angle in experimental group with p value less than 0.05 after 6 weeks of supervised exercise program. The results of the present study, suggested that structured exercise program is highly effective in reducing the postural deviation caused by backpack in school children.⁵⁷

Perooru Rupesh et.al (2020), Conducted a quasi-experimental study to determine the effect of postural correction exercises in rural area school going children. 25 subjects, age group 10-14 years with neck pain from government high school & talent high school, vellithiruppur, Erode, Tamil Nadu was selected. Interventions were, subjects received sitting posture modification and home care exercise advices (Isometric neck exercises, free exercises and postural correction) for 3 weeks. Outcome measures were Neck disability index and Visual analogue scale. Results obtained were NDI- Pre-test Mean, S.D 21.8 ± 0.825688 ; Post-test Mean, S.D 0.020618 , VAS- Pre-test Mean, S.D 04.9 ± 1.986503 ; Post-test Mean, S.D 01.4 ± 0.026543 showed there was significance difference between pre-test; post test data for NDI and VAS. There was significant reduction in neck pain and neck disability after postural correction and exercises in school going children with neck pain in rural area.⁵⁸

Manoj Abraham M et.al (2013), conducted a study to develop and validate a Shoulder Accelerated Rehabilitation Protocol (SHARP) for patients with frozen shoulder in our Indian scenario. Thirty-six consecutive idiopathic frozen shoulder patients with a painful shoulder of more than 4 weeks and less than 6 months duration and with limitation of active and passive range of movement greater than 25% in abduction and external rotation compared with the other shoulder were selected and subjected to the SHARP protocol. The mean constant shoulder score at the start of protocol was 26.69 (SD- 8.522), which improved to 98.58 (SD-2.892) at 15 months. Maximum patients reached a constant shoulder score of 100 at 15 months (22 patients). The mean VAS score for pain at the start of the protocol was 7.14 (SD-1.222) which improved to 0 at 18 months. SHARP is a non-invasive, easy to follow and reproduce, home based exercise program effective in early improvement of pain and disability in patients with frozen shoulder.⁵⁹

Shrikrushna S. et.al (2020), Conducted a quantitative study to find out the effect of stretching and strengthening exercises (Jandaa

Approach) in School going children with lower crossed syndrome. Students between the ages 11 to 15 years were screened for lower crossed syndrome and 41 students were having lower crossed syndrome and are selected for the study. The treatment program was conducted for 2 weeks, scheduled 5 sessions per week. The outcome measures were manual muscle testing of the abdominal muscles and gluteal muscles and Thomas test which were recorded before and after treatment sessions. There was increase in strengths of abdominal muscles and gluteal muscles after 4 weeks treatment (p value & 0.0001) which was statistically significant and there was reduction in tightness of hip flexor muscles (p value 0.0001) which was statistically significant. On the basis of results of our study we concluded that stretching and strengthening exercises (Janda Approach) are effective in treating lower crossed syndrome in school going children.⁶⁰

Rongzhong Huang et.al. (2018), conducted a randomized control trial with the aim to investigate which prevention strategies for low back pain (LBP) are most effective. a Bayesian network meta-analysis to summarise the comparative effectiveness of LBP prevention strategies was completed. The primary outcomes were an episode of LBP and LBP-associated work absenteeism represented as ORs with associated 95% credibility intervals (CrIs). all prevention strategies with surface under the cumulative ranking curve (SUCRA) analysis was ranked. Data were independently extracted by two investigators, and RCT quality was assessed using the Cochrane Risk of Bias tool. Forty RCTs were included. Exercise combined with education (OR: 0.59, CrI: 0.41 to 0.82) and exercise alone (OR: 0.59, CrI: 0.36 to 0.92) both prevented LBP episodes; exercise combined with education and education alone both had large areas under the curve (SUCRA: 81.3 and 79.4, respectively). Additionally, exercise (OR: 0.04, CrI: 0.00 to 0.34) prevented LBP-associated work absenteeism, with exercise and the combination of exercise and education ranking highest (SUCRA: 99.0 and 60.2, respectively). Exercise alone and exercise combined with education can prevent episodes of LBP and LBP-related absenteeism.⁶¹

Yolandi Brink, et.al. (2021), conducted a study that aimed to determine the usefulness of school-based interventions in promoting spinal health in children and adolescents and synthesize the evidence in a user-friendly infographic. The prevalence of spinal pain is high in children and adolescents attending school. There are no evidence-based guidelines to promote spinal health (spinal pain and spinal well-being) in schools. A search was performed across eight databases from the inception of the databases to August 2019 for full-text English-language articles which assessed the effect of school-based interventions on spinal health. Spinal health outcomes included pain limited to the spinal area including lower back, upper back, neck, and neck-shoulder pain, and impacts of spinal pain (e.g., absenteeism from school). Studies were appraised for methodological quality (Pedro scale and Joanna Briggs Institute checklist). The usefulness of interventions was based on meta-analyses; calculated effect size; the number of spinal health outcomes; and the direction of the (summary) effect of the intervention. Twenty-two studies were included. Four interventions were identified: exercise, education, the combination of exercise and education and furniture. The study concluded that School-based exercise is most useful to promote spinal health in the short term, followed by a combination of exercise and education, and education-only interventions.⁶²

J.J Hill, et.al (2016), conducted a observational cohort study on four primary schools in New Zealand to describe adherence to a 9-month exercise programme, and analyse factors that may influence adherence. Outcomes included self-evaluation of adherence to exercise, and self-reported incidence and severity of LBP. Participants were taught four simple spine movements for daily practice as part of a health programme that emphasised 'back awareness' and self-care of the spine. Strategies to encourage adherence were implemented. Data on self-reported adherence and episodes of LBP during the previous week were collected through an online survey completed on trial days 7, 21, 49, 105, 161 and 270 over a 9-month period. Daily exercise adherence was 34% on day 7 and dropped to 9% by day 270. Exercise adherence of at least once per week was 84% on day 7 and 47% by day 270. Frequency of exercise was not associated with episodes of LBP [odds ratio (OR) 1.16, 95% confidence interval (CI) 0.92 to 1.47, $P = 0.21$], previous history of LBP (OR 0.97, 95% CI 0.77 to 1.23, $P = 0.77$), lifetime first episode of LBP (defined as the first episode of LBP in the study period for participants with no previous history of LBP) (OR 0.39, 95% CI 0.15 to 1.34, $P = 0.14$) or severity of LBP (OR 1.59, 95% CI 0.99 to 2.52, $P = 0.05$). This study applied a comprehensive set of strategies considered to be important in encouraging adherence, but was not successful in sustaining the interest of more than half of the cohort. Innovative strategies are needed to develop new exercise habits in children.⁶³

Silva, et.al. (2018), conducted a qualitative study to explore the views of adolescents with chronic idiopathic neck pain toward an

intervention consisting of pain neuroscience education and exercise administered in the school setting. Students from the 10th to 12th grades of one high school ($n = 149$) were screened for inclusion in the trial, of which 45 met the inclusion criteria and 43 were accepted to participate

in the study. Four focus group interviews were conducted with 21 adolescents with chronic idiopathic neck pain who participated in a 4-week intervention consisting of pain neuroscience education and exercise. The interviews were transcribed verbatim and analysed using content analysis. Two main themes emerged: the perceived relevance of acquired knowledge and the perceived adequacy of the intervention. An intervention consisting of pain neuroscience education and exercise administered in the school setting is well accepted and considered relevant and appropriate by adolescents with chronic idiopathic neck pain. An exploration of the views of adolescents with chronic idiopathic neck pain toward an intervention consisting of pain neuroscience education and exercise administered in schools.⁶⁴

Gina L.Fanucchi, et.al. (2013), conducted a Randomised trial with concealed allocation and assessor blinding. Seventy-two 12–13-year-old children, who had complained of low back pain in the past three months were included in the study. The experimental group completed eight exercise classes of 40–45 minutes duration over eight weeks conducted by a physiotherapist, whilst the control group received no intervention. The primary outcome was pain intensity measured on a 10-cm visual analogue scale. Secondary outcomes included 3-month prevalence of pain, childhood physical risk factors for low back pain, and sense of well-being. Measures were taken at baseline (Month 0), post-intervention (Month 3), and three months later (Month 6). Pain intensity over the past month had decreased by 2.2 cm (95% CI 1.0 to 3.5) more for the experimental group than the control group at Month 3 and was still 2.0 cm (95% CI 0.5 to 3.5) less than the control group at Month 6. The absolute risk reduction for 3-month prevalence in low back pain in the experimental group was 24% (95% CI 4 to 41) compared with the control group at Month 3, and 40% (95% CI 18 to 57) at Month 6. There were also statistically-significant between-group differences in neural mobility. The study concluded that Exercise is effective in reducing the intensity and prevalence of low back pain in children.⁶⁵

