EFFECTIVENESS OF INTRAOPERATIVE VIDEO THERAPY ON ANXIETY AMONG PATIENTS UNDER SPINAL ANESTHESIA AT VALLI HOSPITAL, ERODE

A DISSERTATION SUBMITTED TO THE TAMILNADU Dr. M.G.R MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF AWARD OF

MASTER OF SCIENCE IN NURSING

MEDICAL SURGICAL NURSING (*Critical Care Nursing*)

BY

30109003

DHANVANTRI COLLEGE OF NURSING

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EXAMINERS,

1. ……..

2. ……..

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“When eating bamboo sprouts, remember the man who planted them”.

-Chinese proverb

Feeling gratitude and not expressing it is like wrapping a present and not giving it. To speak gratitude is courteous and pleasant, to enact gratitude is generous and noble, but to live gratitude is to touch heaven.

‘‘I thank you, Lord, for blessings you give me on my way;

May I for these be grateful and praise you every day.’’

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ABSTRACT

Background: Awareness of surroundings during intraoperative period is a well known stressor for the surgical patients, especially spinal anesthesia patients. Apart from the sedative agents, video therapy can be used as a supportive therapy to reduce the level of anxiety among patients under spinal anesthesia. **Objectives:** To assess the effectiveness of intra operative video therapy on anxiety among patients under spinal anesthesia. **Design:** Quasi-experimental design, where Pretest Posttest Nonequivalent Group design, **Setting:** Valli hospital, Erode, Tamilnadu. **Participants:** Thirty patients under spinal anesthesia fulfilling the inclusion criteria. **Selection criteria:** Patients undergoing spinal anesthesia for the surgeries like fistulectomy, hemorrhoidectomy, hernia repair, appendicectomy and fissurectomy, with the age group of 20-60 years and both gender were included. Patients with hearing and visual impairment, sedation, spinal anesthesia converted to general anesthesia and unstable vital parameters were excluded. **Methods:** Out of 30 patients, 15 patients were selected as experimental group and 15 patients were selected as control group by convenient sampling technique. Experimental group were shown video-therapy by using portable DVD player with the head phone, instead of using eye pad (control group). Level of anxiety was measured by Spielberger State Anxiety Inventory (STAI-S) before and after the procedure. **Results:** The results show that most of the patients under spinal anesthesia were male, non medical workers, and undergone fissurectomy, fistulectomy and

hemorrhoidectomy surgeries and most of their surgeries had completed in less than an hour. In posttest, 53% had no/low anxiety in control group, whereas 87% had no/low anxiety in experimental group. The patient's level of anxiety reduced from the mean value of 36.33±8.96 and 35.67±7.78 to 34.33±8.06 and 28.07±5.54 in control and experimental group respectively. Paired 't' test score was 10.43 and unpaired 't' test score was 2.42, which is significantly effective at $P<0.05$. Chi square test showed only trait anxiety in control group and duration of surgery and trait anxiety in experimental group have significant association ($P<0.05$) and other demographic variables (age, gender, name of surgeries, previous history of surgery, occupation) have no significant ($P>0.05$) association with post test score of level of anxiety in both control and experimental group. **Conclusion**: Video therapy is an effective intervention to reduce the level of anxiety among patients under spinal anesthesia. **Clinical applications:** Video therapy can be employed all kind of painful medical and surgical procedures as a diversional therapy, instead of using pharmacological interventions.

CHAPTER-I

INTRODUCTION

The anticipation of surgery and its experience is well known stressor to the patients. The unfamiliar, sterile and cold environment of the operation theatre makes surgery a potentially unpleasant and uncomfortable experience. Anxiety experienced by patients undergoing hospitalization for surgery has been viewed as a normal human response to a stressful event, (**Ridner, 2004)**.

Shevde & Panagopoulos (1991), has suggested that the sounds of the operating room, monitor alarms, surgical instruments being unpacked, narrowness of the table and low temperature, all give rise to increased anxiety during surgery under local/ regional anesthesia. Aspects associated with the actual surgery such as the surgeon's touch, possible repeated needle punctures or potentially insufficient use of local anesthesia have also given rise to increased apprehension. As a result of such concerns the majority of patients prefer general anesthesia to local anesthesia.

A few studies have demonstrated dislike of being conscious, needle phobia and previous adverse experiences of local anesthesia are some of the common reason that found many people desire for general anesthesia rather than local or regional anesthesia, (**Gnanalingam and Budhoo, 1998**).

In the larger metropolitan hospitals of China, the ratio of general to regional anesthesia is now 1:1; however, in district hospitals, regional

anesthesia is widely practiced. The reasons for its popularity are anesthetists generally feel it is safer and prefer it; regional anesthesia is a lot cheaper than general anesthesia, **(Prithvi Raj P, 2003).**

The ambulatory surgery center in the North pavilion (1998), reported approximately 56% (7074 of 12620) of our patients had surgery under various regional anesthesia such as infra clavicular block (15), caudal block (21), wrist block (21), arterial cervical plexus block (24), epidural (62), IV regional anesthesia (85), ankle block (240), supra clavicular block (387), axillary block (492), femoral block (536), continuous catheter block (807), spinal anesthesia (899), lumbar plexurs (982), para vertebral block (1145), interscalene block (1567) and sciatic nerve block.

Department of anesthesiology, in duke university medical center (2002), reported that their division of ambulatory anesthesia provided anesthesiologist provided anesthesia coverage to 25348 patients from July 13, 1998 to December 2002. Approximately 61.5% of their patients had surgery under regional anesthesia (15589 of 25348), which includes spinal anesthesia, epidural, paravertebral block, continuous peripheral nerve block, femoral block, auxillary block, sphenous block, superficial cervical plexuses.

Centers in India (2003), reported that regional anesthetic techniques such as spinal and epidurals are widely used. Spinal anesthesia is a common technique even in remote areas of the country.

The department of anesthesia and critical care, in Meenakshi Mission Hospital, Madurai (2010), reported that they have done 7543 general anesthesia, 2850 spinal/epiduaral anesthesia, 615 plexus blocks and 104 nerve blocks for various therapeutic endoscopy, laproscopy and surgical procdures.

Spinal anesthesia is one of the mostly performed regional anesthesia for the following surgeries which are done below the level of umbilicus such as operations in the lower gastro intestinal tract, gynecological operations, urological operations, perineum and genitalia operations and all operation on the leg. The patients contraindicated for spinal anesthesia include clotting disorders, hypovolaemia, patient refusal for the administration, either due to lack of knowledge or preference for general anesthesia, unco-operative patients, such as children, mentally challenged individuals, patients with psychiatric disorder, anatomical difficulties to administer the spinal anesthesia, and patients are suffered by sepsis, septicaemia and neurological disease**, (Benjamin's ole sein, 2010).**

Xie and Liu (2004), reported about the practice of spinal anesthesia in China. Questionnaires were sent to 237 hospitals over six geographic areas, including some military hospitals. The response rate was 38% (90 hospitals). There were 1,304,214 documented spinal blocks in these hospitals. This survey revealed that spinal anesthesia was used extensively in China for various types of surgery, ranging from lower abdominal to the lower extremities. The incidence of total spinal anesthesia as a complication was reported to be only 0.013%, and about half of these cases required intubation and ventilation.

Safe anaesthesia is of vital importance with any surgery. Perioperative anxiety is a great concern that has the potential effect to influence the smooth induction, maintenance and recovery from anaesthesia**.** Unlike general anesthesia, the awareness of the surroundings in the operating theatre during spinal anesthesia may potentially increase patient anxiety level, **(Kuvan.C, 2004).**

Anxiety concerning anaesthesia, pain, physical injuries, isolation, prognosis, possibilities of deformity or loss of self-control may be stressful to patients undergoing surgery. Anxiety activates the sympathetic nervous system, characterized by an increase in catecholamine concentration, heart rate and blood pressure and increased glucocorticoid levels; it also affects immune responses, **(Moon JS, 2001).**

Fear of anesthesia (85%), fear of surgery (77%), block not working (65%), misinformation from lay people, family, friends, or surrounding media (59%), needle-phobia (54%), little pre-operative anesthetic information (37%), recall of previous bad experience (32%), fear of complications (pain/nerve damage) (29%) and detailed pre-operative anesthetic information (15%) were reported by anesthesiologists as the most common causes of patients' anxiety**, (Hatem A Jlala, 2010).**

Pre-medication and sedation is commonly used as an adjunct to create anxiolysis and reduce stress which could be provoked by being awake in the

theatre environment. However, sedation is not without its disadvantages, **(Absalom & Adapa, 2007)**.

Different methods have been used to alleviate anxiety and fear during the peri-operative period. Some of these methods include a warm and friendly hospital and operating theatre environment, appropriate information and explanations regarding the anesthesia, surgery and perioperative course, pharmacological methods such as premedication and intra-operative sedation and complementary therapies such as music therapy, hypnosis, acupressure and guided imagery have also been shown to decrease patient anxiety during the perioperative period, **(Man AK and Yap JC, 2004).**

Watching video is the one of the most effective diversional therapy, which employed by the medical person to overcome psychological stress and anxiety of the patients during medical and surgical procedures. Video therapy is not only protecting from visual and auditory stimuli but also providing the pleasant environment to the patients as well as physician while doing the painful procedures. Further it will enhance the patients satisfaction and reduce the usage of analgesics and sedation while before, during and after the procedure, **(Heewan Yang, 2010)**.

Friedman SB (1992), examined the effects of television viewing on preoperative anxiety in the preoperative setting. A purposive sampling method was selected for the present study to select the sample using certain criteria. The sample consisted of adult patients 18 to 77 years old who were admitted to

the preoperative area at least 2 hours before surgery. A total of 76 subjects participated in the study. However, due to incomplete data on seven of the questionnaires, 7 of the subjects were rejected. Of the remaining 69 subjects, 39 had no television access and the remaining 30 had watched the television. Statistical comparisons of the two groups suggest that there was a significant difference in the anxiety levels of the two groups. Those subjects who watched television in the preoperative area had significantly lower levels of anxiety than those who did not.

Anxiety can have profound effects on patient's health, which affects them in a variety of ways both physically and psychologically. So the nurse should take prompt action to help the patients to overcome from anxiety. With recent progress in audio-visual technology, the researcher aimed to evaluate whether watching video by the portable DVD player with the head phone reduces intra-operative patient anxiety.

NEED FOR STUDY

In the present scenario surgeries are found to be the treatment modality for many disease conditions. In India spinal anesthesia is one of the common regional anesthesia and it is used among 40-45% of surgery cases**,** (**Divekar VM, 2005).**

Ambrose Rukewe (2010), conducted a cross sectional study on use of regional anesthesia by anesthesiologists in Nigeria. There is growing interest in

the use of regional anesthesia worldwide. A self-administered questionnaire was mailed to a randomly generated list of anesthesiologists in Nigeria. From 196 questionnaires, 140 anesthesiologists (71.4%) responded. Regular use of spinal, epidural, and peripheral nerve blocks was 92.9%, 15%, and 2.9%, respectively.

Gardner (1944), attempted to show the importance and practical application of local and regional anesthesia by a statistical report from the Department of Anesthesiology, of U.S. Naval Hospital. It denotes that the total number of anesthesia administered for surgery was 6233, out of which 1163 or 17.4% were local and regional anesthesia**.**

Mathews, et. al., (1981) suggested patients who undergo surgery experience acute psychological distress in the pre-operative period. These fear and anxiety manifest themselves as uncertainty, loss of control and decreased self-esteem, anticipation of postoperative pain, and fear of separation from family.

Clarke DM (1997), conducted a study to assess the Psychiatric disturbance and acute stress responses in surgical patients. Thirty-seven admissions to a general surgical unit were assessed on admission and immediately prior to discharge. Measures were made of depression, anxiety, cognitive impairment, post-traumatic stress symptoms, severity of illness, level of physical functioning, degree of hospital stress and coping style. There was a significant reduction in anxiety scores postoperatively. Twenty-seven per cent of patients

developed high levels of acute post-traumatic stress symptoms and these correlated with depression at admission and intra-hospital stress. Depression at discharge was related to depression at admission, physical functioning and coping style. Hence he emphasised that the interventions could be directed at screening a patients with anxiety, minimizing stress, and encouraging adaptive mechanisms of patients.

A variety of objective and subjective methods are available for measuring perioperative anxiety. Objective estimates of perioperative anxiety include indirect measurements of sympathetico-adrenal activity using heart rate and blood pressure, or skin conductance, Plasma cortisol, urinary catecholamine excretion and recently plasma catecholamines have been used as more direct measurements of sympathetico-adrenal activity. Subjective methods include self assessment by the patient using a multiple affect adjective check list, a linear analogue anxiety scale or more complex questionnaires which attempt to distinguish immediate 'state' anxiety from underlying 'trait' anxiety. Observer ratings may also be used, (**Jenkins JG, 1988).**

Mitchell MJ (2008), conducted a study on influence of the environment on anxiety during surgery under local/regional anaesthesia. 214 patients were provided with a questionnaire on the day of surgery for return by mail 24-48 hours following surgery. The number of patients experiencing a degree of anxiety on the day of surgery was 77%. Many patients experienced anxiety resulting from the thought of being awake (60%), possibly feeling the surgeon

(60%), potentially seeing their body cut open (47%), the thought of the numbness wearing off too quickly (53%) or the thought of local/ regional anaesthesia being more painful (61%).

Costa MJ (2001), conducted a phenomenological study to explore ambulatory surgery patients' perceptions and views of the perioperative experience. Sixteen patients who underwent abdominal surgical procedures in the ambulatory surgery center of a large teaching hospital in the northeastern United States. Intensive semi structured interviews were used to collect data. Patients were interviewed one week after surgery. Data analysis was aimed at gaining understanding of the lived experience of ambulatory surgery patients. Results indicate that patients in this study were not prepared adequately for the perioperative experience, suffered needlessly due to inadequate pain management, and did not achieve discharge readiness.

Yang T (2009), investigated the incidence of peri-operative anxiety and depression among patients undergoing general anesthesia. Demographic, clinical data and HADS score were collected before and after surgery. Anxiety was found pre- and post-operative in 23% and 17% of patients respectively while the rate of depression was 20% and 16% respectively. Middle or high-level ($P < 0.05$) education was associated with pre-operative anxiety; Pre-operative anxiety and depression are interactional ($P < 0.01$). Post-operative depression ($P < 0.01$) predicted post-operative anxiety; female ($P < 0.05$), pre-operativedepression, post-operative anxiety ($P < 0.05$)

and discomfort of pharynx ($P < 0.05$) predicted post-operative depression. The results show that patients may experience anxiety or depression during peri-operative period and the level of education, sex and discomfort of pharynx may influence pre- or post-operative anxiety or depression respectively.

Boker, et. al., (2005) reported that 60% of patients who present for elective surgery are known to experience anxiety. Preoperative anxiety not only requires larger amounts of anesthetics but also increases the patient's catecholamine secretion, and catecholamine causes tachycardia, hypertension, and arrhythmia. The prevalence of preoperative anxiety depends on the patient group. According to studies, a high prevalence is found in females, relatively young patients, patients who ask many questions about the surgery, and patients without prior surgery experience.

Many patients experience substantial anxiety before operation, and this is reported to affect 60– 80% of surgical patients. Increased anxiety before surgery is associated with pathophysiological responses such as hypertension and dysrrhythmias and may cause patients to refuse planned surgery. Anxiety also increases the requirement of anaesthetic drugs to produce unconsciousness and therefore may indirectly increase the risk of awareness. Anxiety may also worsen patients' perception of pain and increase requirements for postoperative analgesia. Anxiety may decrease patients' overall satisfaction with perioperative care. Reducing preoperative anxiety may improve surgical

outcome, shorten hospital stay, and minimize lifestyle disruption, **(Jlala HA, 2010).**

Nigel M Bedforth (2010), reported that the commonest strategies employed by anesthesiologists to reduce patients' anxiety were communication with the patient and reassurance (95%), giving sedation (82%), using the distraction techniques (eg, listening to music) (54%), giving written information about the block (28%), watching their operation through a camera (20%), allowing the partner to accompany with the patient (15%), do not giving any intervention to reduce the anxiety (10%), converting to general anesthesia (2%), and none of anesthesiologists postponding the anxious patients' surgery.

The mere provision of a premedication agent is restricted to a select number of patients who have been perceived as highly anxious. Second, in the brief time available accurate assessment of all patients is unreliable. Third, such intervention will influence the physiological response to anxiety immediately only before anaesthesia, e.g. anxiety during the days before and after surgery will remain problematic. Finally, such intervention is not available to most day-surgery patients because premedication agents can delay discharge after surgery and are not widely employed. Therefore, although premedication is an effective method of preoperative anxiety reduction and preferred by many patients, its effectiveness in modern-day surgery is very limited, **(Mark Mitchell, 2004)**.

Hyde, et. al., (1998) conducted a survey that concerned with the use of premedication, 184 inpatients were provided with a brief questionnaire to determine the required level of sedation and preferred preoperative activities. Light sedation was preferred by 54.1% of patients and listening to music or reading by 56.5%. The study therefore recommended that patients be provided with alternatives to mere sedation.

Hyde, et. al., (1998) concerning preferred preoperative activities, 184 inpatients admitted for elective surgery were surveyed. It was revealed that 54% wanted to be sleepy preoperatively whereas 72% preferred not to be asleep. Reading (57%), listening to music (57%) and chatting with other patients (40%) were the preferred activities.

Various techniques which is employed to overcome surgical anxiety such as acupressure, acupuncture, massage, tapping, yoga, hypnosis, biofeedback and herbal supplements. These complimentary treatments are not a replacement for a needed surgery, but a way to better cope with the stress surrounding the procedure. **(Jennifer Heisler RN, 2011).**

Surgical procedures performed using regional anaesthetic techniques present a special challenge to anaesthesiologists, because patients are awake and are exposed to multiple anxiety provoking visual and auditory stimuli. Therefore, sedative and anxiolytic drugs are regularly administered before and during surgery, for the purpose of calming patients. Non-pharmacological alternatives like acupressure, hypnosis, therapeutic suggestions and music have

also been tried in the past, with varying results, to avoid the complications from the overdose of the sedative drugs, (**Bansal P, 2010).**

Heewon Yong (2010), reported that even though watching videos has been used as a form of entertainment and is a popular leisure-time activity for many people, the same activity has been used as a form of therapy that goes beyond entertainment or a diversionary activity. Some therapists are using watching video as a complementary therapy to overcome from stressful situations and to reduce the painful stimuli. Further it may be used by a psychotherapist and clinical psychologist for various therapeutic purposes such as make the people laughing, thinking, realizing their mistakes and rediscovering themselves.

Marsdin EL (2011), conducted a prospective randomized controlled trial to assess the effect of Audiovisual distraction on pain perception during lithotripsy. All 56 patients in the study completed a session of lithotripsy on a fixed-site Storz Modulith SLX F2 lithotripter. All patients received the same pre-procedure analgesia and were randomised into 2 groups. One group (n = 30) received AV distraction via a wall mounted 32 inches (82 cm) television with wireless headphones. The other group (n = 26) received no AV distraction. The mean intensity of treatment (number of shocks, frequency and energy level) was comparable in both groups. Independent pain and distress scores from the patient were recorded on a visual analogue scale (0–10) and a non-verbal pain score was documented by the radiographer during the procedure (0–4). All measures of pain perception were statistically lower in the

group that received audiovisual distraction. The patient reported pain score was reduced from a mean of 6.1 to 2.1 and the distress score was reduced from a mean of 3.3 to 1.2. The mean non-verbal score recorded by the radiographer was reduced from 1.5 to 0.3. Audiovisual distraction significantly ($P < 0.05$) lowered the patients' pain and distress scores, which correlated with the non-verbal scores reported by the radiographer. Audiovisual distraction is a simple method of improving the patient's acceptance for lithotripsy.

Hence the researcher felt that intraoperative video therapy is more effective not only to reduce the anxiety level during intraoperative period, but also reduces the usage of premedication, reduces the period of hospitalization and prevents complications during intraoperative period. This further promotes early recovery of the patients and enhances them comfort and promotes early participation in normal life.

STATEMENT OF PROBLEM

"Effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia at Valli hospital, Erode"

OBJECTIVES

1) To assess the level of anxiety among patients under spinal anesthesia in control and experimental group before and after intraoperative video therapy.

2) To determine the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia in control and experimental group.

3) To find out the association between post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variables.

OPERATIONAL DEFINITIONS

Effectiveness

Effectiveness refers to reduction of anxiety during intraoperative period as determined by significant difference between post test score of patients under spinal anesthesia in experimental (video therapy) and control group (usual protocol - eye pad).

Intraoperative video therapy

Intraoperative video therapy refers to watching a video during the intraoperative period by the patient according to his/her preference from the video library which comprised of various categories like

- ⋆ Comedy films
- ⋆ Video songs
- ⋆ Cartoon films and
- ⋆ Religious songs

Which is displayed by the portable DVD player with the head phone.

Anxiety

Anxiety refers to unpleasant and uncomfortable experiences during intraoperative period among patients under spinal anesthesia which is measured by Spielberger State Anxiety Inventory (STAI-S).

Patients under spinal anesthesia

It refers patients who are all undergoing spinal anesthesia (desensitizing lower part of the body through an injection of anesthetic agent into the subarachnoid space) during surgery.

