CHAPTER-I
INTRODUCTION

Health is an evolving life experience. Having a healthy heart is believed to be an inseparable part in the quality and the length of our life. The heart is incredibly versatile and is equipped for a relentless workload yet with the risk for ailment and failure as the individual does not pay the attention that the heart deserves.

The cardiac muscle receives nourishment and oxygen supply through three main coronary arteries and its branches. At some point, these coronary arteries can get obstructed by stores of fat and cholesterol known as plaque. Over time, plaque deposits can narrow the vessels which lead to confined blood flow to the heart muscle, which is known as coronary artery disease (CAD) (Braunwald, Zioes, & Libby, 2001).

CAD is the leading cause of death worldwide with a rising incidence in both the developed and developing countries (Lee, G. & Carrington, 2007). An estimated 17.3 million people died from cardiovascular diseases in 2008 representing 30% of all global deaths. Of these deaths, 7.3 million were due to CAD and this disease is estimated to be responsible for a total of 11.1 million deaths globally in the year 2020 (WHO, 2011). The age standardized death rates per 1, 00,000 due to CAD in various countries are as follows: U.K-68.8, Japan-31.6, USA-40.4, Russia-296.7, China-79.7, France-29.2, Australia -60.3 and India-165.8 (WHO, 2011).
In the United Kingdom (UK) during the year 2008, CAD related deaths accounted for a total of 88,000 (15% of total deaths), of which one fifth were male and one eighth were female (British Heart Foundation [BHF], 2010). Similarly in the United States (US) during the year 2005, CAD related deaths accounted for a total of 4,45, 687 (18% of total deaths) (Jones, & Adams, 2009). In Australia during the year 2006, CAD related deaths accounted for a total of 22,983 deaths (17% of all deaths) (Australian Institute of Health and Welfare [AIHW], 2010).

CAD mortality in India in the year 2010 was 2.3 million and it is estimated to increase to 2.9 million (32%) in the year 2015. The CAD morbidity among Indians in the year 2010 was 46.96 million and among them 24.68 million were urban population, 22.28 million were rural population and the same is estimated to increase to 61.8 million (26%) in the year 2015 (National Health Profile [NHP], 2010).

The disability adjusted life years [DALYs], lost related to CAD in India is predicted to increase from 7.67 million to 14.4 million in men and 5.6 million to 7.7 million in women from 2000 to 2020 (WHO, 2009). Enhanced healthcare services in India has increased the average life expectancy from 48.8 years in 1970 to 64.1 years in 2009 resulting in a growing aging population which confronted an increased risk of heart diseases (Ramachandran, Ma, & Snehalatha, 2010).
In a study from South Indian city of Chennai, it is reported that the prevalence of CAD was 11% which is similar to North India (Mohan, Deepa, Rani, & Premalatha, 2001).

Coronary artery bypass graft [CABG] surgery is an effective and established standard intervention to combat the consequences of CAD. During CABG, a healthy artery or vein from the body is connected or grafted to the blocked coronary artery. The grafted artery or vein bypasses the blocked portion of the coronary artery. This creates a new path for oxygen-rich blood to flow to the heart muscle. The indications of CABG are the block in left main stem or when multiple blocks in strategic locations of coronary artery (Black, 2009). The evidence-based benefits of CABG surgery include symptom relief, improved quality of life and prolonged survival (Mooney, 2007).

In spite of the positive somatic effects, it is quite unpleasant for anyone undergoing surgery. It becomes even more stressful when the heart, a vital organ is involved. The CABG surgery exerts physical, social and psychological adaptive challenges during preoperative period that continue well after discharge (Chunta, 2010). A significant amount of anxiety is experienced by the patient both during preoperative and postoperative period.
Anxiety is an unpleasant emotional response that one feels generally, in the long term (trait anxiety), or in a specific situation that fluctuates over time (state anxiety) (Spielberger, 1967). Anxiety is associated with physiological mechanisms as it alters the hypothalamic pituitary-adrenal axis and the autonomic nervous system (elevated sympathetic and/or reduced parasympathetic nervous system activities) that results in increased production of catecholamines (Chida, & Hamer, 2008).

The increased production of catecholamines shows exaggerated somatic manifestations such as increased myocardial oxygen demand, elevations in heart rate, blood pressure and the rate of ventricular contraction (Peterson, 2002). These responses would further pose detrimental effects and threats on the coronary circulation of patients with CAD (Roest, Martens, De Jonge, & Denollet, 2010).