Vishwanath Unnithan, et.al (2020), conducted a study to evaluate the efficacy of a specific 8-week exercise rehabilitation program as an intervention to treat recurrent nonspecific low back pain in adolescents. A randomized controlled trial involving 54 adolescents (14.6 ± 0.6 years) who suffered from recurrent nonspecific low back pain participated in either the exercise rehabilitation program or a control condition. Pre- and post-intervention measures of low back pain status and biological risk indicators were taken. Two-way mixed ANOVA was conducted and significance was set at $p < .01$. Significant improvement was noted in the exercise rehabilitation group for perceived severity of pain (effect size 1.47) and number of occasions missing physical activity (effect size 0.99). Significant improvement in the exercise rehabilitation group for sit-and-reach performance, hip range of motion, lumbar sagittal mobility (modified Schober), and number of sit-ups in 60 s were also identified. In conclusion, the specific exercise program appeared to provide positive benefits for adolescents suffering from recurrent nonspecific low back pain. Further evaluation is required to evaluate the effectiveness of the exercise rehabilitation program in relation to other interventions and to assess the long-term effectiveness.⁶⁶

SUMMARY:

This chapter dealt with the review of research literature related to the present Study. Literature searched from primary and secondary sources was electronic data Base such as Google search, Pubmed, Newspaper, Journals, Textbook.

CHAPTER III RESEARCH METHODOLOGY

Research methodology is the way to systematically solve the research problem. It may understand as the science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods/techniques but also the methodology. Researchers not only need to know how to develop certain indices or tests, how to calculate the mean, the mode and the median or the standard deviation or chi square, how to apply particular research techniques, but they also need to know which of these methods or techniques are relevant and which are not, and what would they mean and indicate and why.⁶⁷

Researchers also need to understand the assumptions underlying various techniques and they need to know the criteria by

which they can decide that certain techniques and procedures will be applicable to certain problems and others will not. All this means that it is necessary for the researcher to design his methodology for his problem as the same differ from problem to problem. Why a research study has been undertaken, how the research problem has been defined, in what way and why the hypothesis has been formulated, what data have been collected and what particular method has been adopted, why particular technique of analysis data has been used and a host of similar other questions are usually answered when we talk of research methodology concerning a research problem or study.⁶⁸

This chapter deals with methodology used by the researcher to study the “Effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school”.

RESEARCH APPROACH

Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. This plan involves several decisions, and they need to be taken in order in which they make sense to me and the order of their presentation here. The overall decision involves which approach should be used to study a topic. Informing this decision should be philosophical assumptions the researcher brings to the study; procedures of inquiry (called research designs) and specific research methods of data collection, analysis and interpretation. The selection of the research approach is also based on the research problem or issue being addressed, the researchers personal experience, and the audiences for the study.⁶⁹

In view of the nature of problem selected for the study and the objectives to be accomplished, an explanatory quantitative approach was used. This approach was considered to be the most suitable one to conduct the study. Researcher aimed, through this study, to primarily identify the prevalence of neck, shoulders and low- back pain occurrence among school children, secondly to investigate their potential risk factors and finally to assess their consequences on physical and social life.⁷⁰

RESEARCH DESIGN

Research approach and research design are two terms that are frequently used interchangeably; however, research design is the broader plan to conduct a study and research approach is an important element of the research design, which governs it. A research design is the framework or guide used for planning, implementation and analysis of the study. It is a systematic plan of what is to be done, how it will be done, and how the data will be analyzed.⁷¹

The design of the research study logically follows the identification of a research question, a search of the literature and a statement of hypothesis. The correct design helps to isolate items of concern, so that they can be examined under known conditions. It eliminates bias and reduces the margin of error. The results of the well-planned research are contribution to the growing body of nursing knowledge.⁷²

In view of the nature of the problem and to accomplish the objective of the study, Pre experimental one group pre- test post- test research design was used to evaluate effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school. The design did not include any control group. In this study checklist was used to evaluate effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school.

Study design shows that on first day (day1) pretest was conducted using modified checklist to assess the existing practice of exercises to support spine and prevent neck pain among the school students of the selected school. The video assisted teaching was also administered on the same day following pretest. After the seventh day (day7) post test was conducted to assess the practice of the students with the help of a modified checklist. The study design systematically represented is as follows

SAMPLE	PRE-TEST	INTERVENTIN	POST TEST
	Administration of modified checklist DAY 1	Administration of video assisted teaching on exercises to support spine and prevent neck pain DAY 1	Administration of modified checklist. DAY 7
School Children	01	X	02

KEY:

01: Administration of demographic data and modified checklist to assess practice of school children regarding exercises to support spine and prevent neck pain.

X: Intervention (video assisted teaching on day 1)

02: Administration of demographic data modified checklist to assess the effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain.