HYPOTHESES

H_1 : There is a significant level in anxiety among patients under spinal anesthesia in control and experimental group before and after intraoperative video therapy

H_2 : There is a significant effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia in experimental than control group.

H_3 : There is a significant association between the post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variable

DELIMITATIONS

The study was delimited to,

- Assess the effectiveness of intraoperative video therapy.
- Identify changes in level of anxiety.
- Patients under spinal anesthesia.
- Valli hospital, Erode.

CONCEPTUAL FRAMEWORK BASED ON SISTER CALLISTA ROY'S ADAPTATION MODEL

A conceptual framework refers to a framework of preposition for conducting research.

Conceptual framework provides clear description of variable suggesting ways or method to conduct the study and guiding the interpretation, evaluation and integration of study findings**, (Polit and Hungler, 2003).**

The conceptual framework set up for the present study is the Sister Callista Roy's adaptation model. There are four major elements in this Roy's adaptation model that is the person or system, nursing, health and environment. Systems, coping mechanisms, and adaptive modes are used to address these elements.

SYSTEMS

A system is "a set of units so related or connected as to form a unity or whole and characterized by inputs, outputs and control and feedback procedures".

Here, patients under spinal anesthesia are an open living system, they receive input or stimuli from both the environment and self.

INPUT

In Roy's system, input is identified as STIMULI, which can come from the environment or from within a person. Stimuli are classified as focal, contextual and residual. It also includes a person's adaptation level. Here the person's adaptation level is determined by focal, contextual and residual stimuli.

1) **Focal stimuli**

The focal stimuli are 'the internal or external stimuli most immediately confronting the human system'.

In this study, the immediate focal stimuli are pathological changes, anticipation of adverse effects and unpleasant environment.

2) **Contextual stimuli**

Contextual stimuli are all other stimuli present in the situation that contribute to the effect of the focal stimuli.

In this study, the contextual stimuli are awareness during procedure, fear of post operative pain and prognosis, previous unpleasant experiences and trait anxiety.

3) **Residual stimuli**

Residual stimuli are factors that may be affecting behaviour but whose effects are not validated.

In this study residual stimuli are financial burden, changes in body image and exposure of body during surgery.

THROUGHPUT

There are two interrelated subsystem in Roy's model.

1) Primary/control process subsystem
2) Secondary/ effector subsystem

CONTROL PROCESS SUBSYSTEM

The control process subsystem consists of regulator and cognator.

a) **Regulator**

The regulator coping system, by way of the physiological adaptive mode, responds automatically through neural, chemical and endocrine coping process.

In this, input/stimuli automatically stimulate the autonomic nervous system, which results increased secretion of catecholamine, glucocorticoids and epinephrine.

b) Congnator

Cognator coping system, by way of the self concept, interdependence and role function adoptive modes responds through four cognitive emotive channels: perceptual information processing, learning, judgment and emotions.

Here, the changes in regulator (sympathetic nervous system) affects the cognator (psychological function), which is expressed as increased level of anxiety.

ADAPTIVE (EFFECTOR) MODES

Adaptive modes (physiological, self concept, role function and interdependence) are a classification of ways of coping that manifest regulator and cognator activity**.**

Here, changes in regulator and cognator affect his/her adaptive modes, which are manifested as follows,

Sl. No	**Adaptive modes**	**Components**	**Evidences**
1.	Physiological mode	Basic need	Heart rate, blood pressure, sensation of thirsty, nausea and restriction of movement
2.	Self concept mode	Physical self	Changes in body image
3.	Role function mode	Tertiary role function	Unable to cooperate with the medical team
4.	Interdependence mode	Independent behaviour	Seeking help

OUTPUT

Output is the outcome of system. Output refers to the patient's behaviour. The behaviours are assessed by using Spielberger State Anxiety Inventory (STAI-S) based on the response. Video therapy was given to the experimental group. The output of system was reassessed. As per Roy's system output is categorized as adaptive response and ineffective response. Here, adopted response is no/low anxiety and ineffective response is moderate and high anxiety.

CHAPTER II

REVIEW OF LITERATURE

The review of literature is a broad, comprehensive, in depth, systematic, and critical review of scholarly publication, unpublished scholarly print materials and personal communications.

A literature review is a written summary of the state of existing knowledge on a research problem. The task of reviewing research literature involves the identification, selection, critical analysis and written description of existing information on a topic, **(Polit and Hungler, 2003).**

The review of literature is organized under the following headings

a. studies related to video therapy
b. Studies related to anxiety among perioperative patients.
c. Studies related to complementary therapies for intraoperative anxiety
d. Studies related to intraoperative video therapy on anxiety

A. STUDIES RELATED TO VIDEO THERAPY

Wang ZX (2008), conducted randomized controlled trial to compare the effectiveness of audiovisual distraction and routine psychological intervention on pain management in school age children receiving venepuncture in a paediatric department. Three hundred patients (8–9 years) requiring

venepuncture for intravenous treatment were randomized into audiovisual distraction group (n = 100, watching cartoon films), intervention group (n = 100, receiving psychological intervention) and control group (n = 100, without any intervention). Pain intensity was measured using visual analogue scale (VAS). There was no significant difference (P>0.05) between the audiovisual distraction and the intervention groups for cooperation, venepuncture times and pain intensity. However, cooperation in the control group was more passive than in the intervention group (P <0.05) but not apparently different to the audiovisual distraction group (P >0.05). Venepuncture time was significantly higher in the control group than in the other two groups (P <0.05). Venepuncture caused moderate pain in children (VAS score: 5.22 ± 2.53 in the control group), which indicates that procedures were more painful in the control group than in the audiovisual distraction or the intervention group (VAS score: 4.55 ± 2.26 and 4.38 ± 2.32 in the audiovisual distraction and intervention groups respectively, P <0.05). The results show that Audiovisual distraction was demonstrated to be effective in reducing self-reported pain, improving patient cooperation and increasing success rate in venepuncture procedures and was as successful as routine psychological intervention.

Prabhakar AR (2007), conducted a study to compare the effectiveness between audio and audiovisual distraction techniques in managing anxious pediatric dental patients. Sixty children aged between 4-8 years, with no previous dental experience were divided into three groups. First group was the control group (group A), second group (group B) listened to audio presentation

through headphones throughout the course of the treatment; third group (group C) was shown audiovisual presentation through television during the entire treatment. Each child had four dental visits - screening visit, prophylaxis visit, cavity preparation and restoration visit, and extraction visit. Child's anxiety level in each visit was assessed using a combination of four measures: Venham's picture test, Venham's rating of clinical anxiety, pulse rate, and oxygen saturation. The observations reveal that there was significantly less increase ($P < 0.05$) in pulse rate in the audiovisual distraction group. The observations also show that ratings of Venham's anxiety scale and oxygen saturation were also less in audiovisual distraction group as compared to control groups and audio distraction groups, but these were not statistically significant ($P < 0.01$). The results study showed that audiovisual distraction was the most effective means of managing the anxiety in children.

Bellieni CV (2006), examined the analgesic effectiveness of watching TV during venipuncture in children. 69 children aged 7–12 years undergoing venipuncture were randomly divided into three groups: a control group (C) without any distraction procedure, a group (M) in which mothers performed active distraction, and a TV group (TV) in which passive distraction (a TV cartoon) was used. Both mothers and children scored Oucher scale (visual pain scale-scoring from 0 (no pain) to 100 (maximum pain)) after the procedure. Main pain levels rated by the children were 23.04 (standard deviation (SD) 24.57), 17.39 (SD 21.36), and 8.91 (SD 8.65) for the C, M, and TV groups, respectively. Main pain levels rated by mothers were 21.30 (SD 19.9), 23.04

(SD 18.39), and 12.17 (SD 12.14) for the C, M, and TV groups, respectively. Scores assigned by mothers and children indicated that procedures performed during TV watching were less painful ($p<0.05$) than control or procedures performed during active distraction. The results show that TV watching was more effective than active distraction.

Cassidy KL (2002), examined the effectiveness of audio visual distraction compared with a blank TV screen in the reduction of pain associated with intramuscular immunization in two urban pediatric practices in Halifax, Nova Scotia, Canada. Five-year-old children (N = 62), undergoing diphtheria, polio, tetanus, and pertussis immunization, and their parents were randomly assigned to watch television (TV) (N = 29) or a blank TV screen (control) (N = 33) during immunization, and were videotaped. Pain was measured by the children's self-reports on Faces Pain Scale, facial actions on Child Facial Coding System, and Children's Hospital of Eastern Ontario Pain Scale. Distraction was measured by mean time spent watching the TV screen. Parents rated their own and their child's anxiety on a visual analogue scale. There were no significant group differences for any pain or distraction measures ($p < 0.05$). The results show that watching cartoons did not distract children during needle injection nor reduce their pain.

Lembo T (1998), examined the effectiveness of audio and visual stimulation on patient discomfort during screening flexible sigmoidoscopy. A total of 37 patients undergoing routine screening flexible

sigmoidoscopy were randomized to receive no intervention, audio stimulation alone, or audio and visual stimulation. Patient discomfort ratings and affect states were measured prior to and immediately following flexible sigmoidoscopy using a visual analogue scale and the Stress Symptom Ratings (SSR). Patients receiving audio and visual intervention had lower abdominal discomfort ratings (7.1 +/- 1.4) than patients receiving audio stimulation (9.5 +/- 1.3) or no intervention (10.8 +/- 1.6) ($p < 0.05$). Patients receiving audio and visual intervention also had higher arousal (7.3 +/- 0.4) and attention (9.2 +/- 0.2) ratings than patients receiving no intervention (6.1 +/- 0.4 and 6.2 +/- 0.7, respectively) ($p < 0.05$). Anxiety and anger ratings, on the other hand, were significantly lower in patients receiving audio visual intervention (2.5 +/- 0.4, 1.4 +/- 0.3, respectively) than patients receiving no intervention (4.4 +/- 0.6, 3.6 +/- 0.7). These findings show that audio visual stimulation reduces abdominal discomfort associated with flexible sigmoidoscopy.

Ram D (2010), investigated the effect of audiovisual distraction (AVD) with video eyeglasses on the behavior of children undergoing dental restorative treatment and the satisfaction with this treatment as reported by children, parents, dental students, and experienced pediatric dentists. Out of 120 children, 61 children wore wireless audiovisual eyeglasses with earphones, and 59 received dental treatment under nitrous oxide sedation. A Frankl behavior rating score was assigned to each child. After each treatment, a Houpt behavior

rating score was recorded by an independent observer. A visual analogue scale (VAS) score was obtained from children who wore AVD eyeglasses, their parents, and the clinician. General behavior during the AVD sessions, as rated by the Houpt scales, was excellent (rating 6) for 70% of the children, very good (rating 5) for 19%, good (rating 4) for 6%, and fair, poor, or aborted for only 5%. VAS scores showed 85% of the children, including those with poor Frankl ratings, to be satisfied with the AVD eyeglasses. Satisfaction of parents and clinicians was also high. Audiovisual eyeglasses offer an effective distraction tool for the alleviation of the unpleasantness and distress that arises during dental restorative procedures.

Sharar SR (2007), conducted a Prospective randomized controlled trial to assess effects of immersive virtual reality (VR) distraction analgesia among burn patients who require passive range-of-motion (ROM) physical therapy (PT). Out of 88 Patients (age range, 6-65y), experimental (N1=44) group were given standard analgesic care (opioid and/or benzodiazepine) plus immersive VR distraction and control group (N2= 44) were given only the standard analgesic care. Self-reported subjective pain ratings (0 to 100 graphic rating scale) was used to measure the level of pain. Compared with standard analgesic treatment alone, the addition of VR distraction resulted in significant reductions in subjective pain ratings ($P < 0.05$) for worst pain intensity (20% reduction), pain unpleasantness (26% reduction), and time spent thinking about pain (37% reduction). Subjects' age, sex, ethnicity, size of initial burn injury, or duration of therapy session did not affect the analgesic effects of VR

distraction. The results show that VR distraction provides a clinically meaningful degree of pain relief to burn patients undergoing passive ROM PT.

Cathryn L (2010), conducted a study to assess the effects of audiovisual distraction during dental prophylaxis. Twenty-seven routine dental prophylaxis patients participated and completed the Dental Fear Survey and the Fear of Pain Questionnaire-III before treatment and who were randomly divided into experimental and control. Experimental group who were watched and listened a standard video using the A/V eyeglasses whereas control group were did not. A post treatment questionnaire was administered to both the patient and the clinician. Subjects reported less anxiety and discomfort when using the A/V eyeglass system than when they did not. Most subjects preferred to use the A/V equipment rather than receive traditional treatment. The clinician experienced no significant technical interference during the use of the A/V device. The use of the A/V eyeglasses led to decreased treatment time in the first one-half of the procedure. A virtual image A/V system is beneficial in the reduction of fear, pain and procedure time for most dental prophylaxis patients.

B. STUDIES RELATED TO ANXIETY AMONG PERIOPERATIVE PATIENTS

Haugen AS, (2009) conducted a study to estimate the frequency of intraoperative anxiety, the influence of environmental factors on intraoperative anxiety and to study the relationship between intraoperative anxiety and generalized anxiety and depression among patients having local, plexus or regional anaesthesia. Survey design including questionnaires were used to assess the level of anxiety among 119 samples undergoing elective surgery and emergency operations within 24 hours of admission with the help of Jakobsen's questionnaire and the Hospital Anxiety and Depression scale. 23% felt anxious on arrival at the operating theatre, 35% were anxious at induction of anaesthesia, while 12% felt anxious after induction. At start of surgery 15% experienced anxiety and during surgery 9% were anxious. The sight of technical equipment and surgical instruments was reported to increase anxiety in 9% and 6% of the sample, respectively. Patients with higher levels of general anxiety and depression also experienced significantly higher levels of anxiety in the intraoperative period. Continuous information reduced the experience of anxiety in 49% of the patients and the opportunity to ask questions during the intraoperative period reduced anxiety in 55%.

Mauleon AL (2007), conducted a interpretive phenomenological method to illustrate the patient's experiences of local anaesthesia and a surgical situation. Seven patients (aged 61-79) experiencing local anaesthesia and hip

surgery (hip replacement surgery or repair of fractured hip) were interviewed. Results show that the well-being and comfort of patients is compromised by challenges such as severe pain and long waits, which may be experienced as endless and which leave the patient thinking of nothing else. By contrast, the experience of trust helps the patient to feel control even in situations where the treatment is hard to grasp. The results highlight that local anaesthesia and surgery force patients to overcome and handle experiences of pain, trust and distrust as well as feelings of alienation and unreality.

Ukpong DI (2004), conducted a study to assess psychiatric symptoms on the course of anxiety in surgical patients. Fifty five (55) patients consecutively booked for major elective surgery were assessed pre-operatively for minor psychiatric symptoms and baseline anxiety levels using the GHQ - 30 and the state version of the state - Trait Anxiety inventory (STAI). Measurements of post-operative anxiety levels were also done for the seven consecutive post-operative days using the STAl. The prevalence of minor psychiatric morbidity was 38%. Patients who were GHQ - 30 cases had higher pre-operative and post-operative anxiety levels than those who were not GHQ- 30 cases. Mean baseline pre-operative anxiety levels were not achieved even on the seventh post-operative day. Pre-operative and post-operative psychological interventions may have useful clinical implications for the anesthesiologist, surgeon and psychiatrist as they may need to pay special attention to those identified as being a greater risk for pre and post-operative anxiety.

Carr E (2006), conducted mixed method approach to identify the patterns and level of anxiety pre- and postoperatively; to identify any correlation between raised anxiety levels and postoperative pain; to identify events, from the patients' perspective, that may increase or decrease anxiety in the pre- and postoperative periods in women undergoing gynaecological surgery. Anxiety was assessed using the State Trait Anxiety Inventory and Postoperative pain was measured using a 10cm visual analogue scale. Trait anxiety was measured at the time of recruitment and state anxiety was then assessed at six time points during the pre- and postoperative periods. Taped semi-structured telephone interviews were conducted approximately a week after discharge. State anxiety rose steadily from the night before surgery to the point of leaving the ward to go to theatre. Anxiety then increased sharply prior to the anaesthetic decreasing sharply afterwards. Patients with higher levels of trait anxiety were more likely to experience higher levels of anxiety throughout their admission. Elevated levels of pre- and postoperative anxiety were associated with increased levels of postoperative pain. Telephone interviews revealed a range of events/situations that patients recalled distressing them and many were related to inadequate information.

Eldaş SD (2004), conducted a comparative study to evaluate the reasons for postponement of scheduled orthopedic surgical operations and its effect on anxiety and pain levels of patients. The study included 100 patients (age range 21 to 56 years) who were admitted to the orthopedics department for a scheduled surgical operation in the lower extremity. Fifty patients who were

subject to postponement of the operation on the scheduled day comprised the study group, and 50 patients who underwent surgery on the intended day comprised the controls. Data were collected by means of a patient questionnaire, the Spielberger State and Trait Anxiety scale, and a pain assessment scale. Evaluation of pain was made six times at regular intervals within 48 hours postoperatively. The results were compared. The most common reason (28%) for postponement was the presence of medical diseases on the part of the patient. Most frequently, the decision for postponement came from anesthesiologists (42%). Compared to the preoperative level, the mean state anxiety score showed a significant increase following the notification of the patients concerning the postponement (p=0.001). These finding shows, postponed surgical operations result in an increased degree of emotional trauma and pain in patients assigned to have orthopedic surgical interventions.

Jafar MF (2009), conducted a cross sectional study to measure level of preoperative anxiety in Pakistani surgical patients. 300 ASA I and II adult surgical in-patients admitted over a period of one year were assessed with the help of STAI questionnaire and VAS. STAI score of > 44 or VAS score of > or = 50 were considered as significant anxiety. Enrolled patients were visited by primary investigator the day before surgery and patients were asked to fill the STAI questionnaire and VAS score. Significant preoperative anxiety was seen in 62% patients (73% females and 42% males). Frequency of anxiety decreased with advancing age but increased with higher educational status. A total of 77% of patients with no previous exposure to surgery and 26% of patients who

had previous surgery, were anxious. Also 49% of patients who had visited the clinic and 86% of patients who had not visited the clinic were anxious. VAS correlated with STAI in 90% cases. Cut off value of VAS which showed positive correlation with STAI was 45. Frequency of preoperative anxiety was 62%. Female gender, younger age and higher educational status were positively correlated while prior experience of surgery and preoperative anaesthesia clinic visit were negatively correlated with anxiety.

Rosén S (2008), conducted prospective study to investigate whether patients felt anxiety (calm or not calm) preoperatively among patients undergoing an elective day care surgery and also to elucidate the factors contributing to a patient's current state of mind. 161 outpatients scheduled for elective surgery were given the questionnaire and asked to state if they were feeling calm or not and to describe factors contributing to their current mood. If responding that they did not feel calm, the participants were asked to rate the level of anxiety on a Numeric Rating Scale, 1-10. The results showed that 57% (n = 91) of the participants stated that they did not feel calm. A significantly higher proportion of women did not feel calm (65%), $P < .05$. Significantly more participants with a previous experience of surgery felt calm (90%), $P < .01$. The results show that nearly half of the participants felt calm before surgery and the reasons were found are earlier positive experiences, feeling of security and caring, being well-informed, and having positive expectations. This emphasizes the need to evaluate patient's state of mind and reasons for the

state of mind the individual before surgery to routinely document and evaluate the individual patient's state of mind and reasons for the state of mind.

Nickinson RS (2009), conducted a study to investigate the Post-operative anxiety and depression levels in orthopaedic surgery among patients undergoing hip or knee arthroplasty with the help of Hospital Anxiety and Depression Scale. Fifty-six patients undergoing lower limb arthroplasty completed the questionnaire on the day prior to surgery, then on each post-operative day up to and including their day of discharge. Post-operatively 17 patients became anxious and 28 subjects (50%) became depressed prior to discharge. No variables were significant predictors of anxiety, whereas Site of operation, age and anaesthetic method were not predictive of depression. But, females were more likely to become depressed than males odds ratio (OR) = 3.48 [95% confidence interval (CI) 1.01-11.88] and those who had a previous lower limb arthroplasty were more likely to develop post-operative depression, OR = 3.92 (95% CI 1.05-14.6). The mean time point for development of depression was 2.43 days (SD = 1.40 days) and the time of deepest depression was 2.93 days (SD = 1.72 days). The mean length of depression was 1.93 days (SD = 1.21 days). The mean length of stay for depressed patients was 5 days (SD = 1.72), compared with 4 days for the non-depressed patients (SD = 1.62 days). These findings emphasize the need for evaluation of patients' psychiatric state post-operatively.

Soni JC (1989), compared the level of anxiety among the patients, who were before induction of anaesthesia in the anaesthetic room or operating theatre.100 patients who were allocated randomly to one of two groups. Patients in one group were anaesthetised in an anaesthetic room and those in the other group were anaesthetised inside the operating theatre. Both subjective and objective induces of anxiety were used in the comparison. Other factors that contributed to anxiety were assessed by a simple questionnaire. There was no significant difference in the level of anxiety between the two groups.