Preoperative anxiety occurs from the moment CABG surgery is scheduled till the induction of anesthesia in the operating suite (Myers, 2006). The prevalence of preoperative anxiety in patients prepared for CABG surgery has been reported as 76% (Millan, Serrano, & Aguirre, 2010).

Patients with cardiac diseases undergoing different cardiac procedures were found to have suffered from different levels of anxiety (Carneiro, Mathias, Rassi, Morais, Gozzani, & Miranda, 2009). For example, the mean
scores of preoperative state anxiety and trait anxiety were in moderate category, but the total mean score of state and trait anxiety was in the severe category among patients subjected to heart surgery (Fathi, Alavi, Joud, Mitra, & Mahdikhani, 2014), 34.0% and 24.7% of the patients were clinically anxious before and after CABG surgery respectively (Krannich, Weyers, Lueger, Schimmer, Faller, & Elert, 2008).

In a study by Rymaszewska, Kiejna, & Hadrys (2003), identified that anxiety may be seen significantly at all postoperative time-points among patients subjected to CABG surgery. It was reported 55%, 34% and 32% of patients had high level of anxiety preoperatively, on the day of discharge and 3 months after CABG surgery respectively.

In 2006, the study by Chaudhury, Sharma, Pawar, Kumar, Srivastava, & Sudarsanan, showed significant incidence of anxiety among patients before and after CABG surgery. The results highlighted 43.33% of the patients had moderate preoperative anxiety and 36.67% of patients had severe anxiety even after successful CABG. In addition, it is known, 38.7% and 38.6% of patients had moderate levels of anxiety before surgery and 2 weeks after discharge respectively Gallagher & Mckinle (2007).
Many factors contribute to a patient’s preoperative state anxiety level such as loss of control, fear of postoperative pain, alteration in body image (Stirling, Raab, Alder & Robertson, 2007), unfamiliar situations, physical separation from family, no or little knowledge about medical interventions, diagnosis, or therapeutic methods, high costs of operation, hospitalization, anesthesia induction, possible future disabilities and death (Nijkamp, Kenens, Dijker, Ruiter, Hiddema, & Nuijts, 2004), health deterioration and myocardial infarction after CABG surgery (Shahmansouri, Koivula, Ahmadi, Arjmandi, & Karim, 2012).

In 2006, Vargas, Maia, & Dantas’s, study explicated that, lack of knowledge about the surgical process and post operative home management scenarios may further escalate anxiety.

The aforementioned factors may have cumulative effect during the recovery period after the discharge from the hospital. The common psycho social reactions associated with CABG surgery were, difficulty in sleeping, particularly in the initial postoperative period (Schaefer, & Swavery, 2007), injury to self-esteem, feelings of powerlessness, helplessness to face adaptive challenges of the illness, actual or anticipated losses of independence, financial security, or social support systems (Starkweather, Janusek, Nockels, Peterson, & Mathews, 2006), high levels of marital conflict, dissatisfaction, and discord during the first six months following surgery (Elliott, Lazarus, & Leeder, 2007), fears about resumption of sexual activity (Lukkarinen, & Lukkarinen, 2007).
In 2008, Tully, Baker, & Knight’s study explained, the postoperative disabling consequences that may occur due to preoperative anxiety are pain, slower wound healing, increased risk of infection, prolonged postoperative recovery, longer hospitalization, poor response to analgesic medication and increased postoperative analgesics use. All of these result in higher treatment costs.

It is well documented, patients experiencing level of preoperative anxiety were more likely to report decrements in several domains of Quality of life (QOL) after their operation (Todaro, Shen, Raffa, Tilkemeier, & Niaura (2007).

Heng-Hsin, Anita & Jen, (2008) revealed, better postoperative quality of life was associated with lower preoperative anxiety level. Douki et al.(2011) examined the negative correlations between preoperative mental health and preoperative state anxiety, postoperative physical functioning and postoperative state anxiety. Tung, Hunter, & Wei (2007) also determined that the postoperative anxiety was negatively correlated to physical dimension and mental dimension of QoL.

The study evidences showed, 7% to 35% of patients do not resume former levels of physical activity. This failure could be attributed to psychological influences rather than to the physical status (Chaudhury et al., 2006).
Postoperative anxiety may decline the resumption of physical activities such as lifting, climbing, bending, walking, bathing and social functioning for approximately 12 months during the postoperative period (Hunt, Hendrata & Myles, 2000). Anxiety can affect the self confidence and the ability to perform the normal routines that result in the patient adopting a sedentary lifestyle, sometimes, forever. This leads to an imbalance between one’s ideal and actual self. As a result quality of life could decline (Sendelbach, Halm, Doran, Miller, & Gaillard, 2006).