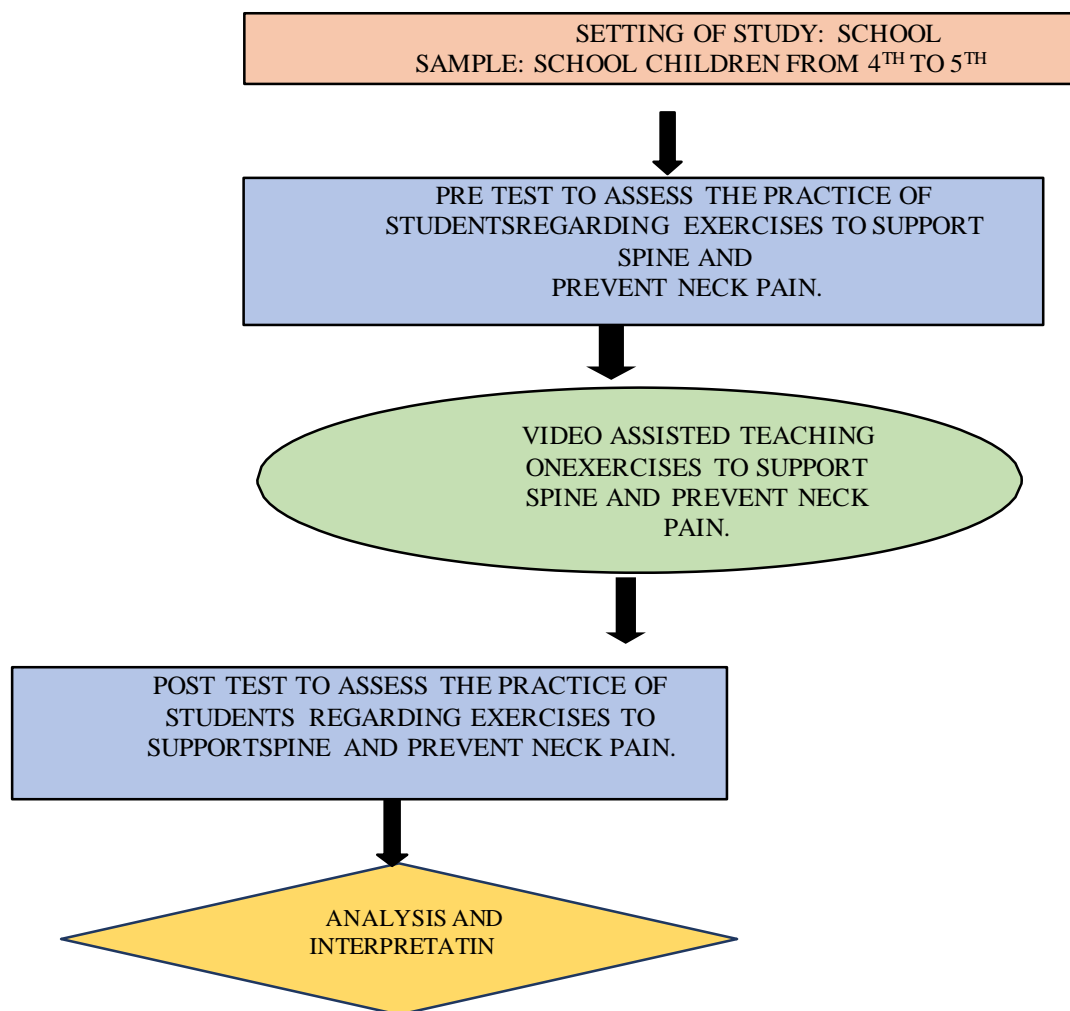


FIG NO III.1 SCHEMATIC DIAGRAM OF RESEARCH STUDY

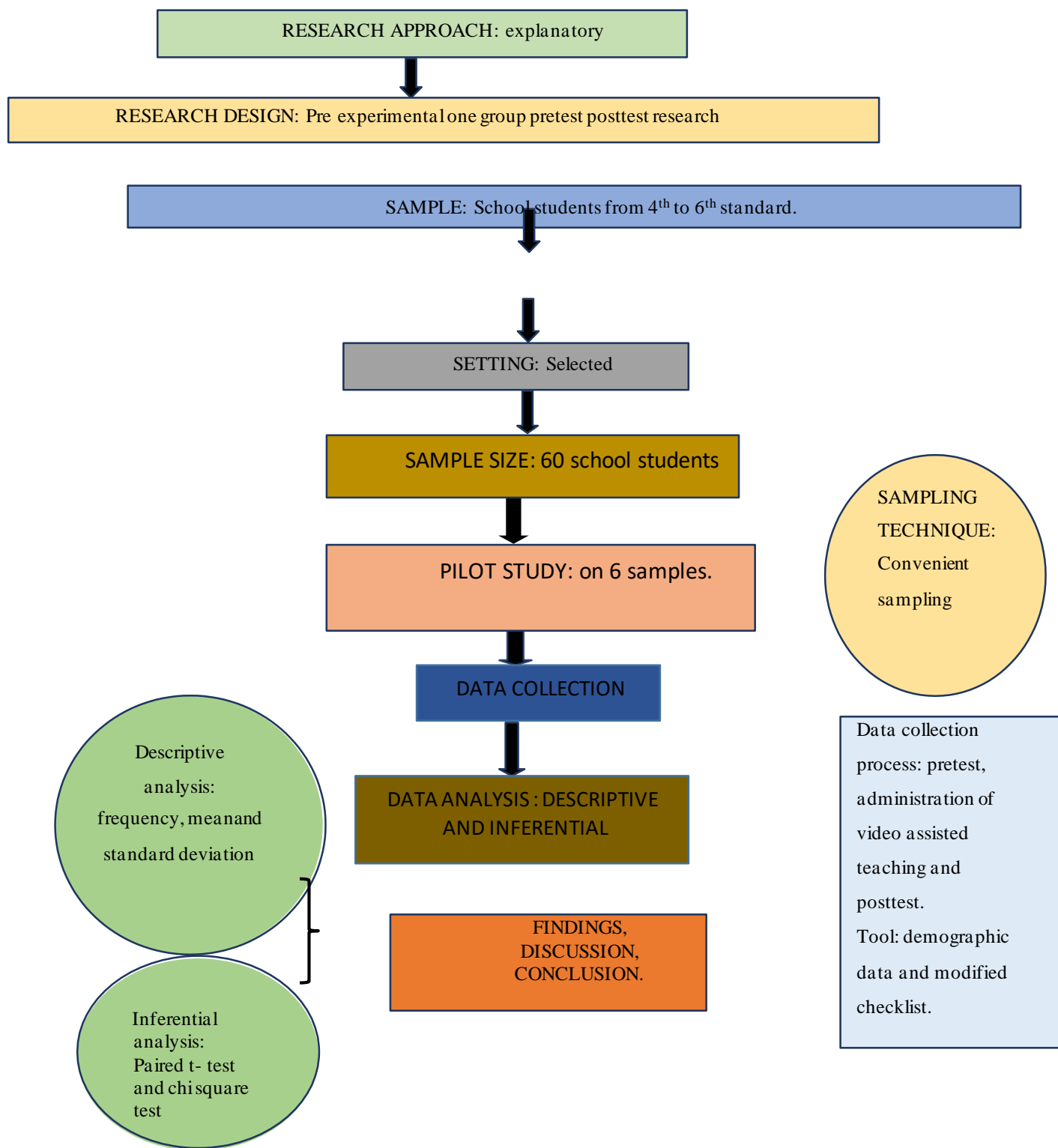


FIGURE NO. III.2: SCHEMATIC PRESENTATION OF RESEARCH DESIGN

SETTING OF THE STUDY

Setting of the study refers to “physical location and condition in which data collection takes place in study.”⁷¹

The study was conducted in selected school among school children from 4th to 6th standard. The researcher found this setting appropriate for the conduction of the study because of the following reasons:

On discussion with the authorities, the researcher found them interested in the study. The authorities and the staff were very cooperative.

VARIABLES OF THE STUDY

Variables are qualities, properties or characteristics of person, thing or situation that changes or vary. Chinn and Kramer stated that variables are concept at different level of abstraction that are concisely defined to promote their measurement or manipulation within the study.⁷¹

Two types of variables are used in this study. They are:

Independent variable:

Independent variables are believed to cause or influence the dependent variable.⁷²

In this study independent variable is Video Assisted Teaching regarding exercise to support spine and prevent neck pain.

Dependent variable:

Dependent variable is the outcome or response due to the effect of the independent variable, which researcher wants to predict or explain.⁷²

In this study dependent variable is Practice of school children regarding exercises to support spine and prevent neck pain.

POPULATION OF THE STUDY

Population is the aggregation of all the units in which a researcher is interested. In other word population is the set of people or entities to which the result of a research is to be generalized.⁶⁸

In the present context of study, the population consists of school children from 4th to 6th standard of selected school.

TARGET POPULATION

A target population consists of the total number of people or objects which are meeting the designated set of criteria. In other words, it is aggregate of all the cases with certain phenomenon about which the researcher would like to make generalization.⁶⁸

In the present context of study, the target population were the school children from 4th to 6th standard of selected school.

ACCESSIBLE POPULATION

The accessible population refers to the aggregate of cases that conform to designated criteria.⁶⁸

In the present context of the study, the accessible population were the school children from 4th to 6th standard of selected school available at the time of data collection who met inclusion and exclusion criteria.

SAMPLING

“A sample is the subset of population selected to participate in the research study.”⁶⁷

Sample selected for present study comprises of school children from 4th to 6th standard of selected school who met the inclusion and exclusion criteria.

SAMPLING TECHNIQUE

Sampling technique is the process of selecting a portion of a population to represent the entire population for study in research.⁷¹

In this study, researcher selected the school children from 4th to 6th standard of selected school through Non probability convenient sampling technique.

Non probability convenient sampling is a technique wherein the samples are gathered in a process that does not give all the individuals in the population equal chances of being selected in the sample.⁷¹

SAMPLE SIZE

Sample size refers to the number of people who participate in the study.⁷¹ The sample size selected for this study was fulfilled with the sampling criteria

and who were willing to participate in the study. Minimum sample size (n) = to estimate population mean

$$n = z^2 \frac{s^2}{d^2}$$

where,

$$d^2$$

$m = \text{population mean guess} = 12.50s = 1.37$

$d = \text{absolute precision} = 0.4$

$z = 1.96$ at $\alpha = 5\%$ level of significance $n = \frac{(1.96)^2 (1.37)^2}{(0.4)^2}$

$n = 46$

Minimum sample size for study = 46 We have taken $n = 60$

SAMPLING SELECTION CRITERIA

Inclusion criteria: The criteria that specify characteristics that a sample population does have.

The students who are:

- willing to participate
- from 4th to 6th standard
- able to read, write and understand English, Marathi and Hindi

Exclusion criteria: It is a criteria that involve people, who do not possess the population characteristics.

The study will exclude the school children who will,

- not give consent.
- have any recent history of fractures in cervical spine, congenital or acquired deformity.

TOOL AND TECHNIQUE FOR THE STUDY

Tool is a research instrument is a device used to measure the concept of interest in a researcher project that a researcher used to collect data.⁶⁸

In this study tool consists of two sections:

Section A:

Demographic data of school children. It consists of 6 items regarding demographic variables of the school children that were developed to collect the background information of the school children.

The items included in the demographic variables were age in years, gender, residence, presence of neck pain, knowledge regarding exercises of neck pain and source of knowledge regarding exercises of neck pain.

Section B: It consists of modified checklist consisting of 9 items to measure the effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain.