C. STUDIES RELATED TO COMPLEMENTARY THERAPIES FOR INTRAOPERATIVE ANXIETY

Tusek DL (1997), conducted prospective randomized trial to investigate the effect of guided imagery in the perioperative period could improve the outcome of patients undergoing their first elective colorectal surgery. Patients were randomly assigned into control and experimental groups. control group received standard perioperative care, and experimental group who were given a guided imagery tape three days preoperatively; a music-only tape during induction, during surgery, and postoperatively in the recovery room; a guided imagery tape during the first six postoperative days. Both groups had postoperative patient-controlled analgesia. All patients rated their levels of pain and anxiety daily, on a linear analog scale of 0 to 100. Total narcotic consumption, time to first bowel movement, length of stay, and number of

patients with complications were also recorded. Median baseline anxiety score was 75 in both groups. Before surgery, anxiety increased in the control group but decreased in the guided imagery group (median change, 30; $P < 0.001$). Postoperatively, median increase in the worst pain score was 72.5 for the control group and 42.5 for the imagery group ($P < 0.001$). Least pain was also significantly different ($P < 0.001$), with a median increase of 30 for controls and 12.5 for the imagery group. Total opioid requirements were significantly lower in the imagery group, with a median of 185 mg vs. 326 mg in the control group ($P < 0.001$). Time to first bowel movement was significantly less in the imagery group (median, 58 hours) than in the control group (median, 92 hours; $P < 0.001$). The number of patients experiencing postoperative complications (nausea, vomiting, pruritus, or ileus) did not differ in the two groups. The results show that guided imagery significantly reduces postoperative anxiety, pain, and narcotic requirements of colorectal surgery and increases patient satisfaction.

Maeyama A (2009), conducted a study to assess the effectiveness of music-therapy among patients under spinal anesthesia using BIS and interview type psychology test, State Trait Anxiety Inventory (STAI). Fifty-eight ASA physical status I-II patients scheduled for spinal anesthesia, were randomly allocated into M group (music group, n=29) or C group (control, n=29). BIS, EMG, and SQI of both groups were obtained continuously with computer system. Patients in M group listened to music by head phone and those in C group were left free under ordinary operating theater environment. Trait

Anxiety Inventory (STAI-TA) score was obtained preoperatively for property-based anxiety and the State Anxiety Inventory (STAI-SA) score was obtained postoperatively for condition-based anxiety. Time averaged BIS scores (pre-surgery, during-surgery and post-surgery period) were obtained during operation. Time averaged BIS values of M and C group in pre-surgery period, during-surgery period, and post-surgery period were 95.3+/-0.4 vs 95.8+/-0.4 (NS), 87.6+/-7.5 vs 95.1+/-2.8 (P<0.01) and 96.0+/-0.4 vs. 96.2+/-0.4 (NS), respectively. Post-surgery STAI-SA was 29.7+/-7.2 in M group vs 38.8+/-10.3 in C group (P<0.01) while pre-surgery STAI-SA scores of both groups were not different. Music-therapy reduced BIS value and was effective to reduce patient's anxiety during spinal anesthesia.

Cruise CJ (1997), conducted a study to evaluate the effect of music in elderly outpatients undergoing elective cataract surgery with retrobulbar block and monitored anesthetic care using fentanyl or alfentanil and midazolam. One hundred and twenty one patients were d randomly assigned to hear: relaxing suggestions, white noise, operating room noise or relaxing music via audio-cassette headphones. Vital signs were documented before and after retrobulbar block and every 15 min thereafter. Anxiety was assessed using the State-Trait Anxiety Inventory (STAI) before and after surgery. Visual analogue scales (VAS) were used to assess anxiety and patient satisfaction postoperatively with a standardized questionnaire. There were no differences between groups in STAI or anxiety VAS scores at any time. Differences were noted in systolic blood pressure, but not in other vital signs. Patients' ratings of the whole

operative experience, satisfaction with the tape played, general level of relaxation and preference for the chosen tape for subsequent surgery were different (music > relaxing suggestions > white noise and OR noise, $P < 0.05$). These finding shows that patients undergoing cataract surgery were more satisfied with their experience if they heard relaxing music, rather than relaxing suggestions or white noise or noise. The type of auditory stimuli to which the patients were exposed did not influence the level of anxiety.

Gynecol Oncol (2003), conducted a prospective randomized study to assess the impact of music on women's anxiety and perceived pain during colposcopy examination. Two hundred and twenty women referred for colposcopy for the first time were randomized to either the music or no-music group. Before colposcopy examination, each subject completed a Chinese version of the state anxiety questionnaire (STAI) and assessed the anticipated pain for colposcopy with a visual analog scale (VAS). Slow-rhythm music was played during colposcopy examination in the music group, whereas subjects in the no-music group were examined in the same setting without music. After colposcopy, each subject completed the STAI form again and assessed their pain during examination by the VAS. Women in the music group experienced significantly less pain (mean VAS 3.32 [95% CI 2.86-3.78] vs 5.03 [4.54-5.52], $P<0.001$) and lower anxiety (mean STAI 39.36 [95% CI 37.33-41.39] vs 44.16 [41.82-46.49], $P = 0.002$) during colposcopy examination than women in the no-music group. On linear regression analysis, the factors significantly affecting anxiety during colposcopy were anxiety score at enrollment, pain score during

colposcopy, and whether or not the women had listened to music during the colposcopy examination. The factors significantly affecting the pain scores were whether the women had listened to music during the procedure and the final anxiety scores. Music is a simple, inexpensive, and easily used strategy to minimize anxiety and pain during colposcopy examination.

Twiss E (2006), conducted a randomized control trial to determine the effect of music listening on postoperative anxiety and intubation time in patients undergoing cardiovascular surgery. Sixty adults older than 65 years were randomly assigned to the control and the experimental groups. The experimental group listened to music during and after surgery, while the control group received standard postoperative care. The Spielberger State Trait Anxiety Inventory was administered to both groups before surgery and 3 days postoperatively. Older adults who listened to music had lower scores on the state anxiety test ($F = 5.57$, $p = .022$) and had significantly fewer minutes of postoperative intubation ($F = 5.45$, $p = .031$) after cardiovascular surgery. Older adults undergoing cardiovascular surgery who listen to music had less anxiety and reduced intubation time than those who did not.

Caroline Lepage (2001), conducted a prospective study to measure whether music can influence anxiety and perioperative sedative requirements in outpatients undergoing surgery with spinal anesthesia. They also evaluated the correlation between two anxiety measures, the State-Trait Anxiety Inventory test (STAI) and the 0- to 10-cm visual analog scale (VAS 0–10), with 0

meaning complete relaxation and 10 the worst feeling of anxiety possible. Fifty unpremedicated patients were randomly assigned to listen to music of their choice via headset during the perioperative period (Group I) or to have no music (Group II). All participants used patient-controlled IV midazolam sedation and underwent repeated evaluations of their anxiety level with the STAI and the VAS 0–10. Midazolam requirements during surgery (Group I, 0.6 ± 0.7 versus Group II, 1.3 ± 1.1 mg; $P < 0.05$) and for the whole perioperative period (Group I, 1.2 ± 1.3 versus Group II, 2.5 ± 2.0 mg; $P < 0.05$) were smaller in patients listening to music. Anxiety levels, measured with STAI or VAS 0–10, were similar in both groups. The Spearman's coefficient values between STAI and VAS 0–10 ranged from 0.532 to 0.687. These findings shows that patients listening to music require less midazolam to achieve a similar degree of relaxation as controls and that measures of anxiety obtained from the STAI and the VAS 0–10 are positively, but only moderately, correlated. It is possible to decrease sedative requirements during surgery under spinal anesthesia by allowing patients to listen to music to reduce their anxiety.

Nilsson U (2003), conducted a comparative study to assess the effectiveness of intraoperative music with postoperative music on postoperative pain. In a controlled trial, 151 patients undergoing day case surgery for inguinal hernia repair or varicose vein surgery under general anaesthesia were randomly allocated to three groups: group 1 listened to music intra-operatively, group 2 listened to music postoperatively and group 3, the control group, listened to 'white noise'. The anesthetic and postoperative analgesic techniques were

standardized. Pain was assessed using a numeric rating scale (0-10) and patient's requirements for postoperative morphine, paracetamol and ibuprofen was recorded. The effect of music on nausea, fatigue and anxiety was also investigated. The results showed that patients exposed to music intra-operatively or postoperatively reported significantly lower pain intensity at 1 and 2 h postoperatively and patients in the postoperative music group required less morphine at 1 h compared to the control group. No differences were noted in the other variables. This study demonstrates that there is a short-term pain-reducing effect of music therapy however; the beneficial effects do not differ if the patient is exposed to music intra-operatively or postoperatively.

Ko YL (2011), conducted a study to investigate the effect of using a relaxation tape on pulse, respiration, blood pressure and anxiety levels of surgical patients, in a medical centre in northern Taiwan. A one-group pretest-post-test quasi-experimental design was used for the present study. Eighty patients were selected with average age of 43·14 (SD 17·27) years, who were given relaxation tape the day before their scheduled surgery. Pre test and post test were conducted before and after the patients listened the relaxation tapes. STAI and respiration, pulse and blood pressure were used to measure the level of anxiety. The average age of 80 patients was 43·14 (SD 17·27) years. After the patients listened to the relaxation tape, their respiration rate dropped from 18·4 (SD 6·9) -17·8 (SD 7·4), pulse rate dropped from 81·9 (SD 33·5) - (SD 33·7), systolic blood pressure decreased from 125·4 (SD 16) mmHg - 121·5 (SD 13·4) mmHg and STAI score dropped from 50·9 (SD 11·1) - 41·1 (SD 9·8).

They all showed a significant level of difference (p = 0·05). A one-time listen to the tape during the entire hospital stay was the experience of the majority (66·3%) and indicated that the STAI score can be further reduced by increasing the number of tape listening sessions (F=14.1, P < . 0·001). The results show that a relaxation tape can significantly reduce the level of anxiety and vital signs related to anxiety in surgical patients.

Buffum MD (2006), conducted a randomized controlled trial to assess the music intervention to reduce anxiety before vascular angiography procedures. 170 patients (166 men and 4 women) with an average age of 66.8 years (SD 9.95) were randomly assigned to experimental group (n1=89) and control group (n2= 81). 15 minutes of self-selected music were played to the experimental group prior to the procedure, and level of anxiety was measured before and after the procedure in both the group by State Trait Anxiety Inventory. Patients who listened to music reduced their anxiety score from 38.57 (SD 10.46) to 35.2 (SD 9.7), while those who did not listen to music reduced their anxiety score from 36.23 (SD 10.54) to 35.1 (SD 10.59); the difference between the groups was statistically significant (t=1.95, df=161, p=0.05). Pulse achieved a statistically significant reduction in the music group (t=2.45, df 167, p=0.02). The results show that music is a noninvasive nursing intervention that patients enjoy and reduces their anxiety and their pulse rate.

Moon (2007), examined the effects of relaxation therapy on the level of anxiety among spinal anesthesia orthopedic surgery patients at a general

hospital is Seoul, South Korea from January 13, 2006 to March 21, 2006. The study employed a quasi-experimental pre and post test design with nonequivalent control group. Data were collected from 44 patients (22 in experimental and 22 in control group), where the experimental group was provided with the 15 minute muscle relaxation therapy on the day before the spinal anesthesia. The experimental group reported slight lower level of state anxiety after the surgery (23.18 vs 33.64) than did control group but was not statistically significant. There were no significant differences in blood pressure level or pulse rate between experimental group and control group after the surgery. The muscle relaxation may be a convenient and useful nursing intervention to reduce anxiety level specifically among spinal anesthesia surgery patients.

Hermes D (2004), conducted a prospective study to evaluate the effectiveness of intraoperative standardized hypnosis on anxiety. Out of 50 patients scheduled for dental surgery, the experimental group (n=25) received supplementary standardized tape hypnosis, whereas the control group received standard treatment (only local anesthesia). Individual and situative anxiety levels were determined by the State-Trait Anxiety Inventory (STAI). After simultaneous increase of preoperative state anxiety, anxiety levels in the hypnosis group showed a significant intraoperative reduction to baseline level, whereas intraoperative anxiety of the control group (n=25) remained unchanged. Hypnosis reduces intraoperative anxiety of oral and maxillofacial patients significantly.

Moon JS (2001), conducted a study to assess the effectiveness of handholding on the level of anxiety among patients undergoing planned cataract surgery under local anaesthesia. An untreated control group design with pre and post-test was used. Among 62 patients, 30 were randomly assigned to the handholding group and 32 to the control group. Handholding was provided to subjects of the handholding group during surgery. Visual analogue scales and interviews were used to measure anxiety, and pulse rate and systolic and diastolic blood pressure were used as physiological measures of stress. Blood was taken for analysis of levels of epinephrine, norepinephrine, cortisol, neutrophils, lymphocytes and natural killer cells. The number of subjects who reported decreased anxiety during operation was significantly higher in the handholding group compared with the control group and most of the subjects reported that handholding during operation was very helpful in reducing anxiety. Epinephrine levels in the handholding group were significantly lower than in the control group. Results suggest that this noninvasive intervention has potential for reducing anxiety in patients having cataract surgery under local anaesthesia.

Gregory B. Diette (2002), conducted Randomized controlled trial to determine whether distraction therapy with nature sights and sounds during flexible bronchoscopy (FB) reduces pain and anxiety. 80 Consecutive adult patients undergoing FB with conscious sedation at Teaching hospital in Baltimore, were selected for present study. Nature scene murals were placed at the bedside, and patients were provided a tape of nature sounds to listen to

before, during, and after the procedure. Patients assigned to the control group were not offered either the nature scene or the sounds. The primary outcomes were patient ratings of pain control (a 5-point scale ranging from poor to excellent) and anxiety. In a multivariate ordinal logistic regression model, the odds of better pain control were greater in the intervention patients than in the control patients (odds ratio [OR], 4.76; 95% confidence interval [CI], 1.35 to 16.7), after adjustment for age, gender, race, education, health status, and dose of narcotic medication. There was no difference in patient-reported anxiety between the two groups (OR, 0.87; 95% CI, 0.39 to 1.96). The findings denote that distraction therapy with nature sights and sounds significantly reduces pain in patients undergoing FB.

Leske JS (1992), examine the effects of intraoperative progress reports on family members' state anxiety level (STAI S-Anxiety), mean arterial pressure (MAP), and heart rate during elective surgical procedures. out of 100 surgical patients family members were randomly assigned as control group (n = 50) and experimental group (n = 50). Family members of control group received usual care whereas in the experimental group received a 5- to 10-minute progress report protocol about halfway through a surgical procedure. Families' STAI S-Anxiety scores, MAP, and heart rates were compared between the control and experimental groups using multivariate analysis of variance (MANOVA). Family members in the experimental group reported lower STAI S-Anxiety scores ($p < .001$), and had significantly lower MAP and heart rates than did the control group ($p < .001$). Progress reports appear to be a

beneficial nursing intervention for reducing anxiety in family members during the intraoperative period.

Kakinuma A (2011), conducted a randomized control trail to assess the effects of short interactive animation video information- including risks, benefits, and alternatives-of anesthetic procedures on knowledge of anesthesia and preanesthetic anxiety. Two hundred eleven patients scheduled for cancer surgery under general anesthesia or combined general and epidural anesthesia, who were admitted at least 1 day before the surgery, were randomly assigned to the video group (n = 106) or the no-video group (n = 105). The patients in the video group were asked to watch short interactive animation video in the ward but in no video group were not asked watch a video. In both groups, the patients were asked to complete the State-Trait Anxiety Inventory and a 14-point scale of knowledge test before the anesthesiologist's visit and on the day of surgery. They also measured interview time. The interview time was 34.4% shorter (video group, 12.2 ± 5.3 minutes, vs. No-video group, 18.6 ± 6.4 minutes; 95% confidence interval [CI] for the percentage reduction in time: 32.7%- 44.3%), and knowledge of anesthesia was 11.6% better in the video group (score 12.5 ± 1.4 vs. No-video group score 11.2 ± 1.7; 95% CI for the percentage increase in knowledge: 8.5%-13.9%). However, there was no difference in preanesthetic anxiety between the 2 groups. Their short interactive animation video helped patients' understanding of anesthesia and reduced anesthesiologists' interview time.

Salzwedel C (2008), conducted a study to assess the effectiveness of Video-assisted patient education (ViPa) in anesthesiology. In ViPa, patients watch an educational video about the process and the risks of anaesthesia in addition to the preanesthetic interview with the anesthesiologist. The redundant and monotonous explanations about the procedures and risks of anaesthesia by the interviewing anesthesiologist are partly replaced by the video, but for medico-legal reasons the ViPa cannot totally replace the preanesthetic interview. It can be used in pediatric anaesthesia and reduces parental anxiety.

Jlala HA (2010), conducted a study to assess the effect of preoperative multimedia information on perioperative anxiety in patients undergoing procedures under regional anaesthesia. 110 patients undergoing upper or lower limb surgery under regional anaesthesia randomized into the study and control groups. The study group watched a short film (created by the authors) depicting the patient's in-hospital journey including either a spinal anaesthetic or a brachial plexus block. Patients' anxiety was assessed before and after the film and 1 h before and within 8 h after their operation, using the Spielberger state trait anxiety inventory and a visual analogue scale. There was no difference in state and trait anxiety between the two groups at enrollment. Women had higher baseline state and trait anxiety than men (P=0.02). Patients in the control group experienced an increase in state anxiety immediately before surgery (P<0.001), and patients in the film group were less anxious before operation than those in the control group (P=0.04). After operation, there was a decrease

in state anxiety from baseline in both groups, but patients in the film group were less anxious than the control group (P=0.005). Preoperative multimedia information reduces the anxiety of patients undergoing surgery under regional anaesthesia.

Bytzer P (2007), conducted a randomized control trail to assess the Impact of an information video before colonoscopy on patient satisfaction and anxiety. 162 colonoscopy patients were randomly assigned to video (72) or no video (90) groups. Patients in the video group watched a video on colonoscopy procedures and cleansing. The patients' situational anxiety was measured using the State-Trait Anxiety Inventory (STAI) questionnaire. Patients rated pain and overall satisfaction related to the procedure. The colonoscopist and the endoscopy nurse, who were blinded to the patient's allocation, completed questionnaires on use of medication, procedure outcome, and their assessments of patient pain and toleration of the procedure. There were no differences between the two groups concerning situational anxiety (mean STAI-State score 45.0 +/- 13.3 vs. 45.9 +/- 12.9, P = 0.7), rating of pain, tolerability of the procedure, or the willingness to undergo a future colonoscopy. The staff rated the outcomes equally in the two groups. There was no difference in use of midazolam, but patients, who had seen the video used higher doses of fentanyl (P < 0.02). Situational anxiety ratings were significantly higher in women, and they found the procedure significantly more painful (P = 0.001) and were less

satisfied ($P < 0.05$). An information video shown to patients preparing for colonoscopy had no impact on tolerability or anxiety.

McEwen A (2007), conducted a study to assess the effect of videotaped preoperative information on parental anxiety during anesthesia induction for elective pediatric procedures. One hundred and eleven parents were randomized as control group (n=56) and an intervention group (n=55). All parents completed the Amsterdam Preoperative Anxiety and Information Scale (APAIS) questionnaires on admission to hospital, on the day of surgery and then again just before accompanying their child to the anesthetic room. In addition to the normal preoperative preparation, parents randomized into the study group watched a short 8-min information video after completing the first questionnaire. The video illustrated the events and procedures surrounding a child's admission to hospital for day-case surgery, including the induction of anesthesia. The results were analyzed using repeated measures of anova. There was a statistically significant reduction in anxiety and desire for information in the intervention group compared with the control group ($P < 0.05$). The reduction in anxiety in the intervention group indicates that preoperative information videos are an effective method of reducing anxiety in parents.

Luck A (1999), conducted a randomized trial to assess the effects of video information on precolonoscopy anxiety and knowledge. Patients scheduled to undergo colonoscopy were approached about 1 week before the procedure. Out of 198 screened patients, 31 declined to participate and 17 were

unable to complete the forms. Of the remaining 150 patients, they were randomly assigned to video information group (n=72) and no video information group (n=78). The groups were similar with regard to age, sex, educational attainment, and initial anxiety score. All patients were given an information leaflet about colonoscopy, and completed a Spielberger state anxiety inventory (STAI) questionnaire to assess baseline anxiety. Immediately before colonoscopy, all patients completed a second anxiety questionnaire and a knowledge questionnaire. Female patients had higher baseline anxiety than male patients (mean STAI 46.3 [95% CI 44.9-47.7] vs 36.9 [35.5-38.3]; difference 9.4 [7.8-12.2], p=0.0008). Patients who had not had a previous colonoscopy had higher baseline anxiety scores than those who had prior experience of the procedure (46.9 [45.4-48.5] vs 36.3 [34.7-37.9]; difference 10.6 [7.5-13.8], p=0.0008). Patients who watched the video were significantly less anxious before colonoscopy than those who did not. The former also scored more highly in the knowledge questionnaire than the latter with regard to the purpose of the procedure, procedural details, and potential complications of colonoscopy. An information video increases knowledge and decreases anxiety in patients preparing for colonoscopy.

Herrmann KS (1989), conducted a randomized prospective study on anxiety reduction by preparatory disclosure with and without video film show about a planned heart catheterization. 65 Patients who were admitted for elective coronary angiography were randomized in to two groups: both groups received the same leaflet and personal interview with the doctor, but only one

group (Group 2) additionally watched a 14 min preparatory video. Anxiety was assessed with the State-Trait Anxiety Inventory (STAI). The two groups did not differ with respect to initial anxiety levels and other important parameters. Group 1 patients, who did not watch the video, had no significant reduction in anxiety score; group 2 patients showed a significant benefit. They concluded that disclosure with the additional aid of a video film may be an easy, yet effective way to reduce patients' anxiety.