It has been acknowledged that the operative success of cardiac surgery is limited unless the patient attains the psycho dynamic equilibrium, gains adequate knowledge on lifestyle modification and adheres to the prescribed activities, diet, exercise and medical regimen after surgery. In this way, Chaudhury et al.(2006) believed decline in anxiety may reflect relief from having completed a strenuous operative procedure, lessening of symptoms and using problem-focused coping strategies greatly, therefore, the patients return to normal life rapidly.

Addressing patients’ psychological concerns towards surgery and designing and conducting an appropriate preoperative intervention teaching plan to support patients is the primary goal of the health care professionals. Allaying anxiety level especially before surgery is crucial because patients who are anxious before surgery are more likely to continue to be anxious throughout their recovery.
Preoperative intervention will improve the physical and psychological well-being and add to the QOL during the postoperative period (Duits et al., 2006). Patient education is a fundamental aspect for empowering patients with knowledge about CABG surgery (Urden, Stacy, & Lough, 2006).

It is hypothesized that the patient will be less anxious, have a shorter hospital stay, be able to cope with postoperative scenarios because of the complete understanding of the pre operative and postoperative routines (Bailey, 2010). Therefore it is imperative on the health professionals to help patients to achieve behavior specific changes through health promotion. To accomplish the goal of health promotion the comprehensive strategies should focus on patient education, relaxation exercise and support mechanisms that would empower the patient to make healthy lifestyle choices and enable them to be better self-managers.

Evidences revealed that the preoperative education on lifestyle modification along with relaxation therapy improved psychological outcomes and the quality of life in the postoperative period among CABG surgery patients (Taherah, Alireza, Ali, Saeid, Fazalolah, & Soraya, 2007), nurse-initiated preoperative education and counseling had reduced rate of post operative complications such as lower extremity edema, urinary retention, constipation, respiratory infection, deep venous thrombosis and reduced the level of anxiety in the study group following CABG (Zhang, Jiang, Yin, Chen, Ma, & Wang, 2012).
Lifestyle-change intervention modified the cardiac risk factors such as amount of cigarette smoking, blood pressure control, frequency of physical activity and dietary behavior among patients in the experimental group (Hsin-Hsin Lin, Sai, & Lin, 2010)

A comprehensive health education programme for cardiac surgery patients sets the stage for preventing post-operative complications (Havrilak, 2005). Investing the time to detail the patients’ pre-operative health education will assist in eliminating the process gaps which can interfere with the patient’s post-operative care. Seyam, Heidarnia, & Tavafian (2011) believed that the patients should be enabled to engage in self-care activities, a new trend in health care, which includes participation and taking responsibility for their own healthy lifestyle changes that reduce cardiac risk factors and improves the quality of life after CABG surgery.

For this reason, the researcher decided to identify the state anxiety, quality of life and functional status during preoperative period. Also, focused on the implementation of the comprehensive nursing strategies to improve the knowledge regarding life style modification and skill in performing relaxation exercises so as to reduce anxiety, improve the quality of life and functional status.
1.1 NEED FOR THE STUDY

Coronary artery bypass grafting [CABG] is a surgical procedure performed to restore blood flow to the heart which relieves angina, increases the life expectancy, improves the quality of life and lowers the risk of coronary artery disease CAD (Eisenberg, Filion, Azoulay, Brox, Haider, & Pilot, 2005).

CABG becomes the choice of treatment for patients with >50% stenosis in the left main coronary artery [LMCA] (Taggart, 2005), disease of all three coronary arteries- Left anterior descending artery, Left circumflex artery and Right coronary artery [LAD, LCX and RCA] or diffuse disease that cannot be treated with percutaneous intervention [PCI]. Later, CABG was also preferred for high risk patients such as with severe ventricular dysfunction or diabetes mellitus (Eagle, Guyton, & Davidoff, 2004). Based on aforesaid indications, single bypass /double (two coronary artery) bypass/triple (three vessels) bypass/quadruple bypass/ quintuple (means five vessels) bypass are performed (Ohki, Kaneko, & Satoh, 2002).