Marks	Practice	
36	You are a winner	Above moderate
27-36	Doing great	
18-27	You are in the running	Below moderate
9-18	Try harder	

TABLE NO.III.2 Score interpretation for checklist.

TESTING OF THE TOOL:

The tool prepared for the data collection was tested for its feasibility, content validity and reliability.

FEASIBILITY:

Feasibility of a study means suitability of a study, determined by examining the time and money commitment, the researcher's expertise, availability of the subjects, facilities and equipment, cooperation of others and studies ethical consideration.⁶⁸

The present study was feasible in terms of time, facilities, tools and ethical consideration.

VALIDITY:

Validity means an extent to which an instrument accurately reflects the concept being examined.⁷¹

The content validity of the tool was established in consultation with the experts. After reviewing the opinion from the experts and guides modifications were done in the tool.

RELIABILITY:

Reliability means the extent to which an instrument consistently measures a concept. Three types of reliability are stability, equivalency, and homogeneity.⁶⁸

Test-retest method was used to find the reliability. The tool was found to be reliable after the calculations since the r value was 0.82 so the researcher found that the tool was reliable.

The formula applied for the test-retest method was split half method of reliability.

$$\text{Reliability} = \frac{2r}{1+r}$$

Where r = 0.82

PILOT STUDY

Pilot study is the smaller version of the proposed research study conducted to revise and refine the data collection process, the treatment intervention of the research tool. It is the miniature final run of the methodology planned for the major project.⁶⁸

A pilot study was conducted on 6 school children after taking permission from the concerned authorities of the selected school. This was undertaken to ensure the feasibility and predictability of the research methodology and the tool. Respondents were selected as per the selection criteria. The investigator gave them questionnaire for pre-test and administered video assisted teaching and then conducted the post test on the 7th day.

The collected data was analyzed using descriptive and inferential statistics. The significant difference between pre-test and post-test was found by using paired 't' test. The difference found was highly significant (t = 45.17)

After conducting the pilot study, it was found that the study was feasible and effective, the concerned authority and the samples were found to be cooperative, the questionnaire and video assisted teaching were relevant and the time and the cost of the study was within the limit.

DATA GATHERING PROCESS

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. The data collection component of research is common to all fields of study including physical and social sciences, humanities, business, etc. While methods vary by discipline, the emphasis on ensuring accurate and honest collection remains the same.

The goal for all data collection is to capture quality evidence that then translates to rich data analysis and allows the building of a convincing and credible answer to questions that have been posed. Regardless of the field of study or preference for defining data (quantitative, qualitative), accurate data collection is essential to maintaining the integrity of research. Both the selection of appropriate data collection instruments (existing, modified, or newly developed) and clearly delineated instructions for their correct use reduce the likelihood of errors occurring.

Data collection is one of the most important stages in conducting research. You can have the best research design in the world but if you cannot collect the required data, you will not be able to complete your project. Data collection is a very demanding job which needs thorough planning, hard work, patience, perseverance and more to be able to complete the task successfully. Data collection starts with determining what kind of data required followed by the selection of a sample from a certain population. After that, you need to use a certain instrument to collect the data from the selected sample.⁷³

ETHICAL CONSIDERATION:

The investigator planned to do data collection in the following way:

- Prior to the collection of the data, written permission was obtained from the college principal.
- Informed consent and ascent were taken from all the subjects prior to data collection.
- The period of data collection commenced on

GATHERING PROCESS OF SUBJECTS

One day prior to the study, investigator visited the principal of selected school in order to get introduced to the concerned class teacher to get an idea about schedule of students in order to find a particular period to conduct the study. On the next day the selected school children were asked to gather in the hall to start with data collection

Administration of tool (Pre-test)

The demographic data and modified checklist were given to the school children, after giving instructions on how to answer the tool. Demographic data was collected from the students after 10 minutes and each child was checked individually if he/she practices the exercise to support spine and prevent neck pain.

Administration of video assisted teaching

After completing the pretest, video assisted teaching was administered regarding exercises to support spine and prevent neck pain. The teaching was interactive session wherein the school students were encouraged to come with their own thoughts, opinion and feedback.

Conducting posttest

A post test was conducted on day 7 after administering video assisted teaching. Modified checklist was used by the researcher to evaluate the effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among the school children.

PLAN FOR DATA ANALYSIS:

Descriptive statistics allow the researcher to organize the data in ways that give meaning and facilitate insight; examples are frequency distribution and measures of central tendency and dispersion.⁶⁷

Inferential statistics allow inference from a sample statistic to a population parameter commonly used to test the hypothesis of similarities and difference in subjects of the sample under study.⁶⁷

The data obtained was planned to be analyzed on the basis of the objectives of the study using descriptive and inferential statistics.

Steps of data analysis:

- The data was arranged in data sheet.
- Description of the subjects with respect to demographic variable was presented using frequency and percentage.
- Mean, standard deviation and mean score was used to evaluate the effectiveness of video assisted teaching.
- Paired t test was used to evaluate the effectiveness of video assisted teaching.
- Data was presented in tables, graphs and diagrams. The score interpretation of checklist was grouped as above moderate and below moderate. The association between pretest and posttest practice score of the school students was tested using chi square test for data interpretation.

SUMMARY:

This chapter of methodology dealt with research approach, research design, identification of target population, accessible population, sampling, sample, sampling technique, sample size, inclusion and exclusion criteria of subjects, tool preparation, feasibility of the study, validity and reliability of research tool, pilot study, data collection process and plan for data analysis, which was helpful in a better way to collect data from the subjects so as to make the study effective.

CHAPTER IV**DATA ANALYSIS AND INTERPRETATION**

The data, after collection, has to be processed and analyzed in accordance with the outline drawn for the purpose at the time of developing the research plan. This is essential for a scientific study and for ensuring that we have all relevant data for making coding, classification and tabulation of collected data so that they are amenable to analysis. The term analyses refer to the computation of certain measures along with searching for patterns of relationships that exist among data-groups.⁷⁴

The collected data are known as raw data, the raw data are meaningless unless certain statistical treatment is given to them. The analysis of data means to make the raw data meaningful or to draw some results from the data after proper statistical or analytical treatment.⁷⁴

The main purpose of analysis of data are as follows;

1. To make the raw data meaningful.
2. To test null hypothesis.
3. To test the statistical significance of data or related data.
4. To draw the inference or make generalization.
5. To estimate parameters.

STATEMENT OF THE PROBLEM

“Effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school.”

OBJECTIVES OF THE STUDY

- PRIMARY OBJECTIVE:**
1. To assess the pre-existing practices regarding exercise to support spine and prevent neck pain among school children of selected school.

SECONDARY OBJECTIVE:

1. To assess the effectiveness of video assisted teaching on practices regarding exercise to support spine and prevent neck pain among school children of selected school.
2. To find out the association between the effectiveness of video assisted teaching on practices regarding exercise to support spine and prevent neck pain with selected demographic variables among school children of selected school.

HYPOTHESIS

H₀- There will be no significant difference between practice regarding exercise to support spine and prevent neck pain with selected demographic variables.

H₁- There will be significant difference between practice regarding exercise to support spine and prevent neck pain with selected demographic variables.

DATA INTERPRETATION, ORGANIZATION OF DATA: TABLES, FIGURES AND GRAPHS

The data collected of the study was classified, organized and analyzed under following sections as per the objectives of the study:

SECTION I

Deals with analysis of demographic data of the school children of selected school in terms of frequency and percentage.

SECTION II

Deals with analysis of data related to assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school in terms of frequency and percentage.

SECTION III

Deals with analysis of data related to the effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school.

SECTION IV

Deals with analysis of data related to the association between pre-test practice regarding exercises to support spine and prevent neck pain among school children of selected school with their selected socio demographic variable.

SECTION I

Deals with analysis of demographic data of the school children of selected school in terms of frequency and percentage.