Kaiser Permanente (2005), conducted a study to determine the impact of a website on: (1) preoperative patient education, (2) patient anxiety, and (3) patient satisfaction with anesthesia care. The week prior to surgery, 64 ASA class I and II subjects at a 350-bed urban university affiliated hospital completed a demographic questionnaire, State Trait Anxiety Inventory (STAI) and modified Standard Anesthesia Learning Test (mSALT), and the experimental group was given website information. On the day of surgery, all subjects completed the STAI and mSALT. Before discharge, subjects rated satisfaction. The experimental group had a significant increase in posttest mSALT scores (P = .004). Neither the experimental nor the control group had a significant change in posttest state anxiety (P = .279 and .762) or trait anxiety (P = .823 and.570). The experimental group differed significantly from the control group in satisfaction with teaching (P = .019).

Agarwal A (2005), conducted a prospective, randomised, placebo controlled study to assess the effectiveness of acupressure on prevention of pre-

operative anxiety and bispectral index (BIS) values. Seventy-six adults, ASA grade I and II, undergoing elective surgery, were randomly assigned to two equal groups. Group 1 (control) received acupressure at an inappropriate site and group 2 (acupressure) received acupressure at extra 1 point. The study was conducted during the pre-operative period and the duration of the study was 40 min (acupressure was applied for 10 min and thereafter patients were observed for another 30 min). Anxiety was recorded on a visual stress scale (VSS) at the start of the study and thereafter at 10 and 40 min. BIS was recorded at 0, 2, 5, 10, 12, 15, 30 and 40 min. The VSS decreased in both groups following pressure application for 10 min: median VSS (interquartile range) were 5 (1) vs. 8 (1) in the acupressure and 7 (0) vs. 8 (1) in the control groups ($p < 0.001$). Both pre-operative anxiety and BIS decreased significantly during acupressure application at extra 1 point ($p < 0.001$). Acupressure is effective in decreasing both pre-operative anxiety and BIS; however, these effects are not sustained 30 min following release of acupressure. Further studies are needed to elucidate the duration for which acupressure is effective.

Stirling L (2007), conducted a feasibility study to examine the effectiveness of essential oils in reducing anxiety in thoracic patients awaiting the results of investigative and staging surgery. In this double-blind controlled trial, out of 142 patients admitted to a thoracic unit for bronchoscopy/mediastinoscopy in 2005 and 2006 approached to participate, 71 (50%) agreed to take part. they were randomized to receive study oil (A), neutral oil (B) or no intervention (C). Intervention was controlled by the patient

at home after the procedure. The State Trait Anxiety Inventory and the Hospital Anxiety and Depression Scale were used to measure baseline and periodic anxiety status (days 3, 21). There were high and fluctuating levels of perioperative anxiety in the thoracic patient group, but no evidence that this was reduced by the absorption and inhalation of essential oils. The study did not provide evidence that the essential oils could reduce anxiety in this group of patients.

Wakimizu R (2009), conducted a randomized controlled trial to determine whether the implementation of at-home psychological preparation programme, prior to surgery can reduce anxiety for Japanese preschool children undergoing herniorrhaphy and their caregivers. Out of 161 eligible patients, 158 (98.1%) were randomly assigned to the control group (n = 81) and the experimental group (n = 77), and 144 (89.4%) completed the study. Both two groups viewed a patient-educational video for herniorrhaphy once as outpatients with other patients prior to hospitalization. The control group later underwent surgery without any further preparation. The experimental group watched the same educational video at home again with an auxiliary booklet prior to hospitalization. Children's anxiety was measured by the Wong-Baker FACES Rating Scale (FACES Rating Scale), while caregivers' anxiety was measured by the Spielberger's State Trait Anxiety Inventory (STAI). Both outcomes were measured repeatedly from pre-intervention to 1 month after surgery. The experimental group gained more information and knowledge about surgery from parents and showed significantly lower scores than the

controls for FACES and STAI. A specially designed at-home preparation programme as an outpatient care is effective to encourage parent-child verbal interaction concerning surgery and reduce both children and caregivers' anxiety associated with surgery.

Kimberger O (2007), tested the pre-operative warming can reduce pre-operative anxiety patients undergoing neurosurgery. Eighty patients were randomly allocated into four groups. Treatment was applied for 30-45 min with (1) passive insulation and placebo; (2) passive insulation and intravenous midazolam (30 microg.kg-1); (3) warming with forced-air and placebo; and (4) warming with forced-air and intravenous midazolam (30 microg.kg-1). Thermal comfort levels (VAS 0-100 mm) and anxiety levels (VAS 0-100 mm, Spielberger State-Trait Anxiety Inventory) were assessed twice: before the designated treatment was started and before induction of anaesthesia. In the midazolam and the midazolam/warming groups, anxiety VAS and Spielberger state anxiety scores decreased by -19 (95% CI: -29 to -9, $p<0.01$) and -10 (95% CI: -14 to -6, $p<0.01$), respectively. In the warming and the combined groups, thermal VAS increased by +26 (95% CI: 17-34, $p<0.01$). Pre-operative warming did not reduce anxiety VAS ($p=0.11$) or Spielberger state anxiety ($p=0.19$). The results indicate that pre-operative warming can be recommended solely to improve thermal comfort, not to replace anxiolytic premedication regimens.

Lin PC (2011), examines the effect of relaxation therapy on reducing patient anxiety and pain before and after total joint replacement, in a medical centre in Taiwan, from November 2006–March 2007. An experimental control group pretest–post-test quasi-experimental design was employed and 93 subjects with the average age of 71·0 (SD 11·1) years, were randomly assigned to experimental ($n = 45$) and control ($n = 48$) groups. Subjects in the experimental group received relaxation therapy (breath relaxation and guided imagery tape for 20 minutes daily) from the day before surgery to the third postoperative day. A pain and anxiety scale questionnaire, the State-Trait Anxiety Inventory questionnaire, blood pressure and heart rate were monitored before and after intervention. The least pain severity scores in the experimental were lower than those in the control group ($p < 0·05$) but both experienced the same level of worst or average pain ($p > 0·05$). The mean difference in the pain score before and after intervention in the experimental group on the pre-op day ($t = 2·675$, $p = 0·009$) and post-op day one ($t = 3·059$, $p = 0·003$) was greater than that in the control group (0·48 SD 0·94 vs. 0·10 SD 0·30 and 0·93 SD 1·46 vs. 0·20 SD 0·71, respectively). The two groups differed significantly in systolic blood pressure ($F = 6·750$, $p < 0·05$) but not in mean blood pressure, heart rate, or State-Trait Anxiety Inventory scores ($p > 0·05$). Patients reported that relaxation therapy helped them relax and promoted sleep. The results show that relaxation therapy could complement analgesics to help postoperative patients to manage pain and anxiety.

Ma YL (1996), examined the effects of relaxation training on surgical stress among patients with abdominal surgery. Fifty-one patients were randomly divided into two groups. Experimental group (n = 25) patients received preoperative instruction and relaxation training, control group (n = 26) patients received only preoperative instruction. Anxiety state (state anxiety and physical symptoms of anxiety), blood pressure, heart rate, serum cortisone and postoperative pain of two groups were assessed and compared respectively on the third preoperative day, operation day, the first and the fourth postoperative day. Results showed that there were significant differences between two groups ($P < 0.05$) in state anxiety scores on each day, physical symptoms on the first and fourth day after operation and severity of pain on the first postoperative day. Responses of systolic pressure, diastolic pressure, heart rate and serum cortisone level also decreased significantly in the experimental group ($P < 0.05$). This study shows that relaxation training has positive effects on surgical stress responses, especially in reducing the psychological anxiety response.

Johnson S (1984), examined the effectiveness of relaxation and reassurance on stress reduction prior to oral surgery.100 Patients were divided randomly into four groups and their stress level was measured prior to and during the procedure: group one patients received general surgical information about tooth removal; group two patients listened to a relaxation tape; group three patients listened to a combination of surgical information and relaxation information tape; and group four patients had no intervention. The day of oral surgery, patients were administered Corah's Dental Anxiety Scale. In addition,

measurements of peripheral skin temperature, frontalis EMG for facial muscle tension and blood pressure recordings were made. A significant decrease in blood pressure (p_.01) was noted between the experimental and control group. Reduction of anxiety was notably seen with group three patients, where EMG and temperature differences varied from the control group.

D. STUDIES RELATED TO INTRAOPERATIVE VIDEO THERAPY ON ANXIETY

Man AK (2003), conducted a randomized controlled study to evaluate whether watching video compact discs intra-operatively using a liquid crystal display (LCD) unit decreased anxiety. Forty-four patients undergoing elective surgery under regional anaesthesia were assigned to either the LCD or control group. Anxiety was measured using the Chinese version of the State-Trait Anxiety Inventory (STAI) and visual analogue score (VAS). The mean (SD) anxiety trait scores were 46.15 (6.28) and 46.40 (7.32) in the control and LCD groups, respectively. The state anxiety of the LCD group [35.50 (7.96)] measured immediately postoperatively was significantly lower than the control group [41.50 (9.02); p = 0.03]. The median (range) reduction in VAS anxiety score was not significantly greater in the LCD group [20 (20 to 80) mm] compared with the control group [12.5 (70 to 60) mm]. Watching video intra-operatively reduces patient anxiety as measured by the STAI.

Drahota A (2008), conducted a randomised controlled trial to investigate the effectiveness of audiovisual distraction (Bedscapes) on pain and anxiety during minor surgery for the correction of ingrown toenail. 152 patients with ingrown toenails requiring surgical correction under local anaesthesia were allocated to receive Bedscapes+standard care or standard care alone. Pain levels due to local anaesthetic injection were assessed post-procedure, and anxiety levels were assessed pre- and post-procedure in both groups. Participants with high pre-procedure anxiety scores experienced greater pain on injection, and older patients reported lower pain than younger patients, regardless of group allocation. Bedscapes did not reduce pain or anxiety, and was apparently no more effective than interpersonal interaction between podiatry staff and the patient. Pain of injected anaesthesia correlates closely with pre-operative anxiety.

Mosso JL (2009), conducted a randomized controlled study to verify the effectiveness of Virtual reality in reducing anxiety in patients undergoing ambulatory operations under local or regional anaesthesia. Virtual reality was provided through a cell phone connected to an HMD compared to a no-distraction control condition. A significant reduction of anxiety was obtained after 45 minutes of operation in the virtual reality group, but not in the control group and, after 90 minutes, the reduction was larger in the experimental group than in other one. In conclusion, this study presents virtual reality is an innovative promising technique, which needed to reduce anxiety during the surgical interventions.

van Twillert B (2007), conducted a study to explore whether computer generated virtual reality (VR) can reduce the procedural pain and anxiety during an entire wound care session and compared VR to the effects of standard care and other distraction methods among pediatric and adult burn patients. Nineteen inpatients ages 8 to 65 years (mean, 30 years) with a mean TBSA of 7.1% (range, 0.5-21.5%) were studied using a within-subject design. Within 1 week of admission, standard care (no distraction), VR, or another self-chosen distraction method was administered during the wound dressing change. Each patient received the normal analgesic regimen. Pain was measured with visual analog thermometer scores, and anxiety was measured with the state-version of the Spielberger State Trait Anxiety Inventory. After comparing different distraction methods, only VR and television showed significant pain reductions during wound dressing changes. The effects of VR were superior, but not statistical significant, to that of television. Thirteen of 19 patients reported clinically meaningful (33% or greater) reductions in pain during VR distraction and no side effects were reported. No correlations were found between the reduction in pain ratings and patient variables like age, sex, duration of hospital stay, or percentage of (deep) burns.

Hoya Y (2008), examined the effect of an optimal soothing environment (OSE) as a new nonpharmacological intervention to reduce the level of anxiety among patients undergoing gastroscopy in 150 bed acute care hospital in Japan. During a 6-month period, 50 outpatients referred for gastroscopy were randomly assigned to control group (n = 24) and experimental group (n = 26).

The patient anxiety was assessed using the Face Scale score and pre- and post procedural systolic blood pressures were measured and values were compared with blood pressure upon arrival at the hospital. The tools for an OSE, including a safe essential oil burner with lavender essential oil and a digital video disk program were provided to patients in the waiting room before gastroscopy. The score for self-assessed anxiety level just before gastroscopy was significantly higher than that on arrival at the hospital but returned to baseline after gastroscopy in the control group, whereas the score did not increase before starting gastroscopy in the OSE group. Systolic blood pressure measurements just before and after gastroscopy were significantly higher than those on arrival at the hospital and the baseline values in the control group, whereas it was not increased before starting gastroscopy in the OSE group. OSE is a simple, inexpensive, and safe nonpharmacological method of minimizing anxiety before and during gastroscopy.

Bayar A (2008), conducted a study to assess the effect of watching live arthroscopic views on postoperative anxiety of patients. A total of 63 patients were randomly divided into two groups: those watching their own arthroscopy formed group W, while patients that were only verbally informed formed group NW. The mean age of patients in both groups were 33 and 34, respectively. Meniscal surgery was the most commonly performed procedure (49/63 patients). Patients were requested to fill the state scale of State-trait anxiety inventory (STAI) forms and the study questionnaire (SQ) prepared for this study, just before and after the arthroscopy. Group W had significantly lower

postoperative scores of STAI-S, whole questionnaire (Q-score) and all but one of individual statements in SQ. The ratio of patients that were pleased with the arthroscopy experience in group W and NW were 94 and 63%, respectively. Watching live arthroscopic views has led to a significant decrease ($P = 0.0078$) in postoperative anxiety and worries about the surgery and the postoperative period, while increasing overall understanding and satisfaction of the patient.

CHAPTER-III

RESEARCH METHODOLOGY

Methodology of research organizes all the components of study in a way that is most likely to lead to valid answers to the problem that have been posed, **(Burns and Groove, 2002).**

Research methodology is a systematic way to solve the research problem and also to carry out the academic study and research in a correct manner, **(Polit and Beck, 2004)**

This chapter includes the description of research approach, research design, setting of the study, variables, population, sample, sample size, sampling technique, criteria for sample selection, developing and description of tool, validity and reliability of the tool, method of data collection procedure, plan for data analysis and interpretation of data.

RESEARCH APPROACH

The research approach is the most essential part of any research. The entire study based on it. The research approach used in the study is an applied form of research to find out how well the intervention is effective. In this study the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia was evaluated. Therefore on evaluation approach was essential to test the effectiveness of the intervention.

RESEARCH DESIGN

It refers to the overall plan for addressing a research question, including specifications for enhancing the integrity of the study, **(Polit & Beck, 2004).**

The research design selected for the present study was a **Quasi-experimental design, where Pretest Posttest Nonequivalent Group design** was selected to evaluate the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia.

It is structured like a pretest-posttest randomized experiment, but it lacks the key feature of the randomized designs- random assignment. **In Quasi-experimental design, where Pretest Posttest Nonequivalent Group design**, both a control group and an experimental group is compared; however, the groups are chosen and assigned out of convenience rather than through randomization.

Fig 3.1 Diagrammatic representation of research design

Conveniently selected Patients under spinal anaesthesia.	**Pre test**	**Intervention**	**Post test**
Experimental Group	O_1	X	O_2
Control Group	O_3	-	O_4

The symbols used are

O_1- pretest on anxiety among patients under spinal anaesthesia in experimental group

X - intraoperative video therapy

O_2- posttest on anxiety among patients under spinal anaesthesia in experimental group

O_3- pretest on anxiety among patients under spinal anaesthesia in control group

O_4- posttest on anxiety among patients under spinal anaesthesia in control group

SETTING OF THE STUDY

Research settings are specific places in a research where data collection is to be made. The selection of setting was done on the basis of feasibility of conducting the study, availability of subject and permission of authorities, **(Polit and Hungler, 2004).**

The present study was conducted at **Valli hospital, Erode**. It is located 20 Kms away from Dhanvantri College of Nursing. It is 150 bedded private hospital and has highly equipped operation theatre with three operation tables. An approximately 100 patients are undergoing surgical procedure per month, out of which 50% of cases are spinal anesthesia surgery.

VARIABLES

A concept which can take a different qualitative value are called as variables, **(Kothari.C.R, 2002)**

1) **Independent variable**

Independent variable is the variable which has the presumed effect on the dependent variable, (**Basavanthappa.B.T, 2007)**

In this present study the independent variable is **intraoperative video therapy.**

2) **Dependent variable**

Dependent variable is often referred to as the consequence or the presumed effect that varies with a change in the independent variable, **(Basavanthappa.B.T, 2007)**

In this present study the dependent variable is **anxiety**

POPULATION

Population refers to the aggregate (or) totality of all the objects, subject (or) numbers that conform to a set of specifications, **(Polit & Hungler , 1999).**

The population for this present study were all the **patients under spinal anesthesia and present during the period of data collection.**

SAMPLE

According to Polit and Beck (2004), a sample is a subset of population and selected to participate in a research study, it is a portion of the population which represents the entire population.

The samples selected for the present study were the **patients under spinal anesthesia at Valli hospital, Erode, who were willing to participate and present during the period of data collection**

SAMPLE SIZE

Sample size is normally decided by nature of the study, nature of population, type of sampling technique, tool variables, statistical test adopted for data analysis sensitivity of the measures, **(Polit and Beck 2002)**

The total sample size was 30 patients under spinal anesthesia, out of which 15 patients were control group and 15 patients were experimental group.

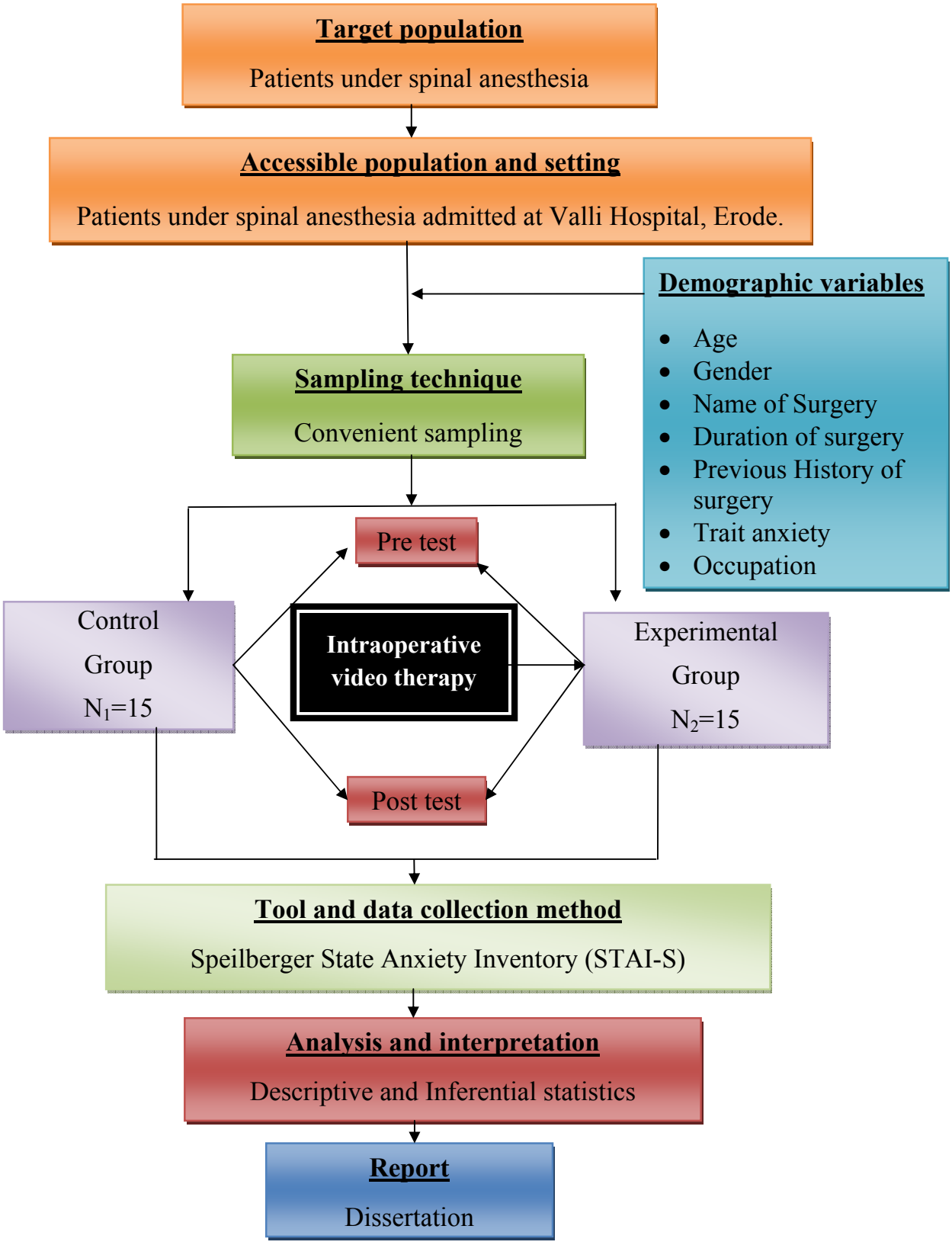

Fig. 3.2: Schematic representation of research methodology

SAMPLING TECHNIQUE

According to Polit and Beck (2004), sampling technique refers to the process of selecting the population to represent the entire population.