The number of CABG procedures performed per year globally are as follows: United Kingdom 16,408 (National Institute for Cardiovascular Outcomes Research, 2011), United States 3,95,000 (National hospital discharge survey, [NHDS] 2010).
In South East Asia especially India, better medical facilities have come up. Coronary interventions and cardiac surgeries are being performed in nearly all major Indian cities, especially the metros. It is estimated that 60,000 CABG surgeries are performed annually in India, which represent about one-third of the total surgeries performed globally (Kaul, & Bhatia, 2010).

SRMC is one of the renowned metro centers treating the entire spectrum of cardio thoracic and vascular problems in India. The cardio thoracic surgical programme in SRMC is a well established centre with more than 11,000 open heart surgeries to its credit. The mission of the cardio thoracic vascular surgical unit in SRMC is to provide world class cardiac surgical services with compassion and care at an affordable cost. About 492 and 364 CABG surgeries were performed during 2012 and 2013 respectively at Cardio Thoracic Vascular Surgical unit of SRMC (MRD, 2013).

Anticipation of CABG surgical intervention triggers specific emotional and physiological responses of a patient from the moment it is planned. Although preoperative anxiety is considered to be a normal part of the surgical experience, it is a pervasive problem that worsens several domains of quality of life (QoL) in the post operative period (Rymaszewska et al., 2003). Therefore it should be considered as an essential protocol by the health care providers to focus on preoperative physical and psychological preparation to prevent post-operative complications (Kagan, & Bar-Tal, 2008).
The comprehensive health promotion is an essential goal of modern nursing. The modified health promotion model [HPM] by Nola Pender (1996) which has been used in this study, focuses on helping people to achieve higher levels of well-being. Preoperative education is increasingly being viewed as an important health promotion intervention that helps the patient to return to pre-morbid life style which assists the individual in acquiring health practices thereby paving the way for healthy life and general good health.

Evidences suggest that quality preoperative health education can shorten the length of the hospital stay and promote changes in behavior that will optimize self-care management skills (Kruzik, 2009); pre-operative teaching increases patient satisfaction and can lead to a decrease in post-operative fear, anxiety and stress (Lewis, Heitkemper, Dirksen, O’Brien, & Bucher, 2007).

The preoperative information regarding postoperative recovery and/or surgical procedure details leads to significant reduction of self reported anxiety (Ng, Chau, & Leung, 2004). The preoperative education and emotional support can minimize physical, psychological and social factors that have an impact on the patient, prepare the patient for surgery and enable speedy postoperative recovery (Direk, Şenol, & Çelik, 2012).
Evidences showed, 78% of surgical patients had reported the effectiveness of preoperative teaching in anxiety reduction (Chetty, & Ehlers, 2009). Nurse-led preoperative intervention showed improvement on the physical composite summary score on quality of life among CABG patients (Mc Hugh Lindsay, Hanlon, Hutton, Brown, & Wheatley, 2007). Symptom management intervention had significantly lowered the fatigue scores at six weeks and increased the levels of physical activity as measured by the activity diary at three months after CABG (Zimmerman, Barnason, Schulz, Nieveen, & Miller, 2007).

Preoperative information was ranked; the details of surgery was ranked first, details of nursing care was ranked second, details of anesthesia was ranked third while details of operation theatre environment was ranked the lowest (Mc Intosh, & Adams, 2011). The information about chest and leg wound care, medication information, other pertinent information and complications were indicated to be the most valuable information by CABG patients prior to discharge (Alkubati, Khater, & Ammouri, 2013).

Health education program that included the nursing activities such as giving information, anticipating patient’s problems, encouraging patient activities, responsibility for self care and coping improved the quality of life of patients in the experimental group following CABG surgery (Babaee, Keshavarz, Hidarnia, & Shayegan, 2007).
Preoperative intervention which included education, reinforcement and monthly nurse-initiated telephone calls improved the positive postoperative outcomes in low-risk patients awaiting elective CABG surgery (Arthur, Daniels, McKelvie, Hirsh, & Rush, 2006).

A structured education may help the patients to return to functional activities during CABG recovery (Wintz, Kinney, & Pier, 2007). An educational intervention had lowered the levels of anxiety among the patients in the intervention group (Sorlie, Busund, Sexton, Sexton, & Sørlie, 2007).

Finding a simple and easy way to decrease anxiety of patients can help patients to recover soon and thereby decrease the postoperative expenses. Anxiety reduction is essential for the successful postoperative outcome of CABG. Shuldham, Fleming, & Goodman (2001) suggested that the level of anxiety of the patient must be taken into account in order to develop and design preoperative instructions, including psychological component.