Table No.IV.I.1: Frequency & percentage distribution of the school children from selected school

Sr. no	Variable	Groups	Frequency	Percentage
1	Age	9-10 years	36	60.00
		10-11 years	24	40.00
2	Gender	Male	34	56.67
		Female	26	43.33
3	Residence	Urban area	0	0.00
		Rural area	60	100.00
4	have neckpain?	Yes	35	58.33
		No	35	58.33
5	Do have knowledge regarding exercises for neck pain	Yes	3	5.00
		No	57	95.00
6	yes, then source of knowledge	Friend	0	0.00
		Relative	3	100.00
		Mass Media	0	0.00
		Any other	0	0.00

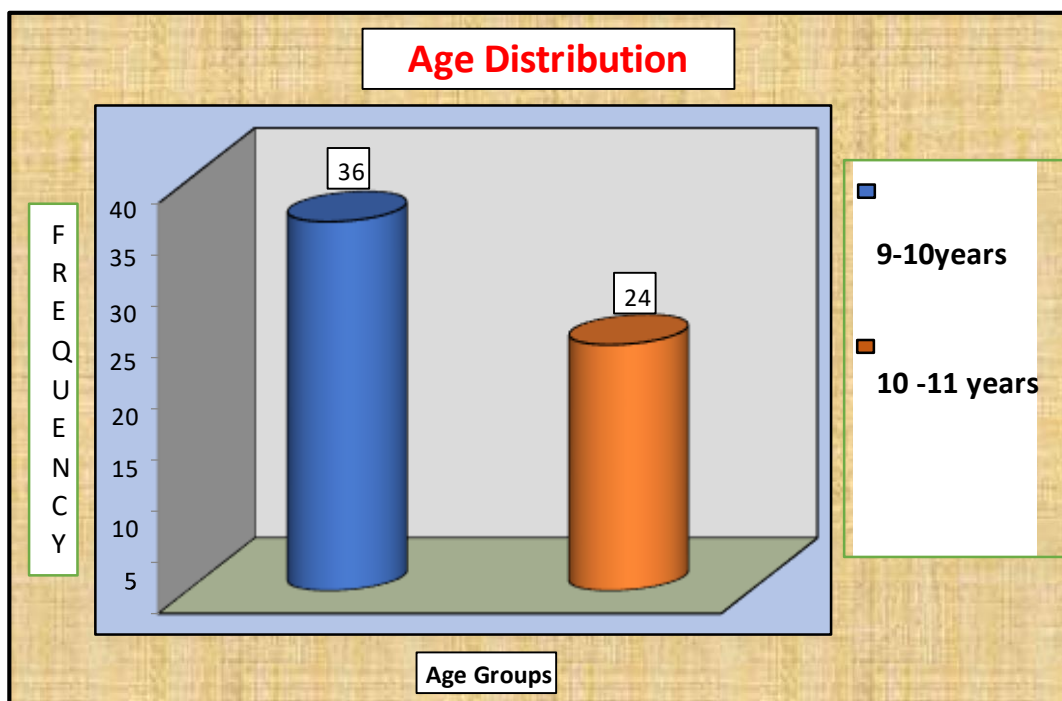


Figure No.IV.I.1: Cylinder Bar diagram showing distribution of the school children from selected school according to Age

The above table and following figure show that, in the study, according to age of the school children of selected school, 60% of them were from age group 9-10 years and 40% from the 10-11 years of age.

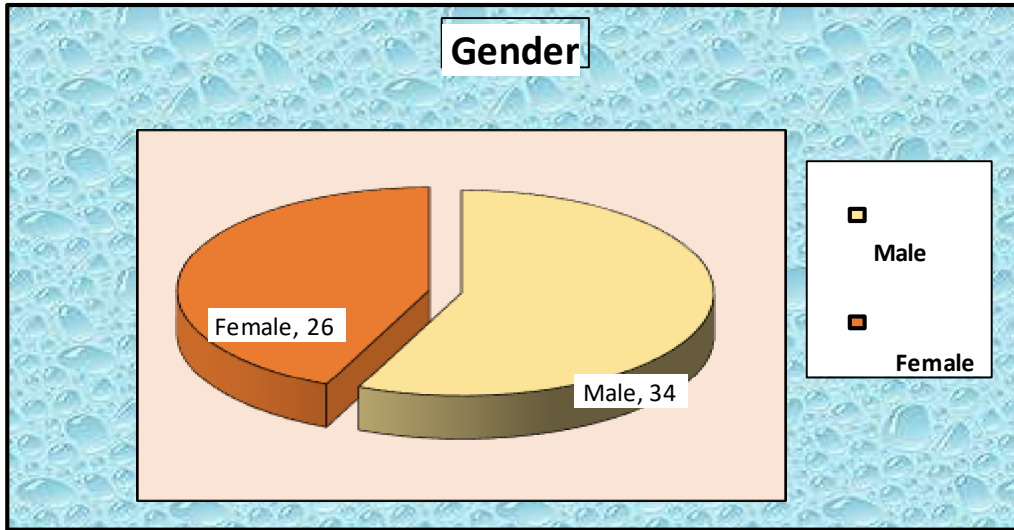


Figure No.IV.I.2: Bar diagram showing distribution of the school children from selected school according to Age

The above table and following figure show that, in the study, according to age of the school children of selected school, 56.67% of them were male child and 43.33% were female child.

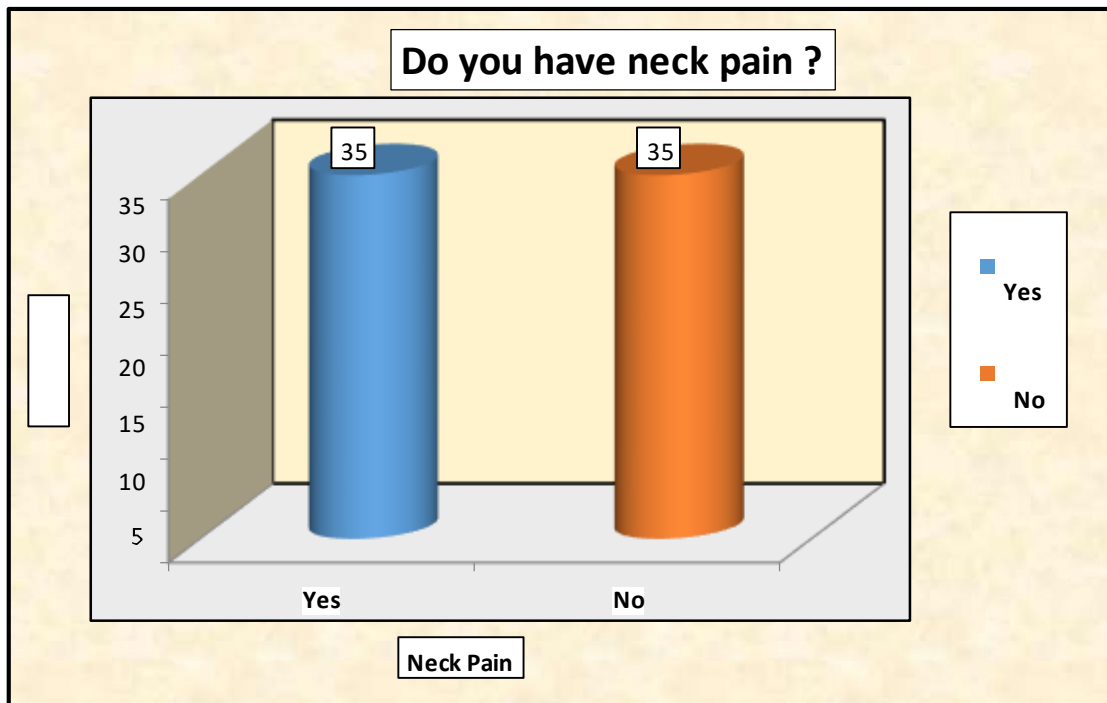


Figure No.IV.I.3: Cylinder bar diagram showing distribution of the school children from selected school according to having neck pain

The above table and following figure show that, in the study, to the question do you have neck pain, 50% of the school children of selected school answered yes and 50% of them answered no.