All the patients under spinal anesthesia, in the operation theatre, present during the period of data collection were selected as samples. The investigator was selected the control and experimental group by convenient sampling technique. The experimental group patients selected from 11-08-2011 to 25-08-2011, whereas control group patients selected from 26-08-2011 to 10-09-2011. The difference in the selection of control group was after 15 days selection of experimental group. It is to avoid the contamination of the experimental group with the control group

Convenient sampling technique is a non probability sampling procedure in which the sampling units are selected because they are available to the investigator at the time of data collection; also called accidental sampling. **(Basvanthappa. B.T, 2007)**

CRITERIA FOR SAMPLE SELECTION

⇒ **Inclusion criteria**

Patients under spinal anesthesia with

1. Age group of 20-60 years.
2. Both gender

3. Undergoing surgery such as

    - ✓ Fistulectomy
    - ✓ Hemorrhoidectomy
    - ✓ Hernia repair
    - ✓ Appendicectomy
    - ✓ fissurectomy

4. Who were present during the period of data collection.
5. Who gave consent to participate in this study.
6. Who are able to read Tamil

⇒ **Exclusion criteria**

Patient under spinal anesthesia with

1. Visual impairment
2. Hearing impairment
3. Spinal anesthesia converted into general anesthesia
4. Unstable vital parameters
5. Complication during surgery
6. Sedation
7. Mental illness.

DEVELOPMENT OF THE TOOL

The tool act as an instrument to assess and collect the data from the respondent of the study, **Polit and Beck (2004).**

There are 2 sections of tools were used. They are,

SECTION A

It consists of demographic characteristics of patients under spinal anesthesia, i.e.,

1) Age in years
2) Gender
3) Name of surgery
4) Duration of surgery
5) Previous history of surgery
6) Trait anxiety (STAI-T)
7) Occupation

SECTION B

It consists of **Spielberger State Anxiety Inventory (STAI-S)** which consists of 20 self reporting statements, and the answers to these are used to determine a patient's current anxiety level. Each statement in the STAI-S is

rated on a four-point scale (not at all-1, a little-2, somewhat-3 and very much so-4).

Scoring procedure

STAI-S consists of 9 positive statements and 11 negative statements.

- Positive statements are 1, 2, 5, 8, 11, 15, 16, 19, 20
- Negative statements are 3,4,6,7,9,10,12,13,14,17,18

For the purpose of scoring and interpretation positive statements are reverse-scored (ie., a 4 scores 1 point and a 1 scores 4 point etc.,)

The overall (total) score for STAI ranges from a minimum of 20 to a maximum of 80; STAI scores are commonly classified as 'no or low anxiety' (20–37), 'moderate anxiety' (38–44), and 'high anxiety' (45–80).

Table 3.1 Scoring procedure for level of anxiety

Level of anxiety	Actual scores	Percentage
No/Low anxiety	20-37	25-46%
Moderate anxiety	38-44	47-55%
High anxiety	45-80	56-100%

VALIDITY AND RELIABILITY

Validity

The content validity of the demographic variables and STAI-S were validated in consultation with guide and field of experts. The experts are **surgeon, anesthetist, psychologist, statistician and nurse specialist**. The tool was modified according to the suggestions and recommendations of the experts, (Appendix VIII).

Reliability

The reliability of **Spielberger State Anxiety Inventory (STAI-S)** was tested by implementing the tool on 4 patients under spinal anesthesia, out of which 2 were experimental group and 2 were control group at Government Head Quarters Hospital, Erode, which is other than the sample area. **Split Half method** (Spearman Brown Formula) was used to test the reliability of the tool. The tool was found to be reliable, ($\mathbf{r^1} = 0.91$).

DATA COLLECTION PROCEDURE

Data collection is the gathering of information needed to address the research problem. The word “data” means information that is systematically collected in the course of a study.

Talbot (1995) refers to data collection as gathering of information from the sampling units. The researcher plan typically specifies procedure for actual

collection of data. The researcher must be sure that enough materials available to complete the study that the participants are informed that the schedule do not conflict.

★ **Permission from the concerned authority**

Prior to collection of data, permission was obtained from Managing Director of Valli Hospital, Erode, (Appendix I and II).

★ **Period of data collection**

The data was collected from 11-08-2011to 10-09-2011. The investigator collected the data from both control group and experimental group.

★ **Pre test**

Patients were requested to complete state anxiety components of the STAI pre-operatively on arrival at the operating theatre holding area.

★ **Implementation of intraoperative video therapy**

Intraoperative video therapy was shown to the experimental group, after the patients under spinal anesthesia were stabled in the surgical table during intraoperative period.

★ **Post test**

The state anxiety inventory was repeated immediately on admission to the recovery room after the surgery. All patients were instructed to reflect their level of anxiety during the surgery while completing the state anxiety

inventory. This score was taken to represent the intra-operative state anxiety score.

PLAN FOR DATA ANALYSIS

- ✓ Assess the level of anxiety among control and experimental group of patients under spinal anesthesia before and after video therapy was analyzed by using **frequency and percentage**.
- ✓ Assess the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia in experimental and control group was analyzed by using **mean, standard deviation, mean percentage, paired 't' test and unpaired 't'test.**
- ✓ Association between post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variables was analyzed by using **Chi-square test.**

SUMMARY

Quasi-experimental design was carried on 30 patients under spinal anesthesia admitted at Valli Hospital, Erode, by using convenient sampling technique. Speilberger state anxiety inventory (Stai-S) was used to assess the anxiety among patients under spinal anesthesia. The data was collected after obtaining the permission from concerned personnel of the hospital. Analysis was planned to do by using descriptive and inferential statistics and to be presented in the form of tables, graphs and figures.

CHAPTER -IV

DATA ANALYSIS AND INTERPRETATION

Analysis is a "process of organizing and synthesizing data in such a way that research questions can be answered and hypothesis tested", **(Polit and Hungler, 2003).**

Analysis enables the researcher to reduce, summarize, organize, evaluate, interpret and communicate numerical information, **(Polit and Hungler, 2004).**

This chapter deals with the analysis and interpretation of data collected from 30 (15 Control group and15 experimental group) patients under spinal anesthesia admitted in Valli Hospital, Erode, "to assess the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia".

The data were coded and analyzed as per objectives of the study under the following headings;

Section A: Description of sample characteristics

Section B: Assess the level of anxiety among control group and experimental group of patients under spinal anesthesia before and after video therapy.

- Frequency and percentage distribution of the control group pre test and post test scores of level of anxiety among patients under spinal anesthesia.
- Frequency and percentage distribution of the experimental group pre test and post test scores of level of anxiety among patients under spinal anesthesia
- Frequency and percentage distribution of the control group and experimental group post test scores of level of anxiety among patients under spinal anesthesia.

Section C: Compare the effectiveness of intraoperative video therapy on anxiety among control and experimental group of patients under spinal anesthesia.

- Paired 't' test value of pre and post test scores of anxiety in control and experimental group

- Comparison of mean, standard deviation, and mean percentage of level of anxiety among control and experimental group pre and post test scores.
- Unpaired 't' test value of post test scores of anxiety in control and experimental group

Section D: Find out the association between the post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variables.

- Chi-square value of association between the post test scores of control group regarding level of anxiety among patients under spinal anesthesia with their demographic variables
- Chi-square value of association between the post test scores of experimental group regarding level of anxiety among patients under spinal anesthesia with their demographic variables.

SECTION A

DESCRIPTION OF SAMPLE CHARACTERISTICS

Table 4.1 Frequency and percentage distribution of control and experimental group of patients under spinal anesthesia according to their demographic variables.

(N_1= 15, N_2=15)

S.No	Demographic variables	Control group		Experimental group	
		Frequency (N_1)	Percentage (%)	Frequency (N_2)	Percentage (%)
1.	**Age in years**				
	a) 21-30	1	7	3	20
	b) 31-40	5	33	3	20
	c) 41-50	5	33	4	27
	d) 51-60	4	27	5	33
2.	**Gender**				
	a) Male	9	60	8	53
	b) Female	6	40	7	47
3.	**Name of surgeries**				
	a) Fistulectomy	3	20	4	27
	b) Hemorrhoidectomy	4	27	3	20
	c) Hernia repair	3	20	3	20
	d) Appendicectomy	1	06	1	06
	e) Fissurectomy	4	27	4	27

S.No	Demographic variables	Control group		Experimental group	
		Frequency (N_1)	Percentage (%)	Frequency (N_2)	Percentage (%)
4.	**Duration of surgery**				
	a) Less than 1 hour	12	80	13	87
	b) 1-2 hour	3	20	2	13
	c) More than 2 hour	0	0	0	0
5.	**Previous history of surgery**				
	a) Yes	6	40	9	60
	b) No	9	60	6	40
6.	**Trait anxiety**				
	a) No/low anxiety	7	47	8	53
	b) Moderate	7	47	5	33
	c) High anxiety	1	06	2	14
7.	**Occupation**				
	a) Medical	1	06	0	0
	b) Non medical	14	94	15	100

Table 4.1 Reveals the frequency and percentage distribution of patients under spinal anesthesia according to their demographic variables.

Distribution of control and experimental group samples according to their age group depicts that, in control group similar percentage (33%) of them

were in the age group of 31-40 years and 41-50 years and the lowest percentage (7%) of them were in the age group of 21-30 years. In experimental group the highest percentage (33%) of patients under spinal anesthesia were in the age group of 51-60 years and the similar percentage (20%) of patients under spinal anesthesia were in the age group of 21-30 years and 31-40 years respectively. It might be associated with patients under spinal anesthesia for gastro intestinal surgeries,(Fig 4.1).

Distribution of control and experimental group samples according to their gender depicts that, the highest percentage (60% and 53%) of patients under spinal anesthesia were males, whereas the lowest percentage (40% and 47%) of patients under spinal anesthesia were females in control and experimental group. This shows that the highest populations of male patients are undergoing spinal anesthesia for gastro intestinal surgeries, (Fig 4.2).

Distribution of control and experimental group samples according to their name of surgery reveals that, both from control group and experimental group the similar percentage (27%) of patients underwent spinal anesthesia for hemorrhoidectomy and fissurectomy in control group and fistulectomy and fissurectomy in experimental group. But in both control and experimental group, least percentage (6% and 6%) of patients underwent spinal anesthesia for appendicectomy, (Fig 4.3).

Distribution of control and experimental group of patients according to their duration of surgery shows that highest percentage (80% and 87%) of the

patients were completed their surgery within an hour in control and experimental group. About 20% and 13% of patients from control and experimental group were completed their surgeries in 1-2 hour. There was no more surgeries which prolonged more than 2 hour, (Fig 4.4).

Distribution of control and experimental group of patients according to their previous history of surgery depicts that, most (60%) of the patients had no previous history in control group, whereas most (60%) of the patients had previous history of surgery in experimental group. The variation is around 20%, (Fig 4.5).

Distribution of control and experimental group of patients according to their trait anxiety depicts that similar percentage (47%) of the patient had no/low anxiety and moderate anxiety in control group, whereas most (53%) of the patients had no/low anxiety in experimental group. However very few (6% and 14%) of the patients had high anxiety in both control and experimental group, (Fig 4.6).

Distribution of control and experimental group of patients according to their occupation shows that, in control group most (94%) of them from non medical profession and only 6% of them from medical profession, whereas all the patients under spinal anesthesia from experimental group are non medical profession,(Fig 4.7).

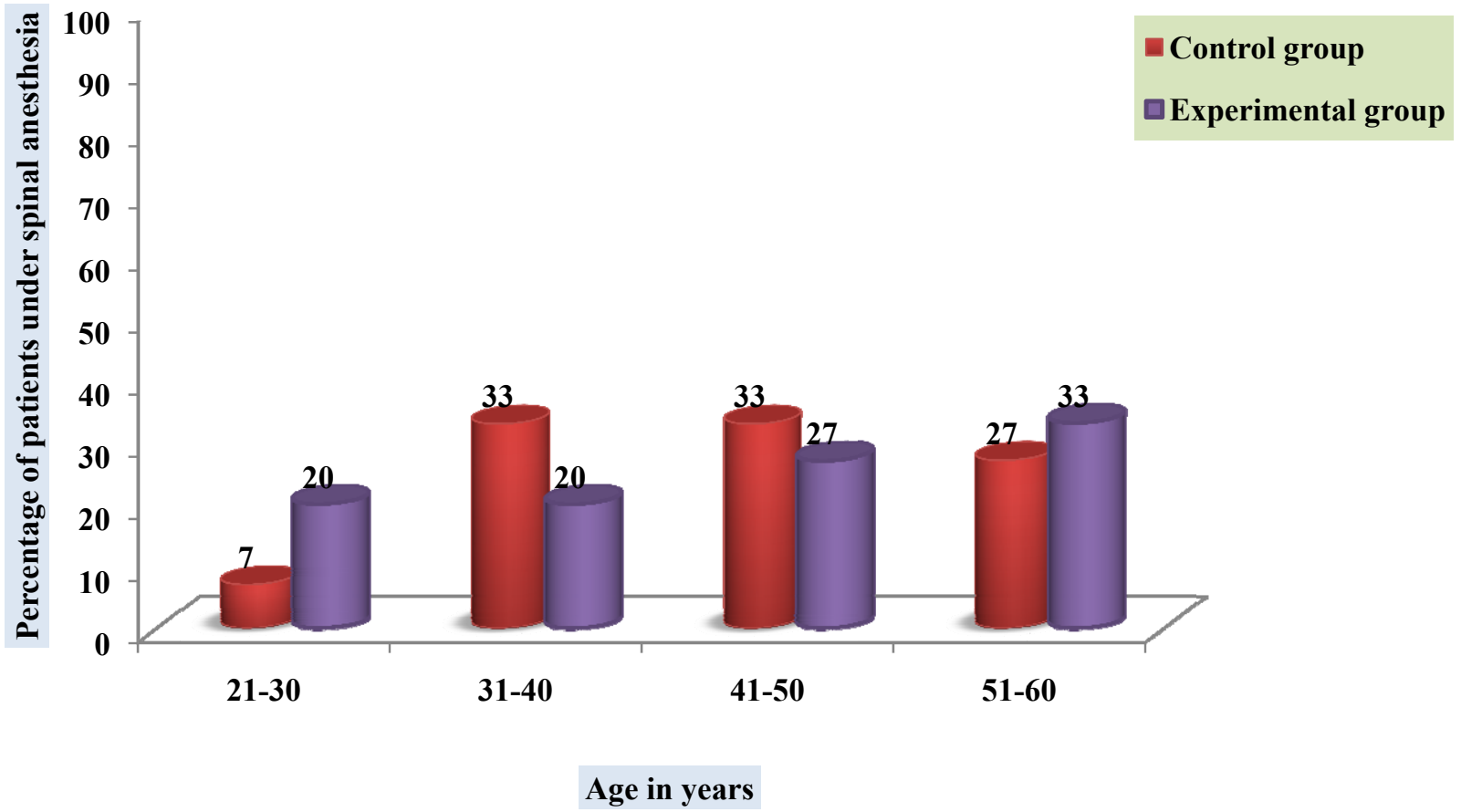

Fig.4.1: Bar diagram showing the percentage distribution of control and experimental group samples according to their age group

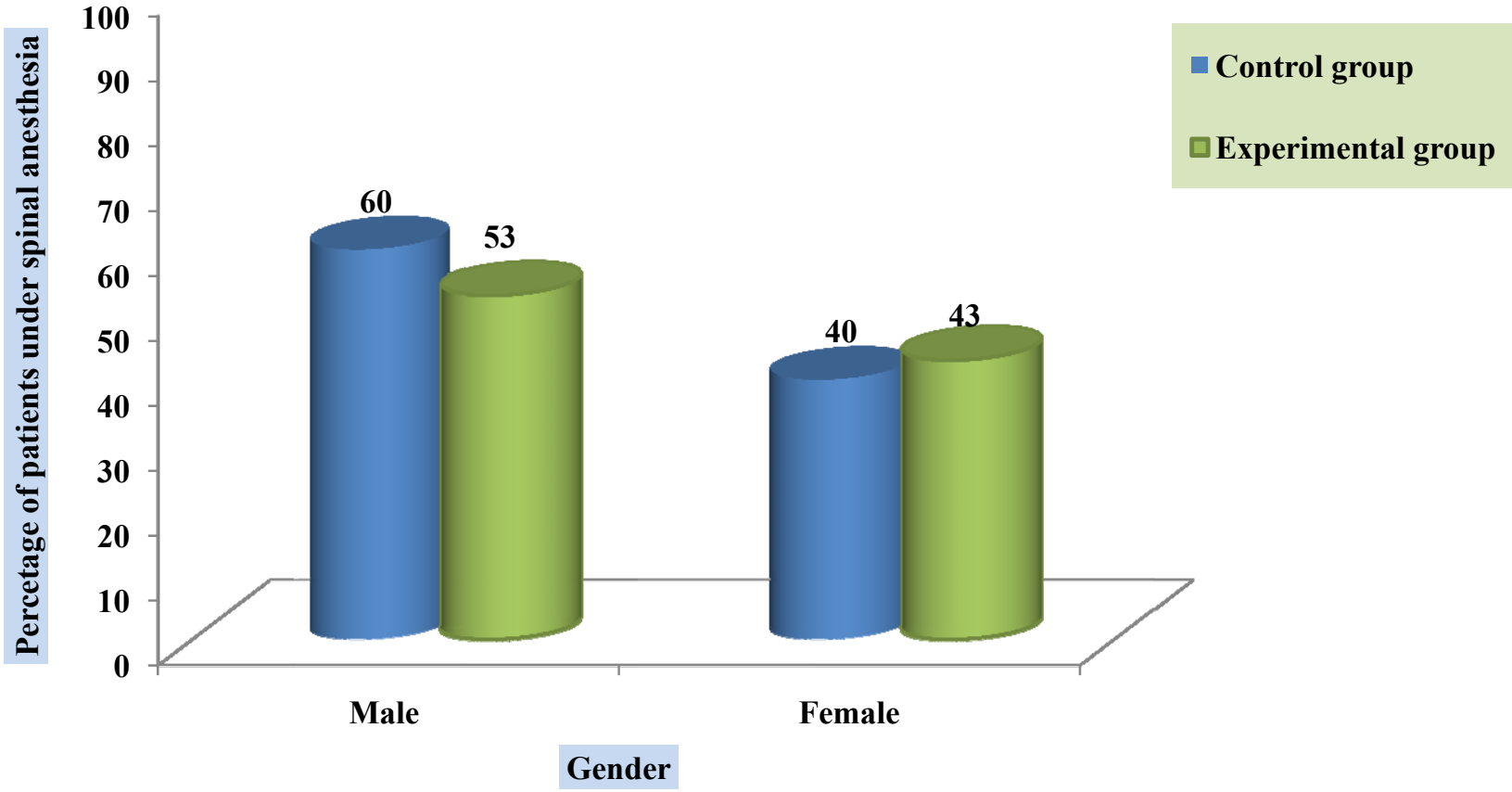

Fig.4.2: Bar diagram showing the percentage distribution of control and experimental group samples according to their gender

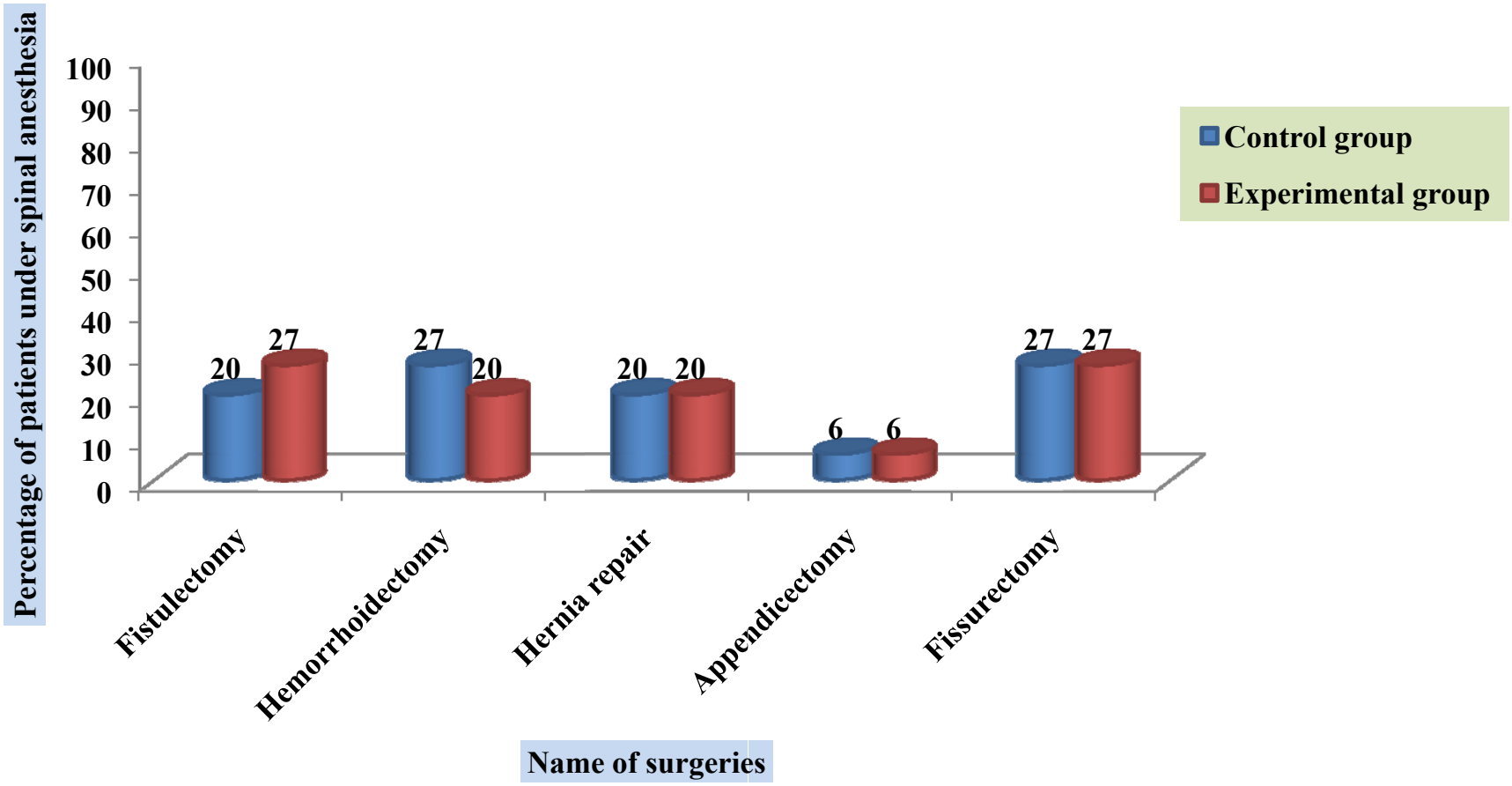

Fig.4.3: Bar diagram showing the percentage distribution of control and experimental group samples according to their name of surgeries