Over the last two decades, mind-body interventions in the form of the natural act of breathing have been used as a means of relaxation which is intuitively being incorporated in many relaxation programs. Mind-body therapy establishes a strong connection between thoughts, feelings and emotions and their impact on neurological and immune system.
Innes & Vincent (2007) stated the positive physiological response of the relaxation. It stimulates the para sympathetic system thereby producing a beta blockade, which leads to the relaxation of the musculoskeletal system and cardio respiratory system that results in the reduction of state anxiety, pulse rate and improvement in oxygen saturation.

Halpin, Speir, Bianco, & Barnett (2002) stated that the abdominal breathing or belly breathing is considered to be an important relaxation exercise for anxiety reduction by keeping patients’ attention away from fearful thoughts and increasing their calmness. The abdominal breathing is a manipulation of breath movement marked by expansion of the abdomen rather than the chest when such breathing contributes to a physiologic response of decreasing the oxygen consumption, heart rate and blood pressure.

During anxiety, the patient tends to hyperventilate. During the process of hyperventilation the patient inhales, using muscles in the chest instead of muscles in the abdomen. The use of chest muscles for breathing allows too much of oxygen to be retained in the body, thereby resulting in the alkalisation of the blood. This creates a sense of dizziness and out of control mindset eventually resulting in anxiety (Ritz, Leupoldt, & Dahme, 2006).
Changing one’s breathing pattern to a slower and controlled pattern may help counteract stressful responses within the body by producing a calming effect. To control the effect of anxiety, belly breathing or abdominal breathing may be used. During the abdominal breathing the patient will ensure that the abdominal muscles are used to breathe in and breathe out. This type of breathing tends to be deep and profound, inducing a state of calmness of mind and body as the body’s oxygen and carbon dioxide levels are maintained at the balance (Conrad, Muller, Doberenz, Kim, Meuret, Wollburg, & Roth, 2007).

Tsai (2004) evaluated that the relaxation training significantly decreased state anxiety in the treatment group as compared to the control group subjected to CABG. Dixhoorn, & White (2005) found that relaxation training enhanced the recovery after a cardiac ischemic event.

Bastani et al. (2005) showed that applied relaxation caused significant improvement in personality modification, lifestyle change and effectively reduced the level of anxiety in the experimental group. Ashton et al. (2007) conducted a prospective randomized trial on patients undergoing CABG surgery by giving training for mind body intervention in the form of self hypnosis before surgery and observed the patients more relaxed, experienced less pain, and required fewer pain medication. Ai, Peterson, & Bolling (2002) identified that the depression and general distress were less in patients who practiced relaxation techniques.
A study by Kshettry, Carole, Henly, Sendelbach, & Kummer, (2006) found that music therapy had a positive effect by providing a calm, relaxing atmosphere that reduced anxiety and intensity of pain among cardiac surgery patients.

Even though many studies have shown the effectiveness of relaxation therapy among CABG patients, when it is combined with biofeedback training it is found to be a lot more effective (Schwartz, & Sprangers, 2003). The research to date suggests that biofeedback assisted relaxation exercise could be a useful alternative or adjunct to more conventional forms of treatment as it is a promising treatment or management of several cardiovascular disorders. Biofeedback generally is integrated with relaxation. Interventions used with biofeedback training include guided imagery and breathing retraining (McGinnis, Mc Grady, & Dowling, 2005).

These techniques have shown an ability to reduce subjective levels of anxiety (Goodwin, & Montgomery, 2006). Sessions that incorporate relaxation training focus on increasing awareness and allowing individuals to have a greater range of coping (La Torre, 2001). Biofeedback assisted relaxation to treat anxiety has been reported to be effective in modifying the autonomic nervous system by decreasing physiological arousal (Goodwin, Montgomery & Reiner, 2008). This leads to decrease in chronic stress, peripheral vasoconstriction and anxiety (McGinnis et al., 2010).
Some of the other commonly monitored variables are used when the goal of biofeedback is to reduce sympathetic arousal. These include heart rate, respiration rate, skin surface temperature (at the fingertips), skin conductance and heart rate variability. This physiological information is normally not viewed under conscious control, but biofeedback provides real-time data, helping to bring such physiological processes under the control of the patient.