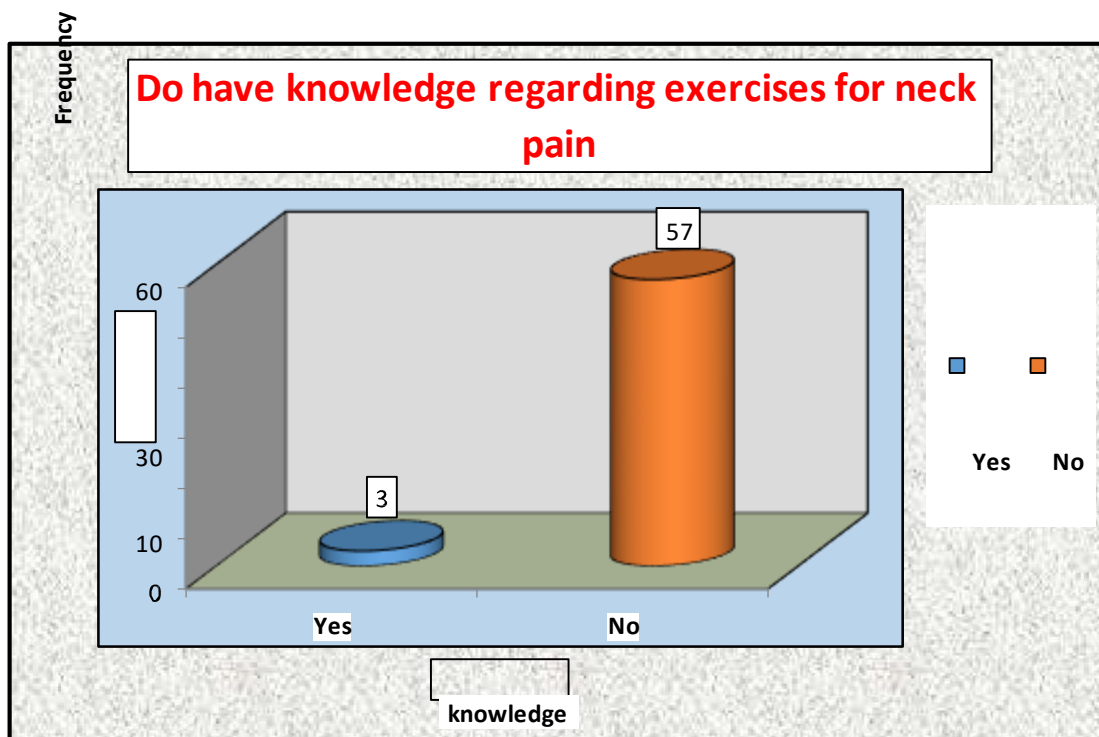


Figure No.IV.I.4: Cylinder bar diagram showing distribution of the school children from selected school according to have knowledge regarding exercises for neck pain.

The above table and following figure show that, in the study, to the question Do have knowledge regarding exercises for neck pain, 5% of the school children of selected school answered yes and 95.00% of them answered no.

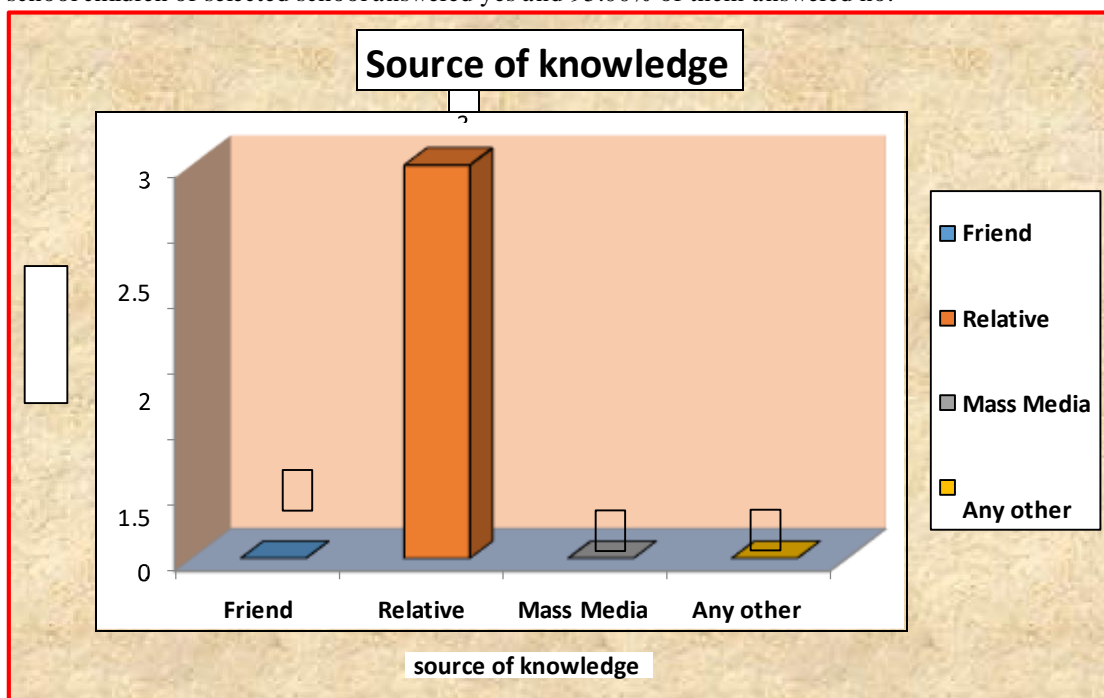


Figure No.IV.I.5: Bar diagram showing distribution of the school children from selected school according to source of knowledge

The above table and following figure show that, in the study, to the question Doyou have knowledge regarding exercises for neck pain, those school children of selected school answered yes, out of these all 100% answered they got the knowledge from relatives

SECTION II

Deals with analysis of data related to assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school in terms of frequency and percentage.