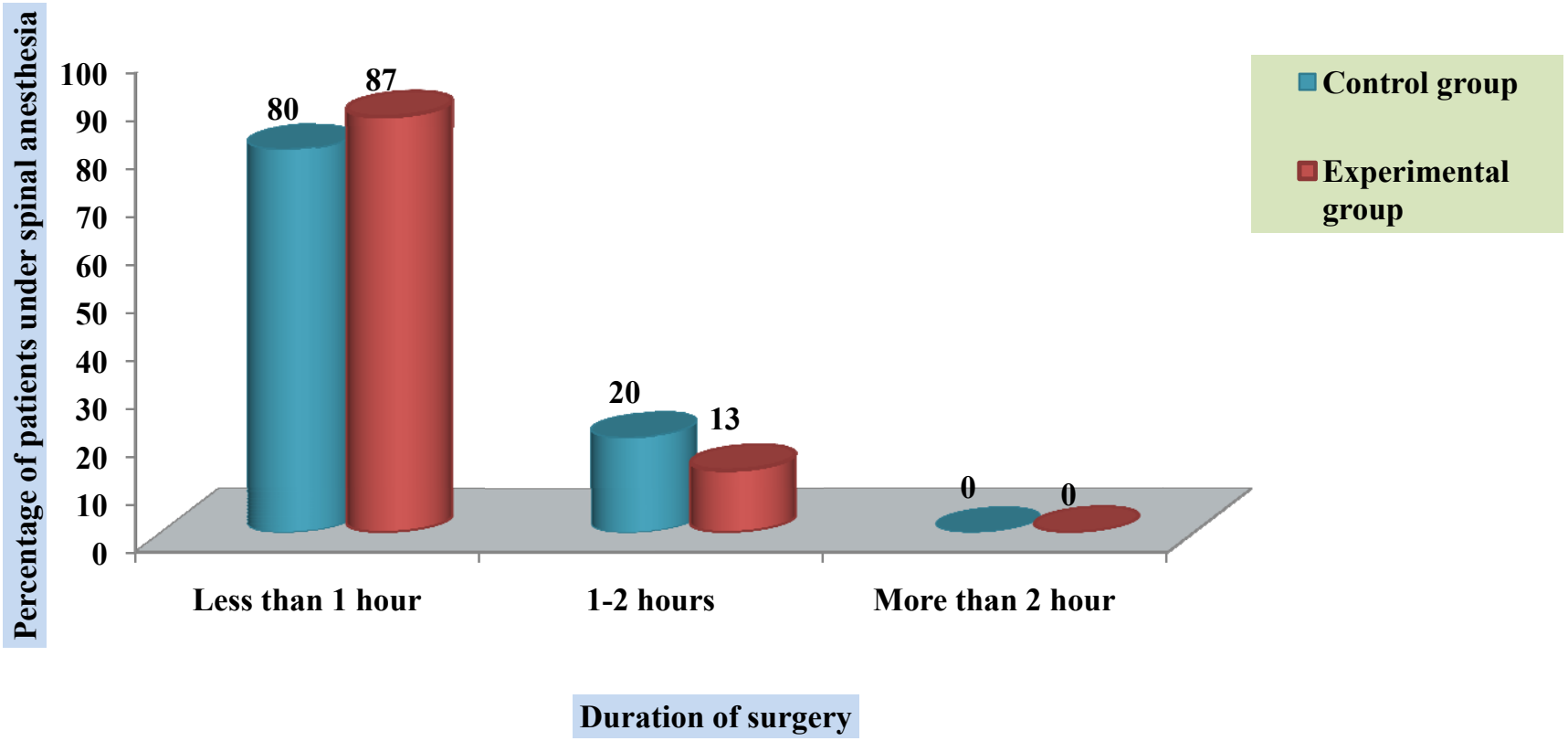

Fig.4.4: Bar diagram showing the percentage distribution of control and experimental group samples according to their duration of surgery

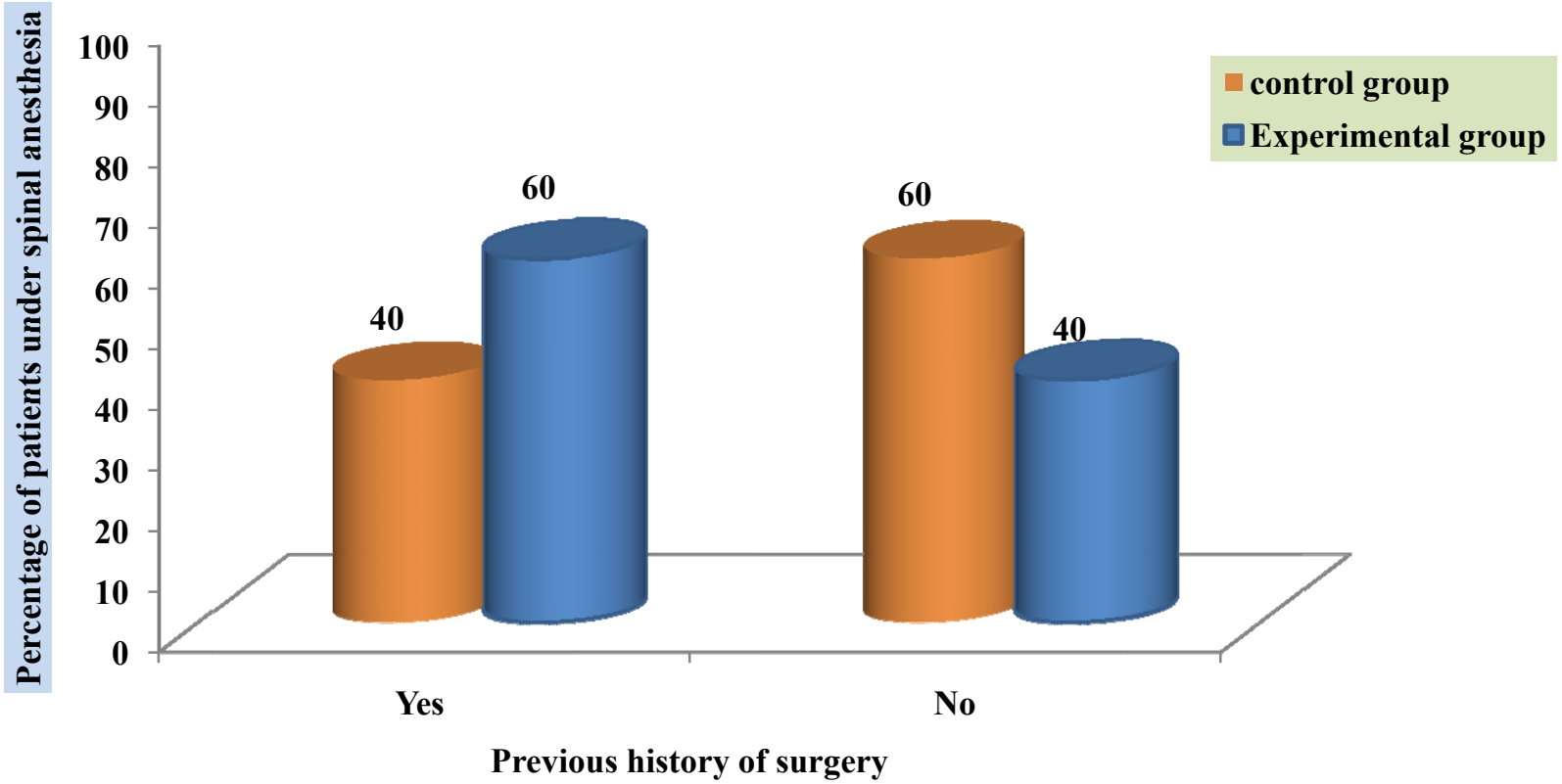

Fig.4.5: Bar diagram showing the percentage distribution of control and experimental group samples according to their previous history of surgery

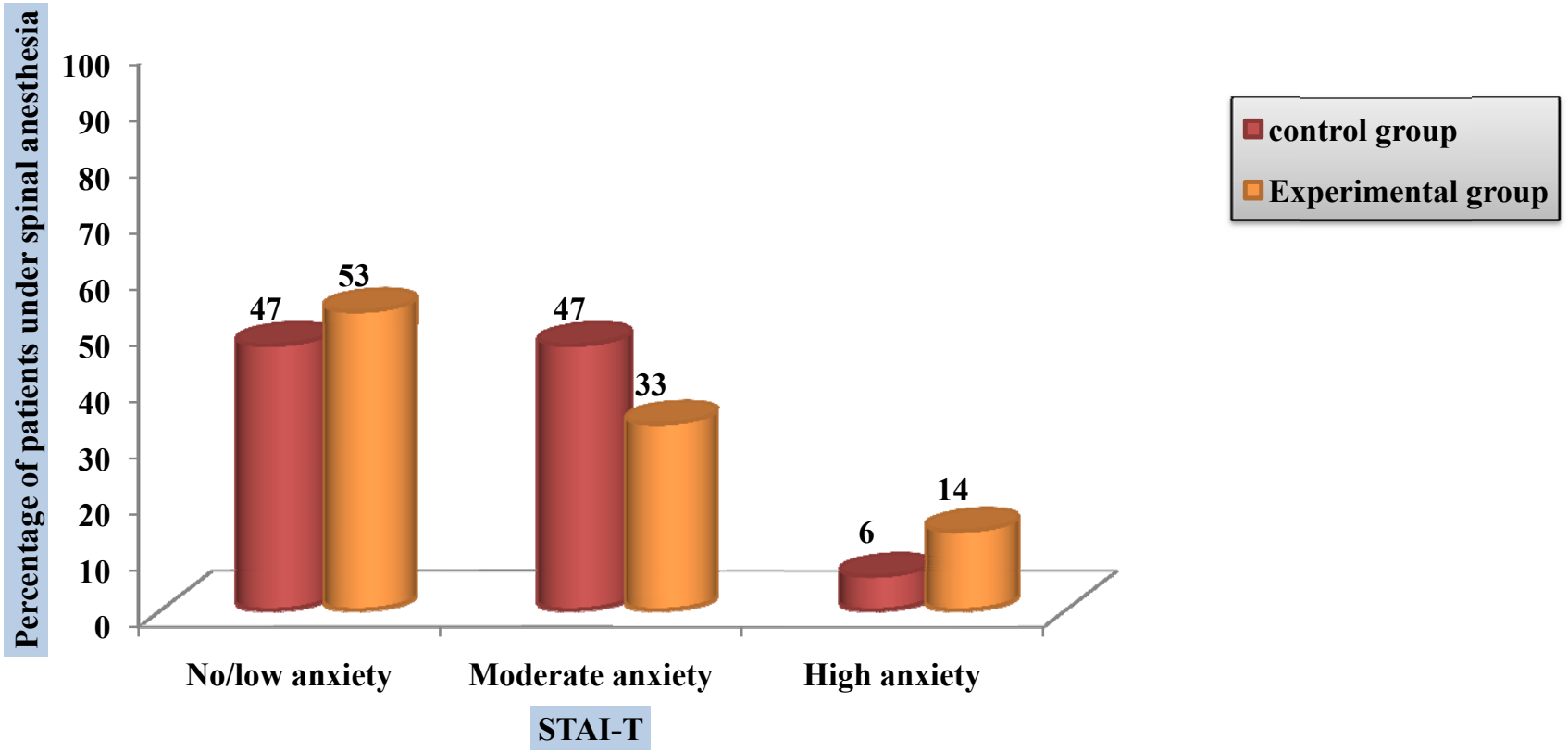

Fig.4.6: Bar diagram showing the percentage distribution of control and experimental group samples according to their trait anxiety

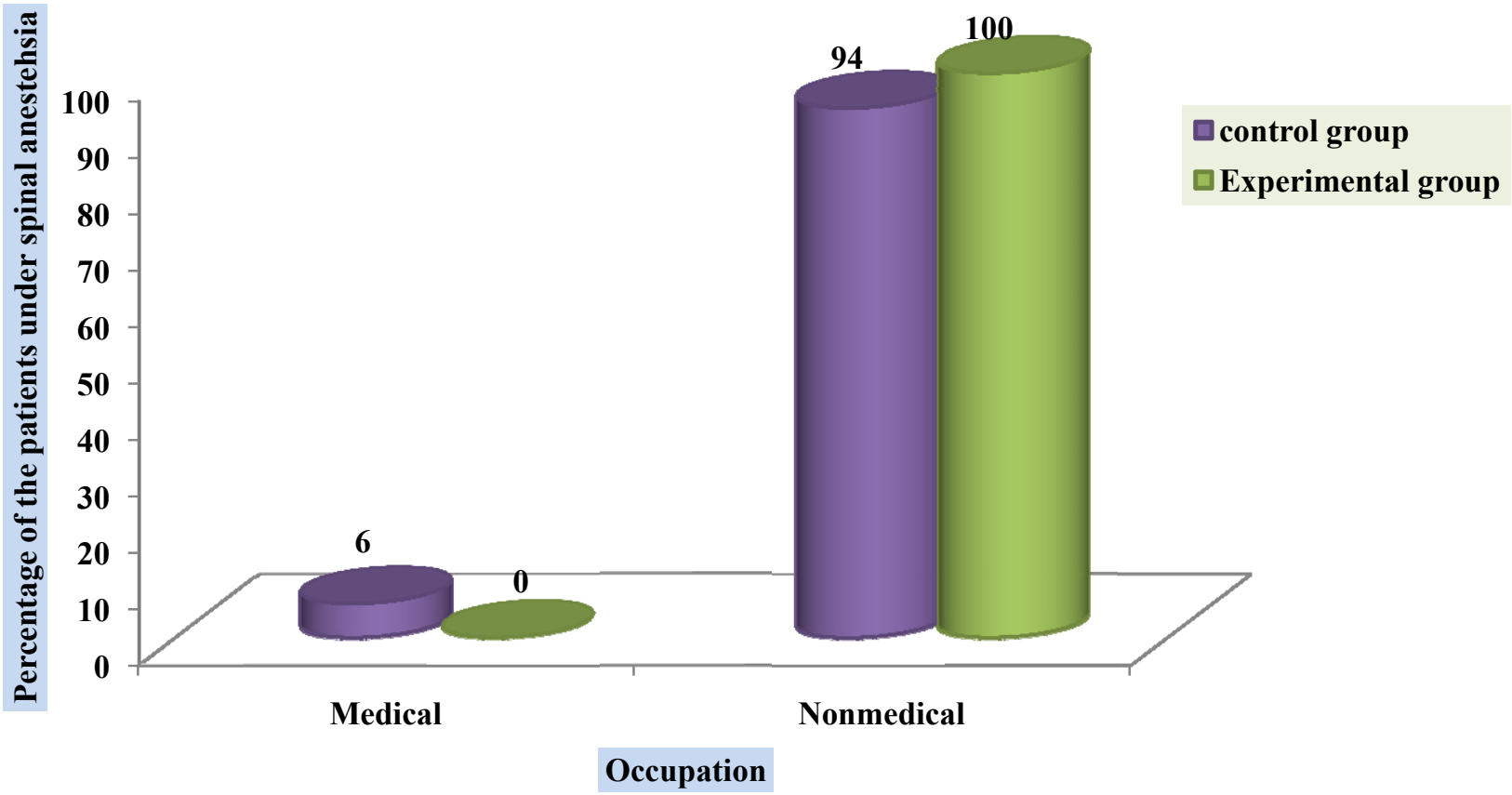

Fig.4.7: Bar diagram showing the percentage distribution of control and experimental group samples according to their occpatoin

SECTION B

ASSESS THE LEVEL OF ANXIETY AMONG CONTROL AND EXPERIMENTAL GROUP OF PATIENTS UNDER SPINAL ANESTHESIA BEFORE AND AFTER VIDEO THERAPY

Table 4.2 Frequency and percentage distribution of the control group pre test and post test scores of level of anxiety among patients under spinal anesthesia.

(N_1=15)

Level of anxiety	Control group			
	Pre test scores		Post test scores	
	Frequency (N_1)	Percentage %	Frequency (N_1)	Percentage (%)
No/Low anxiety	7	47	10	67
Moderate anxiety	7	47	4	27
High anxiety	1	06	1	06

Frequency and percentage distribution of control group pre test and post test level of anxiety among patients under spinal anesthesia depicts that, in pre test majority (47% and 47%) of patients had no/low anxiety and moderate

anxiety, whereas in post test, 67% percentage of patients had no/low anxiety, 27% of them had moderate anxiety and only 6% of patients had high anxiety. It seems that without intervention also there is mild change in the level of anxiety among patients under spinal anesthesia, (Table 4.2).

Table 4.3 Frequency and percentage distribution of the experimental group pre test and post test scores of level of anxiety among patients under spinal anesthesia.

(N_2=15)

Level of anxiety	Experimental group			
	Pre test		Post test	
	Frequency (N_2)	Percentage %	Frequency (N_2)	Percentage %
No/Low anxiety	8	53	13	87
Moderate anxiety	5	33	2	13
High anxiety	2	14	0	0

Frequency and percentage distribution of experimental group pre test and post test scores of level of anxiety among patients under spinal anesthesia depicts that, in pretest majority (53%) of patients had no/low anxiety, 33 percentage of patients had moderate anxiety and only 14% of patients had high anxiety, whereas in post test most of them (87%) had no/low anxiety and 13% of patients had moderate anxiety. It seems that intraoperative video therapy on anxiety among patients under spinal anesthesia was effective, (Table 4.3).

Table 4.4 Frequency and percentage distribution of the control group and experimental group post test scores of level of anxiety among patients under spinal anesthesia.

(N_1=15) (N_2=15)

Level of anxiety	Post test scores			
	Control group		Experimental group	
	Frequency (N_1)	Percentage %	Frequency (N_2)	Percentage %
No/Low anxiety	10	67	13	87
Moderate anxiety	4	27	2	13
High anxiety	1	06	0	0

Frequency and percentage distribution of control group and experimental group post test scores of level of anxiety among patients under spinal anesthesia depicts that, in control group most (67%) of patients had no/low anxiety, 27% of patients had moderate anxiety and 6% of them had high anxiety, whereas in experimental group most (87%) of patients had no/low anxiety and only 13 percentage of patients had moderate anxiety. It seems that intraoperative video therapy on anxiety among patients under spinal anesthesia was effective, (Table 4.4).

SECTION C

COMPARE THE EFFECTIVENESS OF VIDEO THERAPY ON ANXIETY AMONG CONTROL AND EXPERIMENTAL GROUP OF PATIENTS UNDER SPINAL ANESTHESIA.

The effectiveness of intraoperative video therapy was tested by using mean, standard deviation, mean percentage, paired 't' test and unpaired 't' test.

Table 4.5: Paired 't' test value of pre and post test scores of level of anxiety in control and experimental group

Patients under spinal anesthesia	**Paired 't' value**	**Table value**	**Level of significant (P)**
Control group	6.83	2.15	P < 0.05 **significant**
Experimental group	10.43	2.15	P < 0.05 **significant**

Df =14 **Table value=2.15** **P<0.05 significant**

Paired't' test was calculated to analyze the effectiveness between pre and post test scores of control and experimental group on level of anxiety among patients under spinal anesthesia. The paired't' test value was 6.83 and 10.43 in control group and experimental group, when compared to table value

(2.15) both are high. This shows that even though there was a significant effectiveness between pre and post test scores of level of anxiety among both control and experimental group, intraoperative video therapy was more effective on anxiety among patients under spinal anesthesia, (Table 4.5).

Table 4.6 comparison of mean, standard deviation, and mean percentage of level of anxiety among control and experimental group pre and post test.

Patients under spinal anesthesia	Max scores	Pre test			Post test			Difference in mean
		Mean	SD	Mean %	Mean	SD	Mean %	%
Control group	80	36.33	8.96	45.41	34.33	8.06	42.91	2.5
Experimental group	80	35.67	7.78	44.59	28.07	5.54	35.09	9.50

Comparison of mean, SD, and mean percentage of control and experimental group pre and post test scores reveals that, in control group, pre test mean score was (36.33 ± 8.96),which is 45.41%, whereas in post test the mean score was (34.33 ± 8.06), which is 42.91%, showing a difference of 2.5% on the level of anxiety. In experimental group, pre test the mean score was (35.67± 7.78), which is 44.59%, whereas in post test the mean score was (28.07 ± 5.54), which is 35.09%, showing a difference of 9.50% on level of anxiety. It seems that intraoperative video therapy was effective on anxiety among patients under spinal anesthesia. The findings are represented in Fig 4.8.

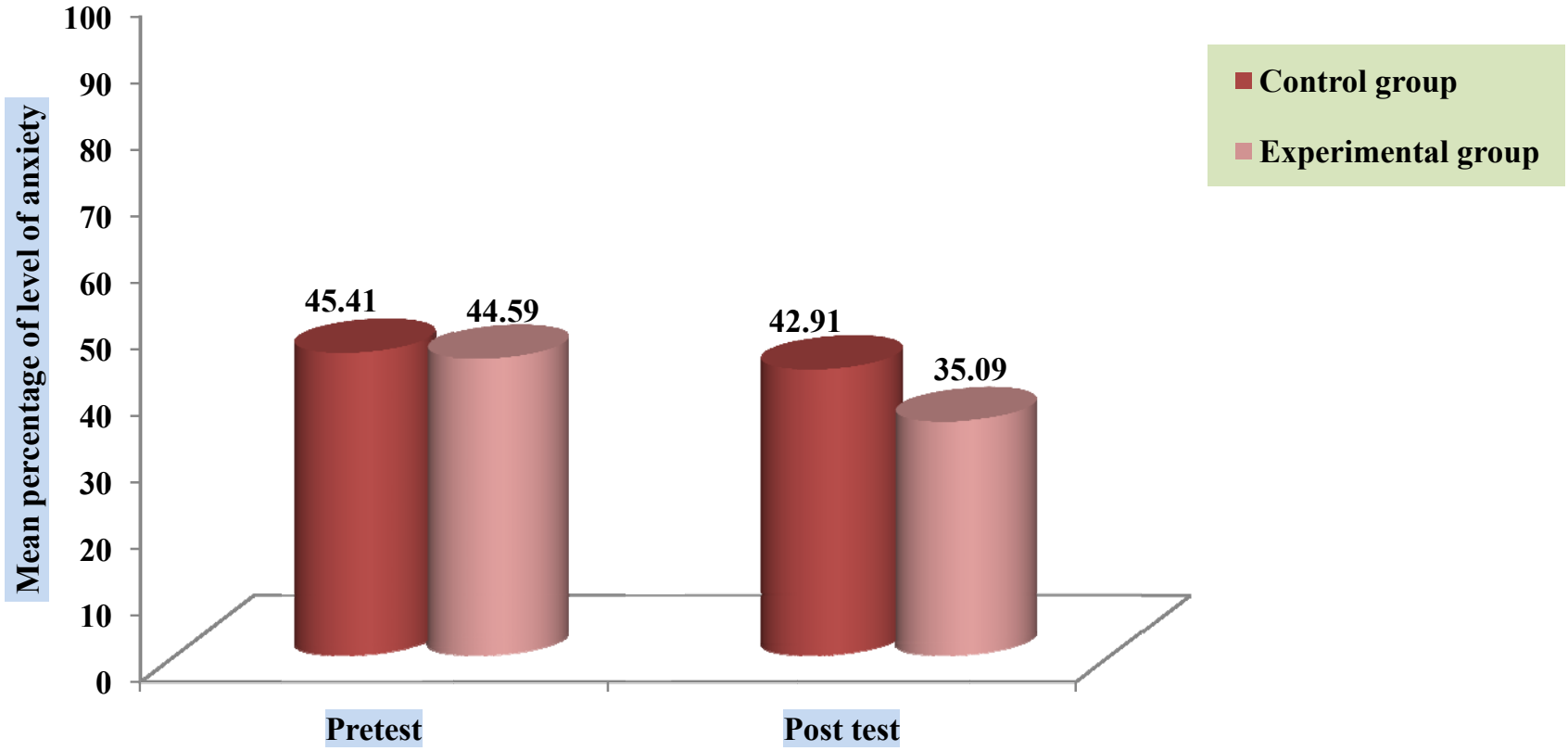

Fig.4.8: Bar diagram showing the mean percentage distribution of pretest and post test scores of level of anxiety among patients under spinal anesthesia in control and experimental group

Table 4.7: Unpaired‘t’ test value of post test scores of anxiety in control group and experimental group

Level of anxiety	Unpaired ‘t’ value	Table value	Level of significant (P)
Post test scores of anxiety in experimental and control group	2.42	2.05	P<0.05 **Significant**

Df=28 Table value=2.05 P<0.05 significant

Unpaired ‘t’ test was calculated to analyze the effectiveness between control and experimental groups post test scores on level of anxiety among patients under spinal anesthesia. The unpaired ‘t’ test value was 2.42, when compared to table value (2.05, $p<0.05$), it is high. It seems that there was a significant effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia. (Table: 4.7).

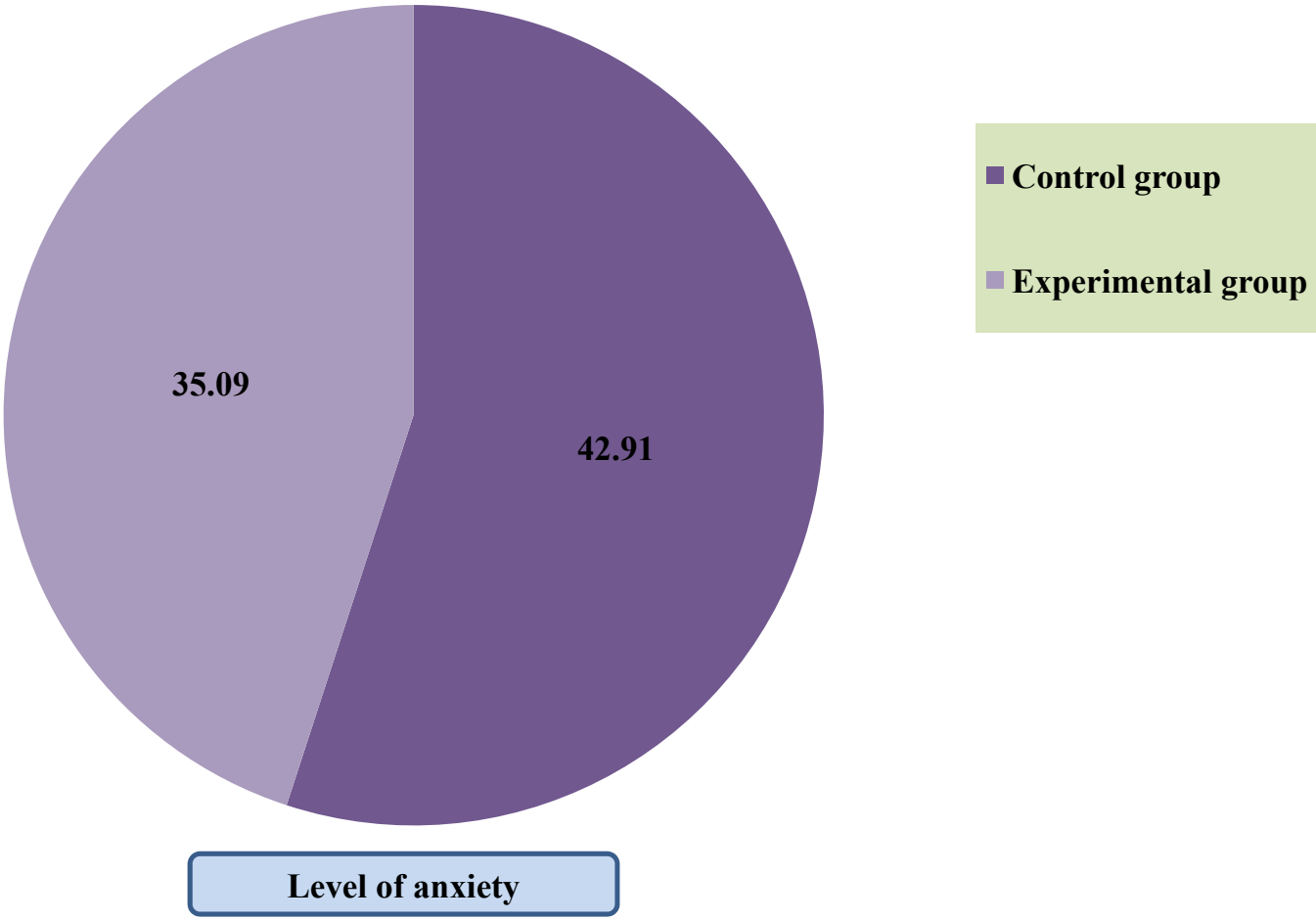

Fig.4.9: Pie diagram showing the comparison of mean percentage of level of anxiety of control and experimental group during post test.

SECTION – D

ASSOCIATION BETWEEN THE POST TEST SCORES OF LEVEL OF ANXIETY AMONG CONTROL AND EXPERIMENTAL GROUP OF PATIENTS UNDER SPINAL ANESTHESIA WITH THEIR DEMOGRAPHIC VARIABLES

Chi-square was calculated to analyze the association between demographic variables with the control and experimental groups post test scores on anxiety among patients under spinal anesthesia.

Table 4.8 Chi-square value of association between control group post test scores with their demographic variables

Demographic variables	DF	$\chi 2$	Table value	Level of significance
Age	1	0.51	3.84	P > 0.05 Not significant
Gender	1	0.51	3.84	P>0.05 Not significant
Name of the surgeries	4	2.62	9.49	P>0.05 Not significant
Duration of surgery	1	1.36	3.84	P>0.05 Not Significant
Previous history of surgery	1	0.51	3.84	P>0.05 Not significant
Trait anxiety (stai-t)	1	6.03	3.84	P<0.05 **Significant**
Occupation	1	0.46	3.84	P>0.05 Not significant

Chi square was calculated to find out the association between control group post test scores of the patients under spinal anesthesia with their demographic variables (Age, gender, name of surgeries, duration of surgery, previous history of surgery, trait anxiety and occupation). It reveals that there was significant association ($p<0.05$) found only in trait anxiety(stai-t), whereas no significant association ($p>0.05$) found between the post test scores of control group when compared to other demographic variables such as age, gender, name of surgeries, duration of surgery, previous history of surgery and occupation. Hence the differences observed in the mean scores values were only by chance and not true difference.

Table 4.9 Chi-square value of association between experimental group post test scores with their demographic variables.

Demographic variables	DF	$\chi 2$	Table value	Level of significance
Age	1	0.00	3.84	P > 0.05 Not significant
Gender	1	3.50	3.84	P>0.05 Not significant
Name of surgery	4	1.09	9.49	P>0.05 Not significant
Duration of surgery	1	4.29	3.84	P<0.05 **Significant**
Previous history of surgery	1	0.00	3.84	P>0.05 Not significant
Trait anxiety (stai-t)	1	8.80	3.84	P<0.05 **Significant**
Occupation	1	0.00	3.84	P>0.05 Not significant

Chi square was calculated to find out the association between experimental group post test scores of the patients under spinal anesthesia with their demographic variables (Age, gender, name of surgeries, duration of surgery, previous history of surgery, trait anxiety and occupation). It reveals that there was significant association ($p<0.05$) found only in duration of surgery and trait anxiety(stai-t), whereas no significant association ($p>0.05$) found between the post test scores of experimental group when compared to other demographic variables such as age, gender, name of surgeries, previous

history of surgery and occupation. Hence the differences observed in the mean scores values were only by chance and not true difference. It seems that intraoperative video therapy was effective to all the patients under spinal anesthesia irrespective of their demographic variables.

SUMMARY

This chapter deals with analysis and interpretation of data collected to evaluate the effectiveness of intraoperative video therapy. The findings revealed that mean post test scores of level of anxiety among patients under spinal anesthesia in control group was 34.33±8.06, whereas in experimental group the post test mean score of level of anxiety was 28.07±5.54. It indicates that intra-operative video therapy is effective among patients under spinal anesthesia. The paired 't' test and unpaired 't' test showed, there was a significant effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia. Chi square test showed only trait anxiety in control group and duration of surgery and trait anxiety in experimental group have significant association with their post test scores of level of anxiety and other demographic variables have no significant association with the post test score of level of anxiety in both control and experimental group.

CHAPTER – V

DISCUSSION

This chapter deals with the discussion which was based on the findings obtained from the statistical analysis and its relation to the objectives of the study, the conceptual frame work and the related literature.

This study was done to assess the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia at Valli Hospital, Erode. The following were the objectives of this study.

Objectives of the study were

1) To assess the level of anxiety among patients under spinal anesthesia in control and experimental group before and after intraoperative video therapy.

2) To determine the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia in control and experimental group.

3) To find out the association between post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variables.

Objective-1: **To assess the level of anxiety among patients under spinal anesthesia in control and experimental group before and after intraoperative video therapy.**

The findings are:

- **In control group**,
  - In pre test majority (47% and 47%) of patients had no/low anxiety and moderate anxiety and only 6% of patients had high anxiety.
  - In post test majority (67%) of patients had no/low anxiety, 27% of them had moderate anxiety and only 6% of patients had high anxiety.
- **In experimental group,**
  - In pre test majority (53%) of patients had no/low anxiety, 33 percentage of patients had moderate anxiety and only 14% of patients had high anxiety.
  - In post test most of them (87%) had no/low anxiety, 13% of patients had moderate anxiety and none of them had high anxiety.

Hypothesis: 1- There was a significant level in anxiety among patients under spinal anesthesia in control and experimental group before and after video therapy. So the hypothesis was accepted.

Objective 2: To determine the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia in control and experimental group.

The results are:

- **In control group**
  - Paired‘t’ test value was 6.83, when compared to table value (2.15), it is high
  - Pre test the mean score was 36.33 ± 8.96, which is 45.41%
  - Post test the mean score was 34.33 ± 8.06, which is 42.91%,
  - Mean difference was 2.5%
  - It seems that without intervention also there was mild change in the level of anxiety among patients under spinal anesthesia.
- **In experimental group.**
  - Paired‘t’ test value was 10.43, when compared to table value (2.15), it is high
  - Pre test the mean score was 35.67± 7.78, which is 44.59%
  - Post test the mean score was 28.07 ± 5.54, which is 35.09%,
  - Mean difference was 9.50%
  - It seems that intraoperative video therapy was moderately effective on anxiety among patients under spinal anesthesia.

- The unpaired 't' test value was 2.42, when compared to table value (2.05), it is high. It seems that there was a significant effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia.

Hypothesis 2:

There was a significant effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia in experimental than control group. So the hypothesis was accepted.

Objective 3: **To find out the association between post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variables.**

- Chi square test showed only trait anxiety in control group and duration of surgery and trait anxiety in experimental group have significant association ($P < 0.05$) with their post test scores of level of anxiety and other demographic variables have no significant association ($P > 0.05$) with the post test score of level of anxiety in both control and experimental group.

- Hence the differences observed in the mean scores values were only by chance and not true difference. It seems that intraoperative video

therapy was effective to all the patients under spinal anesthesia irrespective of their demographic variables.

Hypothesis 3:

There was no significant association between the post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variables. So the hypothesis was rejected.

CHAPTER - VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter deals with the summary of the study, its findings, conclusion and the implications for nursing administration, nursing practice, nursing education and nursing research. This study has been started with a few limitations and ends with suggestions and recommendations for research in future.

SUMMARY

Intraoperative anxiety is a great concern that has the potential effect on patient's health. Video therapy is one of the most effective diversional therapy which employed by the medical person to overcome psychological stress and anxiety of the patients during medical and surgical procedures. So the investigator studied the statement **"Effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia at Valli hospital, Erode"**

The objectives of the study are,

1) To assess the level of anxiety among patients under spinal anesthesia in control and experimental group before and after intraoperative video therapy.

2) To determine the effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia in control and experimental group.

3) To find out the association between post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variables.

Hypothesis

Researchers formulated and tested the following research hypothesis,

H_1 : There is a significant level in anxiety among patient under spinal anesthesia in control and experimental group before and after intraoperative video therapy

H_2 : There is a significant effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia in experimental than control group.

H_3 : There is a significant association between the post test scores of anxiety among control and experimental group of patients under spinal anesthesia with their demographic variable

The review of literature on related studies helped the investigator to design the methodology, conceptual frame work and find out the tool. The literature reviews for the present study were presented under the following heading.

a) Studies related to video therapy
b) Studies related to anxiety among perioperative patients.
c) Studies related to complementary therapies for intraoperative anxiety
d) Studies related to intraoperative video therapy on anxiety

The conceptual framework set up for the present study was the Sister Callista Roy's adaptation model. The research design adopted for the study was Quasi-experimental design, where Pretest Posttest Nonequivalent Group design. Setting chosen to conduct the study was Valli hospital, Erode.

In this study the population were patients under spinal anesthesia. Out of 30 samples, 15 samples were selected as control group and 15 samples were selected as experimental group by using convenient Sampling technique. Spielberger State Anxiety Inventory (STAI-S) was used to assess the level of anxiety among patients under spinal anesthesia.

The content validity was obtained from experts like surgeon, anesthetist, psychologist, statistician and nurse specialist and the tool was modified according to the suggestions and recommendations of the experts. The reliability was tested by implementing the tool on 4 patients under spinal anesthesia, out of which 2 were experimental group and 2 were control group at Government Head Quarters Hospital, Erode, which is other than the sample area. Split Half method (Spearman Brown Formula) was used to test the reliability of the tool. The tool was found to be reliable, ($r^1 = 0.91$).

The main study was conducted in Valli Hospital, Erode. The samples were selected by using convenient sampling method among those who fulfill the sampling criteria. Intraoperative video was given to the experimental group during the intraoperative period. Data were gathered through Spielberger State Anxiety Inventory (STAI-S). The data gathered are analyzed by descriptive and inferential stastical method and interpretation is made based on the objectives of the study.

Findings

The major findings of the study were presented under the following headings.

Description of sample characteristics

1. Findings related to description of patients under spinal anesthesia according to their demographic variables.
2. Findings related to the level of anxiety among control group and experimental group of patients under spinal anesthesia before and after video therapy
3. Findings related to compare the effectiveness of intraoperative video therapy on anxiety among control and experimental group
4. Findings related to the association between the post test scores of anxiety among control and experimental group of patients under spinal anesthesia with demographic variables.

I. Findings related to description of patients under spinal anesthesia according to their demographic variables.

Frequency and percentage distribution of control and experimental group of patients under spinal anesthesia according to their demographic variables shows that

In control group

1) Most (33% and 33%) of the patients under spinal anesthesia were in the age group of 31-40 years and 41-50 years.
2) Most (60%) of the patients under spinal anesthesia were male.
3) Most (27% and 27%) of the patients under spinal anesthesia were under gone hemorrhoidectomy and fissurectomy.
4) Most (80%) of the patients under spinal anesthesia were completed their surgeries less than an hour.
5) Most (60%) of the patients under spinal anesthesia had no previous history of surgery.
6) Most (47% and 47%) of the patients under spinal anesthesia had no/low trait anxiety and moderate trait anxiety.
7) Most (94%) of the patients under spinal anesthesia were non medical profession.

In experimental group

1) Most (33%) of the patients under spinal anesthesia were in the age group of 51-60years.
2) Most (53%) of the patients under spinal anesthesia were male.
3) Most (27% and 27%) of the patients under spinal anesthesia were under gone fistulectomy and fissurectomy.
4) Most (87%) of the patients under spinal anesthesia were completed their surgeries less than an hour.
5) Most (60%) of the patients under spinal anesthesia had previous history of surgery.
6) Most (53%) of the patients under spinal anesthesia had no/low trait anxiety and moderate trait anxiety.
7) All the patients under spinal anesthesia were non medical profession.

II. Findings related to the level of anxiety among control group and experimental group of patients under spinal anesthesia before and after video therapy

Frequency and percentage distribution of the control and experimental group pre test and post test scores of level of anxiety among patients under spinal anesthesia shows that

- **In control group,**
  - In pre test majority (47% and 47%) of patients had no/low anxiety and moderate anxiety.
  - In post test majority (67%) of patients had no/low anxiety,
- **In experimental group,**
  - In pre test 53% of patients had no/low anxiety.
  - In post test most of them (87%) had no/low anxiety.

III. Findings related to compare the effectiveness of intraoperative video therapy on anxiety among control and experimental group

The effectiveness of intraoperative video therapy was tested by using mean, standard deviation, mean percentage, paired 't' test and unpaired 't' test. The findings shows that

- **In control group**
  - Paired't' test value was 6.83, ($P < 0.05$, significant)
  - Pre test mean score was 36.33 ± 8.96, which is 45.41%
  - Post test mean score was 34.33 ± 8.06, which is 42.91%,
  - Mean difference was 2.5%
- **In experimental group**.
  - Paired't' test value was 10.43, ($P < 0.05$, significant)
  - Pre test mean score was 35.67± 7.78, which is 44.59%

- ♦ Post test mean score was 28.07 ± 5.54, which is 35.09%,
- ♦ Mean difference was 9.50%

❖ The unpaired 't' test value was 2.42, ($P < 0.05$, significant)

IV. Findings related to the association between the post test scores of anxiety among control and experimental group of patients under spinal anesthesia with demographic variables.