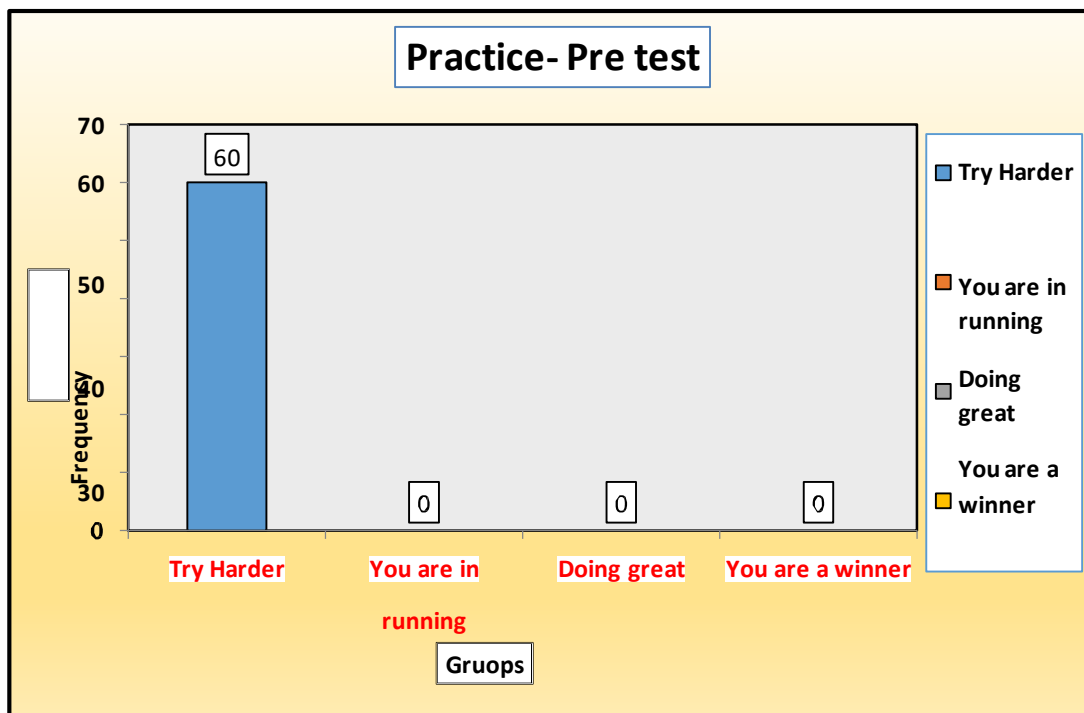


Figure No.IV.II.1: Assessments of Practice Pre-Test

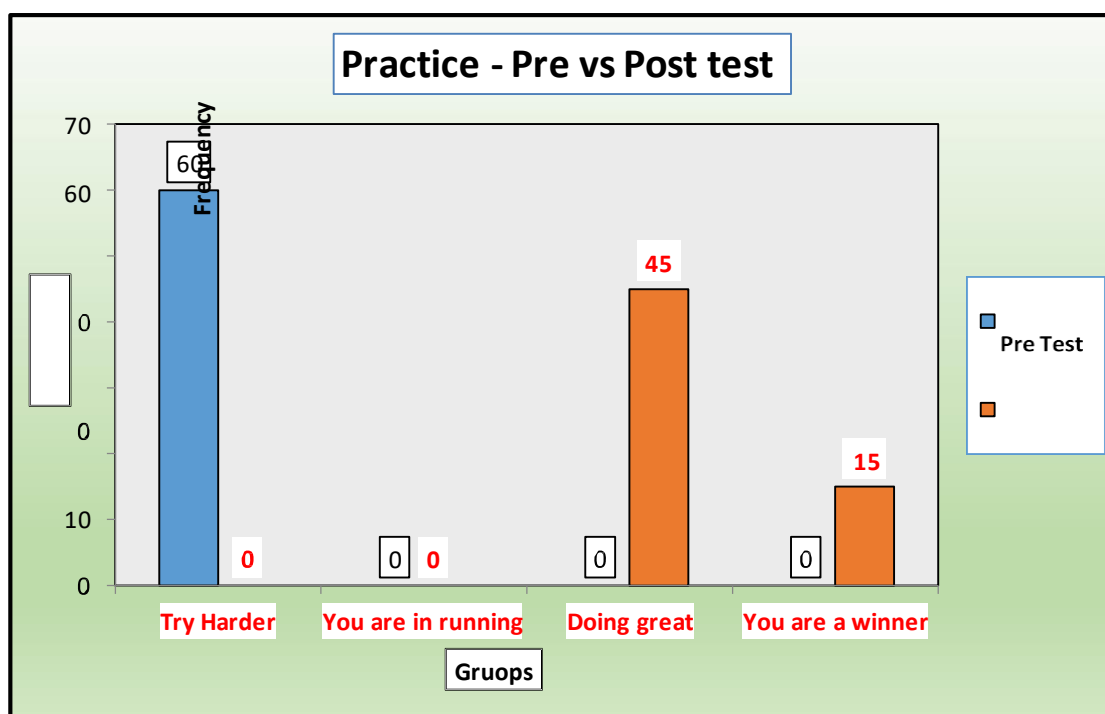
At the time of pre-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, all 100% of school children got the remark try harder.

Average practice score at the time of pre-test was 11.81 with standard deviation of 1.09. The minimum score of practice was 10 with maximum score of 15.

Figure No.IV.II.2: Assessments of Practice post Test

At the time of post-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, 75% of school children were in the group doing great and 25% of them were in the winnergroup.

Average practice score at the time of pre-test was 34.90 with standard deviation of 0.87. The minimum score of practice was 32 with maximum score of 36.



Deals with analysis of data related to assessment of the pre & posttest practice regarding exercises to support spine and prevent neck pain among school children of selected school in terms of frequency and percentage. For the assessment purpose the total score of practice was divided in to four groups like try harder (9-18 score), you are in running (19-27 score), doing great (28-35 score) and you are a winner (36 score)

Pre-Test:

At the time of pre-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, all 100% of school children got the remark try harder.

Average practice score at the time of pre-test was 11.81 with standard deviation of 1.09. The minimum score of practice was 10 with maximum score of 15.

Post Test:

At the time of post-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, 75% of school children were in the group doing great and 25% of them were in the winnergroup.

Average practice score at the time of posttest was 34.90 with standard deviation of 0.87. The minimum score of practice was 32 with maximum score of 36.

SECTION III

Deals with analysis of data related to the effectiveness of video assistedteaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school.

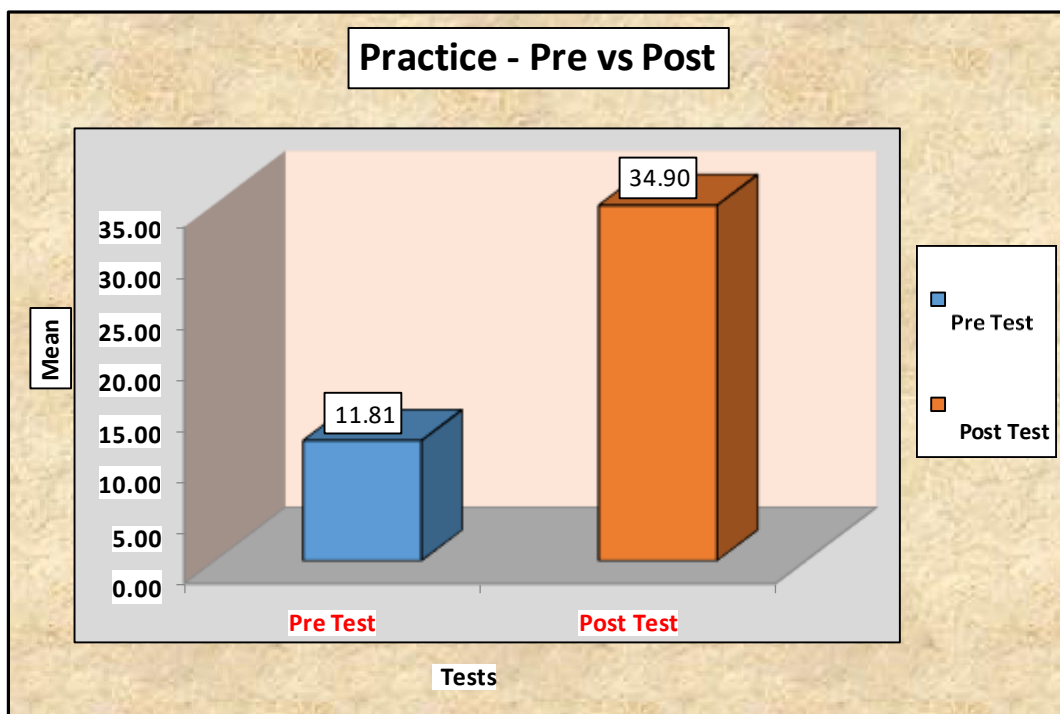


Figure No.IV.III.1: Bar diagram showing comparison of the pre and post-testPractice score

The comparisons of the pre-test and post-test means of the practice were done by the paired t test. The pre-test average score was 11.81 with standard deviation of 1.09. The post-test average score was 34.90 with standard deviation of 0.87. The test statistics value of the paired t test was 130.6 with p value 0.00. The p value less than 0.05, hence reject the null hypothesis. That means there is significant difference in pre and post-test practice.

It shows that, video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school was effective

SECTION IV

Deals with analysis of data related to the association between pre-test practice regarding exercises to support spine and prevent neck pain among school children of selected school with their selected socio demographic variable.

Table IV.IV.1: Association of practice with demographic variables

Variable	Groups	Practice		Chi Square	d.f.	p Value	Significance
		elowMd	boveMd				
Age	9-10 years	31	9	54.48	1	0.034	Significant
	10-11 years	15	9				
Gender	Male	30	10	45.87	1	0.015	Significant
	Female	16	10				
Residence	Urban area	0	0	* Cannot compute Chi-Square			
	Rural area	46	14				
Do you have neck pain?	Yes	25	10	1.28	1	0.26	Not Significant
	No	21	4				

Do you have knowledge regarding exercises for neck pain	Yes	2	1	0.17	1	0.68	Not Significant
	No	44	13				
If yes, then source of knowledge	Friend	0	0	* Cannot compute Chi-Square			
	Relative	2	1				
	Mass Media	0	0				
	Any other	0	0				

SUMMARY:

This chapter dealt with analysis and interpretation of data collected for the study. The analysis interprets that video assisted teaching was effective in improving practice of students regarding exercises to support spine and prevent neck pain among school children of selected school. There was a significant association found between selected demographic variables and posttest knowledge score.

CHAPTER-V**SUMMARY, FINDINGS, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS**

This chapter presents brief summary of the study and its significant findings. It also includes the implications and recommendations for further study.

The aim of the study was, effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school.

The design used for the study was pre-experimental, one group pre-test and post-test research design. The study was conducted at selected school. The Sample size of study was 60 school children from selected school.

The reliability of the practice tool was determined by split half Method. The tool was administered to 10 samples. Reliability of the practice tool was found to be 0.82.

The pilot study was conducted, to assess the feasibility of the study and to decide the statistical analysis and practicability of research. It was found feasible.

STATEMENT OF THE PROBLEM:

“Effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school.” **OBJECTIVES OF THE STUDY:**

PRIMARY OBJECTIVE:

1. To assess the pre-existing practices regarding exercise to support spine and prevent neck pain among school children of selected school.

SECONDARY OBJECTIVE:

1. To assess the effectiveness of video assisted teaching on practices regarding exercise to support spine and prevent neck pain among school children of selected school.
2. To find out the association between the effectiveness of video assisted teaching on practices regarding exercise to support spine and prevent neck pain with selected demographic variables among school children of selected school.