Chi-square was calculated to analyze the association between demographic variables with the control and experimental groups post test scores on anxiety among patients under spinal anesthesia. The results shows that,

In control group

1) Chi square value for the age in year was 0.51 ($p > 0.05$).
2) Chi square value for gender was 0.51 ($p > 0.05$).
3) Chi square value for the name of surgeries was 2.62 ($p > 0.05$).
4) Chi square value for the duration of surgery was 1.36 ($p > 0.05$).
5) Chi square value for the previous history was 0.51 ($p > 0.05$).
6) Chi square value for the trait anxiety (STAI-T) was 6.03 ($p < 0.05$).
7) Chi square value for the occupation was 0.46 ($p > 0.05$).

In experimental group

1) Chi square value for the age in year was 0.00 ($p > 0.05$).
2) Chi square value for gender was 3.50 ($p > 0.05$).
3) Chi square value for the name of surgeries was 1.09 ($p > 0.05$).
4) Chi square value for the duration of surgery was 4.29 ($p < 0.05$).
5) Chi square value for the previous history was 0.00 ($p > 0.05$).
6) Chi square value for the trait anxiety (STAI-T) was 8.80 ($p < 0.05$).
7) Chi square value for the occupation was 0.00 ($p > 0.05$).

CONCLUSION

From the findings of the study it can be concluded that,

- Most of the patients under spinal anesthesia were males and most of their surgeries had finished less than an hour.
- In control group most of them were in the age group of 21-30 years and 41-50 years, most of them underwent surgeries of hemorrhoidectomy and fissurectomy, most of them didn't have previous history of surgery and most of them had no/ low and moderate trait anxiety.
- In experimental group most of them were in the age group of 51-60 years, most of them underwent surgeries of fistulectomy and fissurectomy, most of them had previous history of surgery, most of them had no/ low trait anxiety.
- There was a significant effectiveness of Intraoperative video therapy on anxiety among patients under spinal anesthesia.

- There was a significant association between the post test scores of anxiety when compared with trait anxiety
- There was a significant association between the post test scores of anxiety when compared with duration of surgery in control group
- There was no significant association between post test scores of anxiety when compared with age, gender, name of surgeries, previous history of surgery and occupation.
- There was no significant association between post test scores of anxiety when compared with duration of surgery in experimental group.

IMPLICATIONS FOR NURSING

The findings of the study have implication in Nursing service, Nursing administration and Nursing research.

Nursing service

- Video therapy can be used by the Nursing professionals who are working in all hospital and clinical settings while doing various medical and surgical procedures.
- Nursing professionals can use video therapy as a non pharmacological intervention in case of various situation like pain, anxiety, depression, anger, frustration, etc.,

Nursing Education

- Nurse educator should educate the students regarding video therapy and its implementation.
- Nurse educator should encourage the Nursing personnel to practice the video therapy in their clinical settings.
- Nurse educator should educate the Nursing personnel regarding the causes of perioperative anxiety and alternative therapies to overcome anxiety.

Nursing Administration

- **N**urse administer can review the policies to include video therapy as a protocol for non pharmacological intervention for perioperative anxiety.
- Nurse administer can support the researcher to conduct the research on various problems faced by the perioperative patients.

Nursing Research

- The study may be issued for further reference.
- Further large scale study can be done in different settings

RECOMMENDATIONS

Based on the findings of the study the following recommendations have been made for further study.

- A study can be conducted with large samples to generalize the findings.
- A similar study can be conducted in various regional anesthesia patients like epidural anesthesia, plexus block and single nerve block.
- A similar study can be conducted on various physiological problems among intraoperative patients like increased heart rate and blood pressure, physical discomfort and pain.
- A similar study can be conducted on various psychological problems among intraoperative patients like anxiety, depression, post traumatic stress symptoms and cognitive impairment
- A comparative study can be conducted to compare the effectiveness of various complementary therapies like music, hypnosis, acupressure, guided imagery, massage therapy, hand holding and video therapy on intraoperative anxiety among patients under local/regional anesthesia
- A comparative study can be conducted to assess the effectiveness of video therapy among children vs adult patients under local/regional anethesia.
- A comparative study can conducted to assess the effectiveness of intraoperative video therapy among various types of regional anesthesia

like spinal anesthesia, epidural anesthesia, plexus block and single nerve block.

SUMMARY

This chapter dealt with the summary of the study, major findings, conclusions, implication of the study in Nursing field and recommendations for future.

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APPENDIX I

LETTER SEEKING PERMISSION TO CONDUCT STUDY

From

Mr.Saravanagenesh.M,

M.Sc (Nursing) II year, Dhanvantri college of nursing,

Ganapathypurum, No: 1 Renganoor Road,

Munniyappan kovil, Pallakkapalayam, (PO),

Sankagiri west, Namakkal (DT).

To

The principal,

Dhanvantri College of Nursing,

Ganapathypurum, No: 1 Renganoor Road,

Munniyappan kovil, Pallakkapalayam, (PO),

Sankagiri west, Namakkal (DT).

Respected Sir/Madam,

Sub : Permission to conduct study - Regarding

I, Mr.Saravanagenesh.M, M.Sc (Medical Surgical Nursing) II year student of Dhanvantri College of Nursing, Pallakkapalayam as a partial fulfillment of master of science in nursing, I am going to conduct a research and submit the desertion work to the Tamil Nadu Dr M.G.R Medical University, Chennai by December 2011.

The statement of the problem chosen for my study is **"Effectiveness of intra operative video therapy on anxiety among patients under spinal anesthesia at Valli hospital, Erode".**

I request you to permit me to conduct the study. Kindly do the needful.

Thanking you,

Yours Faithfully,

Date: 11.08.11

Place: pallakkapalayam.

APPENDIX II

LETTER GRANTING PERMISSION TO CONDUCT STUDY

From

The principal,

Dhanvantri College of Nursing, Ganapathypurum,

No: 1 Ranganoor Road, Munniyappan kovil,

Pallakkapalayam, (PO), Sankagiri west, Namakkal (DT).

To

Respected Sir/Madam,

Sub: M.Sc., (Nursing) student – research – data collection – regarding.

Mr.Saravanagenesh.M, II year M.Sc.N, student of Dhanvantri College of Nursing, Pallakkapalayam as a partial fulfillment of master of science in nursing, he is to conduct a research and submit the desertion work to the Tamil Nadu Dr M.G.R Medical University, Chennai by December 2011.

The statement of the problem chosen for his study is **"Effectiveness of intra operative video therapy on anxiety among patients under spinal anesthesia at Valli hospital, Erode".**

He is in need for your help and cooperation to conduct this research study among patients under spinal anesthesia in your esteemed hospital.

I request you to permit him to collect the data from your hospital and allow my student to utilize the needed facilities.

I assure you that his study will not in anyway affect the routine work of your hospital nor would it harm the study subjected for intra operative video therapy.

Kindly do the needful.

Thanking you,

Date: 11.08.11 Your's sincerely,

Place: Pallakkapalayam

APPENDIX III

LETTER SEEKING EXPERT OPINION ON CONTENT VALIDITY

From

Mr.Saravanagenesh.M

II year M.Sc (Nursing),

Dhanvantri College of Nursing,

Ganapathypuram, No: 1, Ranganoor road,

Muniyappan Kovil, Pallakkapalayam, (PO), Namakkal (D.T).

To

…….

…….

Through

The Principal

Dhanvantri College of Nursing,

Ganapathypuram, No: 1, Ranganoor road,

Muniyappan Kovil, Pallakkapalayam, (PO), Namakkal (D.T).

Respected Sir/ Madam

Sub: Request for Validation of the Tool

I , Mr.Saravanagenesh.M, II year M.Sc Nursing student of Dhanvantri College of Nursing, Pallakkapalayam as a partial fulfillment of Master of Science in Nursing, I have undertaken following research for my dissertation, which has to be submitted to the Tamilnadu Dr.M.G.R. Medical University, Chennai by December 2011.

The statement of problem chosen for my study is **"Effectiveness of intra operative video therapy on anxiety among patients under spinal anesthesia at Valli hospital, Erode".**

To achieve the objectives of the dissertation, I have prepared the following tools:

1. Demographic data
2. Spielberger State Anxiety Inventory (STAI-S)

With regard to this, I kindly request you to go through the tools of intra operative video therapy on anxiety, validate it against the given criteria and render your valuable suggestions.

Thanking You

Enclosures Yours faithfully,

1. Chapter 1 and 3

2. Demographic data

3. Spielberger State Anxiety Inventory (STAI-S)

APPENDIX IV

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of Mr.Saravanagenesh.M, II year M.Sc. Nursing student of Dhanvantri College of Nursing, Erode, who is undertaking the dissertation work on **"Effectiveness of intraoperative video therapy on anxiety among patients under spinal anesthesia at Valli hospital, Erode".**

Place: Signature of the Expert

Date: Name and Designation

APPENDIX-V

DEVELOPMENTAL OF TOOL

INFORMED CONSENT

Vanakkam, I am Mr.Saravanaganesh, M. M.Sc (N) II year student, studying in Dhanvantri College of Nursing, as my part our curriculum, I need to do the dissertation. From this study you will not get any harm. Whatever information collected that should be in confidential. So I request you to kindly co – operate.

This study having two sections,

Section A

It consists of Demographic variables.

Section B

Spielberger State Anxiety Inventory (STAI-S)

SECTION: A

DEMOGRAPHIC PROFILE OF THE PATIENTS

1) Age in yrs

   a) 21-30 ( )

   b) 31-40 ( )

   c) 41-50 ( )

   d) 51-60 ( )

2) Gender

   a) Male ( )

   b) Female ( )

3) Name of surgery

   a) Fistulectomy ( )

   b) Hemorrhoidectomy ( )

   c) Hernia repair ( )

   d) Appendicectomy ( )

   e) Fissuerectomy ( )

4) Duration of surgery

a) Less than 1 hour ( )

b) 1-2 hour ( )

c) More than 2 hour ( )

5) Previous history of surgery

a) Yes ( )

b) No ( )

6) Trait anxiety (STAI-T)

a) No/ Low anxiety (20-37) ( )

b) Moderate (38-44) ( )

c) High anxiety (45-80) ( )

7) Occupation

a) Medical ( )

b) Non medical ( )

SECTION: B

SPIELBERGER STATE ANXIETY INVENTORY (STAI-S)

Instruction to the respondent:

Dear participants, we request you to read each statement and select the appropriate response to indicate how you feel right now, that is, at this very moment. There is no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

S. No	Statement	Not at all (1)	A little (2)	Somewhat (3)	Very much so (4)
1.	I feel calm				
2.	I feel secure				
3.	I feel tense				
4.	I feel strained				
5.	I feel at ease				
6.	I feel upset				
7.	I am presently worrying over possible misfortunes				
8.	I feel satisfied				
9.	I feel frightened				
10.	I feel uncomfortable				
11.	I feel self confident				
12.	I feel nervous				
13.	I feel jittery				

14.	I feel indecisive				
15.	I am relaxed				
16.	I feel content				
17.	I am worried				
18.	I feel confused				
19.	I feel steady				
20.	I feel pleasant				

DESCRIPTION OF TOOL:

Spielberger State Anxiety Inventory (STAI-S) consists of 20 self reporting statements, and the answers to these are used to determine a patient's current anxiety level. Each statement in the STAI-S is rated on a four-point scale (not at all-1, a little-2, somewhat-3 and very much so-4). STAI-S consists of 9 positive statements and 11 negative statements.

- Positive statements are 1, 2, 5, 8, 11, 15, 16, 19, 20
- Negative statements are 3,4,6,7,9,10,12,13,14,17,18

For the purpose of scoring and interpretation positive statements are reverse-scored (ie., a 4 scores 1 point and a 1 scores 4 point etc.,). The overall (total) score for STAI ranges from a minimum of 20 to a maximum of 80; STAI scores are commonly classified as 'no or low anxiety' (20–37), 'moderate anxiety' (38–44), and 'high anxiety' (45–80).

APPENDIX-VI

TAMIL TRANSLATION OF TOOLS

¾¸Åø ´ôÒ¾ø

Å½ì¸õ ±ÉÐ ¦ÀÂ÷ Á.°ÃÅ½¸§½‰. ¿¡ý ¾ýÅó¾¢¡¢ ¦°Å¢Ä¢Â÷ ¸øæ¡¢Â¢ø ¦°Å¢Ä¢Â÷ ÓÐ¿¢¨Ä Àð¼ôÀÊôÒ þÃñ¼¡õ ¬ñÎ ÀÊòÐ ÅÕ¸¢§ÈÝ. ±í¸ÇÐ À¡¼ò¾¢ð¼¾¢ý ÀÊ, ¿¡í¸û ´Õ ¬Ã¡öî°¢ ¦°öÐ Å¢Çì¸×¨Ã, Àø¸¨Ä¸Æ¸¾¢üÌ °Á÷À¢ì¸ §ÅñÎõ. þó¾ ¬Ã¡öî°¢É¡ø ¯í¸ÙìÌ ±ó¾ ´Õ Àì¸ Å¢¨Ç×¸Ùõ ²üÀ¼¡Ð. ¯í¸Ç¢ý À¾¢ø¸û þÃ¸°¢ÂÁ¡¸ ¨Åì¸ôÀÎõ. «¾É¡ø ±ÉÐ ¬Ã¡öî°¢ìÌ ´òÐ¨ÆôÒ ¦¸¡ÎìÌÁ¡Ú À½¢×¼ý §¸ðÎì¦¸¡û¸¢§ÈÝ.

þ¾¢ø þÃñÎ À¢¡¢×¸û ¯ûÇÉ.

À¢¡¢×-«

Demographic variables.

À¢¡¢×-¬

Spielberger State Anxiety Inventory (STAI-S)

À¢¡¢×-«

DEMOGRAPHIC PROFILE OF THE PATIENTS

1) §¿¡Â¡Ç¢Â¢ý ÅÂÐ ¬ñÎ¸Ç¢ø

«) 21-30 ( )

¬) 31-40 ( )

þ) 41-50 ( )

®) 51-60 ( )

2) þÉõ

«) ¬ñ ( )

¬) ¦Àñ ( )

3) «Ú¨Å °¢¸¢î¨°Â¢ý ¦ÀÂ÷

«) Fistulectomy ( )

¬) Hemorrhoidectomy ( )

þ) Hernia repair ( )

®) Appendicectomy ( )

¯) Fissurectomy ( )

4) «Ú¨Å °¢¸¢î¨°Â¢ý ¸¡Ä «Ç×

«) ´Õ Á½¢ §¿Ãò¾¢üÌõ Ì¨È× ( )

¬) 1-2 Á½¢ §¿Ãò¾¢ø ( )

þ) 2 Á½¢ §¿Ãò¾¢üÌõ «¾¢¸Á¡¸ ( )

5) Óó¨¾Â «Ú¨Å °¢¸¢î¨°Â¢ý ÅÃÄ¡Ú

«) ¬õ ( )

¬) þø¨Ä ( )

6) trait anxiety

«) No/ Low anxiety (20-37) ( )

¬) Moderate (38-44) ( )

þ) High anxiety (45-80) ( )

7) ¦¾¡Æ¢ø

«) ÁÕòÐÅõ ( )

¬) ÁÕòÐÅõ °¡Ã¡ ( )

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SPIELBERGER STATE ANXIETY INVENTORY (STAI-S)

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APPENDIX – VII

BLUE PRINT OF VIDEO THERAPY

INTRODUCTION

Anxiety is an unpleasant and uncomfortable experience, which is experienced by the surgical patients during the perioperative period. Different methods have been employed to alleviate fear and anxiety during the perioperative period. Some of these methods include a warm and friendly environment, appropriate information, pharmacological method and complementary therapies like music therapy and guided imagery. Among these video therapy is one of the most effective diversional therapy.

DEFINITION OF VIDEO THERAPY

Video therapy can be defined as delivering video to the patients undergoing various surgical, medical and diagnostic procedures according to his/her interests. This therapy can distract, amuse, hypnotizes, stimulate or sedate patients undergoing boring, painful, stressful, uncomfortable, frightening, claustrophobic or emotionally difficult procedures. It is otherwise called as electronic anesthesia.

BENEFITS OF VIDEO THERAPY

Video therapy,

- Acts as a active diversional therapy for various psychological problems
- Reduces the level of fear and anxiety
- Reduces the level of pain
- Avoids the claustrophobia
- Prevents unpleasant auditory and visual stimuli
- Provides pleasant environment
- Enhances the patients and medical team comfort
- Stabilizes the vital parameters like BP and HR

EQUIPMENT NEEDED

- Portable DVD player
- Head set
- DVD stand
- Video CDs
- Video library card
- Assessment tool (STAI-S)

IMPLEMENTATION OF VIDEO THERAPY

- Explain the study purpose and their part in this study
- Get the consent to participate to the study
- Pre test is undertaken with the use of STAI- S
- Patients are asked to select the videos according to his/her preference from the video library card, which comprises of various categories like
    a) comedy films
    b) video songs
    c) cartoon films and
    d) religious songs.
- Video therapy is delivered to the experimental group by the DVD player with the head phone, after the patients under spinal anesthesia are stabled in the surgical table during intra operative period. Patients are isolated from the surgical team by the privacy screen.
- Post test is taken immediately on admission to the recovery room after the surgery with the STAI-S

APPENDIX – VIII

LIST OF EXPERTS

- **PROF.S. MARAGATHAM**, **M.Phil**

  Principal

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- **Mrs. VIJAYARANI PRINCE, M Phil**

  Principal, Bishop's College Of Nursing,

  C.S.I. Mission Compound,

  Dharapuram-638656, Tirupur District

- **Mrs. S. LAKSHMI PRABHA**,

  Asso.Professor

  Vinayaka Mission Annapoorna College of Nursing, Salem.

- **Dr. T.K. SWAMY, M.S., M.Ch., (GASTRO)**

  Valli Hospital

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- **Dr. N.GANAPATHY, M.B.B.S., D.A., M.D., F.C.C.P., D.C.C.M.,**

  Critical care physician,

  Dhanvanthri Critical Care Center, Erode.

- **Mr.DHANAPAL,**

  Statistician,

  Dhanvantri College of Nursing, Pallakkapalayam, Namakkal.

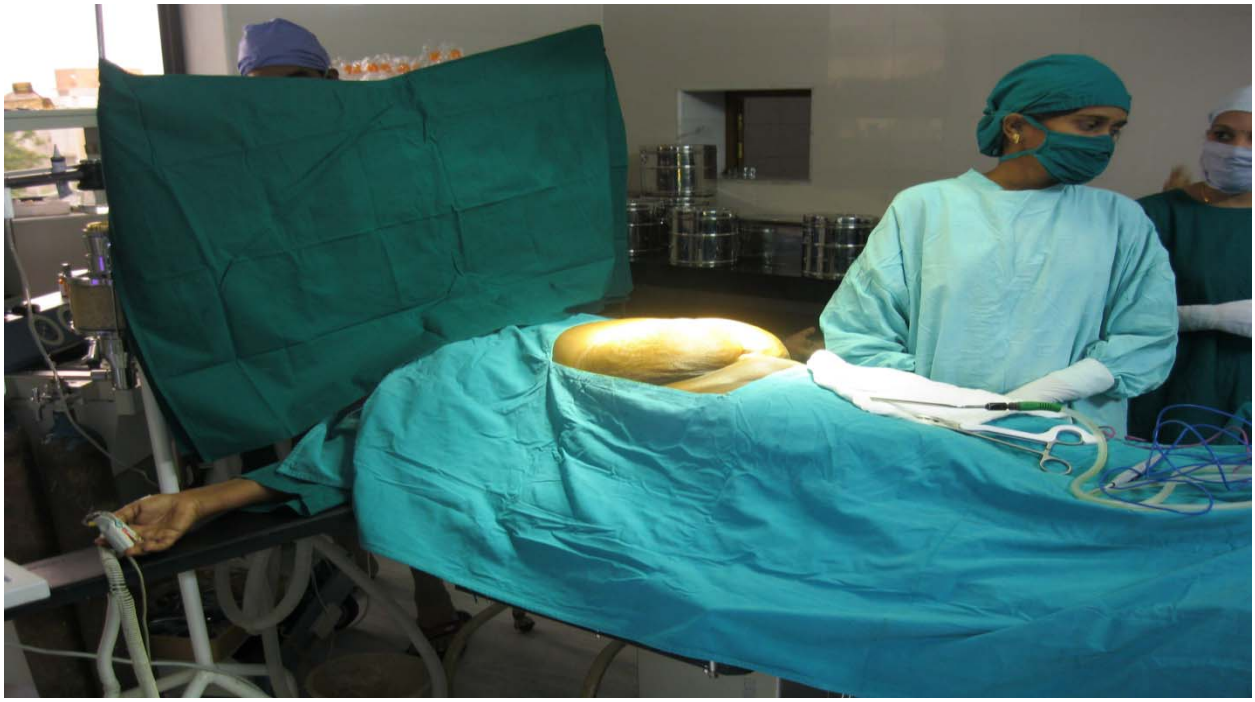
- **MR.N. SENTHILKUMAR, M.A., (PSYCHOLOGY),**

  Clinical psychologist, DMHP, Erode.

APPENDIX – IX

PHOTOGRAPHS

Patients watching video during the intraoperative period



Patients was isolated by privacy screen

Video therapy was given by the researcher