HYPOTHESIS:

H0- There will be no significant difference between pre test and post test level practice regarding exercise to support spine and prevent neck pain with selected demographic variables.

H1- There will be significant difference between pre test and post test level practice regarding exercise to support spine and prevent neck pain with selected demographic variables.

MAJOR FINDINGS OF THE STUDY

The analysis of the demographic data of the study samples gave an idea about the general characteristics of the school children from selected school.

The following are the major findings of the study.

SECTION –I**Demographic variables**

1. According to age of the school children of selected school, 60% of them were from age group 9-10 years and 40% from the 10-11 years of age.
2. In the study, according to age of the school children of selected school, 56.67% of them were male child and 43.33% were female child.
3. According to age of the school children of selected school, no one of them were from urban area and all 100% from the rural area.
4. To the question, do you have neck pain, 58.33% of the school children of selected school answered yes and 41.67% of them answered no.
5. To the question, do you have knowledge regarding exercises for neck pain, 5% of the school children of selected school answered yes and 95.00% of them answered no.
6. To the question, do you have knowledge regarding exercises for neck pain, those school children of selected school answered yes, out of these all 100% answered they got the knowledge from relatives.

SECTION-II**Assessments of Practice - PRE & POST test**

For the assessment purpose the total score of practice was divided in to four groups like try harder (9-18 score), you are in running (19-27 score), doing great (28- 35 score) and you are a winner (36 score).

Pre-Test:

At the time of pre-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, all 100% of school children got the remark try harder.

Average practice score at the time of pre-test was 11.81 with standard deviation of 1.09. The minimum score of practice was 10 with maximum score of 15. Post Test:

At the time of post-test, assessment of the practice regarding exercises to support spine and prevent neck pain among school children of selected school, 75% of school children were in the group doing great and 25% of them were in the winner group.

Average practice score at the time of pre-test was 34.90 with standard deviation of 0.87. The minimum score of practice was 32 with maximum score of 36.

SECTION-III**Comparison of the pre and post-test Practice score**

The comparisons of the pre-test and post-test means of the practice regarding exercises to support spine and prevent neck pain among school children of selected school were done by the paired t test.

The pre-test average score was 11.81 with standard deviation of 1.09. The post-test average score was 34.90 with standard deviation of 0.87.

The test statistics value of the paired t test was 130.6 with p value 0.00.

The p value less than 0.05, hence reject the null hypothesis. That means there is significant difference in pre and post-test practice.

Shows that, video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school was effective.

SECTION IV**Association of practices core in relation to demographic variables**

The chi square test was used to see the association between pre-test practice regarding exercises to support spine and prevent neck pain among school children of selected school with their selected socio demographic variable. The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables age and gender, the p value of the association test with pre-test practice was less than 0.05. That means, the practice of school children regarding exercises to support spine and prevent neck pain was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the pre-test practice.

No Significant Association:

For the demographic variables having neck pain and knowledge regarding exercises for neck pain, the p value of the association test with pre-test practice was more than 0.05. That means, the practice of school children regarding exercises to support spine and prevent neck pain was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the pre-test practice.

DISCUSSION

The findings of the present study were in support with the findings of the study conducted by Mohan Sofiya et al. (2015) conducted a Quasi-experimental Study on Effectiveness of Video Assisted Teaching on First Aid for Minor Injuries among National Cadet Corp Students in a selected School, Telangana. The sample for the study comprised of 50 NCC Students selected using simple random sampling. The data was collected between 17th Feb. to 23rd Feb. 2015, by using structured knowledge questionnaire. The data was analyzed using descriptive and inferential statistics. The difference between pre-test and post-test level of knowledge was found through paired 't' test. It revealed that calculated value 15.76 was higher than tabulated 't' value 2.02. It shows that VAT was found to be effective at 0.05 level as there was significant increase in the level of knowledge on post-test. Association between knowledge and religion, Education of mother, Education of father, occupation of mother, were significantly associated at $P < 0.05$ level, however variables such as age, gender, occupation of father, monthly income, were not found to be significant.

Researcher encouraged from this study and conducted a study on effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain.

In present study "Effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school." a pre-experimental one group pre-test post-test research design was used. Total 60 school students were selected using non probability convenient sampling technique as per the inclusion criteria. Structured knowledge questionnaire and checklist was used as an instrument. Prior to collection of data, researcher obtained permission from competent authority of the selected school and informed consent and assent was taken from the parents and the participants. Pre-test was conducted to assess the practice of the students regarding exercises to support spine and prevent neck pain on the same day video assisted teaching on exercises to support spine and prevent neck pain was administered to the students. On day 7 post test was conducted using the structured checklist to find the effectiveness in practice of students regarding exercises to support spine and prevent neck pain.

The findings of the present study showed that there was improvement in the practice of the students regarding exercises to support spine and prevent neck pain. The comparisons of the pretest and posttest means of the practice were done by the paired t test. The pretest average score was 11.81 with standard deviation of 1.09. The posttest average score was 34.90 with standard deviation of 0.87. The test statistics value of the paired t test was 130.6 with p value 0.00. The p value less than 0.05, hence reject the null hypothesis. That means there is significant difference in pre and posttest practice. Shows that, video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school was effective.

SUMMARY:

The purpose of the present study was to assess the Effectiveness of video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school.

The pre-experimental one group pre-test post-test research design was used for the study which consisted of 60 samples that were selected by convenient sampling technique. The content validity and reliability of tool was done which suggested that tool was reliable. Pilot study was conducted on 10 samples and the feasibility of the study was established. After that the final study was conducted, and the data collected in the final study was analyzed using descriptive and inferential statistics. The studies found that

majority of school students had improper practice, but after video assisted teaching there was improvement in the practice of the

students. This Shows that, video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school was effective.

CONCLUSION:

From the study findings it is concluded that video assisted teaching on practice regarding exercises to support spine and prevent neck pain among school children of selected school was effective.

LIMITATIONS:

Due to COVID-19 pandemic situations:

1. The study was confined to specific school which imposes limits to any largergeneralization.
2. The data was collected from 60 samples to find out the effectiveness. It couldbe done on more samples for the larger generalization.
3. The study was restricted only to school students of 4th to 6th standard of theselected school.

NURSING IMPLICATIONS:

The findings of the study have implications in various areas of nursing education, nursing practice, nursing administration and nursing research.

Nursing education:

Nurse educators utilize the findings from research in structuring programs of study in developing course contents and in designing methods of teaching. Nursing is a dynamic process, which involves quality based on scientific body of knowledge and dissemination of research knowledge into practice. Nursing professionals find the health promotion very relevant because it applies across the span and is useful in variety of settings. Nurses and midwives are in a unique position by virtue of their education, numbers, and diversity of practice areas to contribute to the health of children. In addition, by conducting research the nursing faculty demonstrates the students, the integral part of nursing research in the profession. The study can be used to educate children of various schools.

Nursing practice:

Nurses play an important role in preventive aspect than in curative aspect. Practice oriented research is the key to discovery for improving nursing practice and strives for measurable benefits to the client whom the nurse serves. The scope of nursing practice is the range of roles, functions, responsibility and activities which registered nurses are educated and authorized to perform. Nursing practice is focusing on promoting an optimum level of health for persons who are sick or well. Scientific studies are needed to understand and explain the functions and forms of nursing care. In this study nurses with their experiences in nursing practice can prevent and treat common neck pain in children.

Nursing administration:

Nursing administration should implement outreach program to make the public aware of common neck pain problems in children. There should be health education material, administrative support and adequate funds provided to conduct the programmed regarding awareness among the parents. The nurse administrator need to be instrumental in starting separate outpatient clinics for children with problems associated with neck pain.

RECOMMENDATIONS:

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

1. A self-instructional module, structured teaching programme can be developed for adolescents and its effects can be evaluated.
2. A follow up study of Video Assisted Teaching could be carried out to find out the effectiveness in terms of retention of knowledge.
3. Repetitive periodic educational sessions regarding exercises to support spine and prevent neck pain should be carried out to ensure that the public are aware about the exercises.
4. A large-scale study can be carried out with different demographic characteristics to generalize the findings.
5. A study can be carried out on knowledge regarding exercises to support spine and prevent neck pain.

6. A comparative study can be conducted to assess the knowledge, practice and attitude regarding exercises to support spine and prevent neck pain among health professional and non- health professional.

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