Biofeedback requires specialized equipment to convert physiological signals into meaningful visual cues. Using a screen such as an electronic display, patients get feedback that helps them develop control over their physiology. Just as looking into a mirror allows one to see and change positions, expressions, etc., biofeedback allows patients to see inside their bodies, with a trained practitioner serving as a guide directing them to use the feedback to regulate their physiology towards a healthy direction. Common disorders treated in this way include hypertension, anxiety and cardiovascular disorders exacerbated by stress and anxiety.

Pulseoximetry, a cheap and simple non-invasive tool used to measure oxygen saturation in blood along with heart rate. It can be used to assist with general biofeedback practices and also becoming an affordable device for general use of the population.
The literature relating to the use of biofeedback therapies for anxiety is reviewed. Vasudeva, Claggett, Tietjen, & McGrady (2003) evaluated that the biofeedback therapy effectively reduced the pain, depression and anxiety among patients experiencing migraines.

Giardino, Chan, & Borson (2004) evidenced that the heart rate variability biofeedback and walking with pulseoximetry feedback showed a statistically and clinically significant improvement in walking distance and overall quality of life among patients suffering from chronic obstructive pulmonary disease.

Harden, Houle, Green, Remble, Weinland, & Colio (2005), observed that the patients experienced reductions in pain from twenty five to twenty seven percent due to the effects of biofeedback on pain.

Making healthy changes to improve the cardiovascular health is very simple but not easy. Consistent preoperative education along with psychotherapeutic intervention throughout the patient's stay in hospital is essential. An individualized care plan, specific to the needs of the patient produces greater satisfaction and lowers the anxiety levels among CABG patients (Vargas et al., 2006). The specific needs of the patient to be addressed in the educational intervention are, information about the anatomy of the heart, possible complications, operating room, functions of the surgical staff, psychosocial support, lifestyle changes after surgery and exercises to be performed after surgery (Alkubati et al., 2013).
A variety of teaching methods have been utilized including videos that outline the surgery and recovery period, group instruction classes for non-urgent cases and written educational materials (Deyirmenjian, Karam, & Salameh, 2006).

The researcher felt that if the patient is well informed, motivated to perform the task with the required skills, the patient may positively attain the level of wellness. There is a need for behavioral interventions along with education as some patients might have knowledge but they lack motivation to cope up with the situations after CABG.

Comprehensive nursing strategies, a multi component approach that encompasses lap top assisted one to one interactive teaching on life style modification and relaxation exercise practice with pulseoxymetry feedback helps the patient to acquire the knowledge and develop the desired skills in self management during recovery period. The life style modification includes walking program, diet, physical activities and medication.

Regular reinforcement enhances adherence to life style modification and allows them to make significant improvements in quality of life. Continuing telephone contact for the immediate post-discharge days may help alleviate anxiety, uncertainty for both patient and family. This provides an opportunity to reinforce education related to home care and normalization of the patient's experiences.
The researcher felt that if the patient learns the relaxation exercise practice with pulseoxymetry feedback, his ability to gain voluntary control on state anxiety/negative emotions will improve. The patients can experiment by modifying their thinking and breathing which would help them to have control over the responses to the emotional ups and downs.

These in turn will enable the patients to regulate the autonomic nervous system which would improve their ability to cope with everyday stress and anxiety. With this focus the researcher attempted the comprehensive nursing strategies, examined the effect on anxiety, quality of life and functional status among patients subjected to CABG surgery thereby enhancing the patients to accomplish the goal of “Healthy living after CABG surgery”.

1.2 STATEMENT OF THE PROBLEM

A study to assess the effectiveness of Comprehensive Nursing Strategies on State anxiety, Quality of Life and Functional status among patients subjected to CABG surgery at Sri Ramachandra Medical Center, Porur, Chennai-116.
1.3 OBJECTIVES

The objectives of the study were to

1. Determine the effect of Comprehensive Nursing Strategies on State anxiety among patients subjected to CABG surgery.
2. Identify the effect of Comprehensive Nursing Strategies on quality of life among patients subjected to CABG surgery.
3. Evaluate the effect of Comprehensive Nursing Strategies on functional status among patients subjected to CABG surgery.
4. Associate the state anxiety, quality of life and functional status with selected demographic variables

1.4 RESEARCH HYPOTHESES

H1 : There is a significant difference in state anxiety among subjects who receive comprehensive nursing strategies than those who do not.

H2 : There is a significant difference in quality of life among subjects who receive comprehensive nursing strategies than those who do not.

H3 : There is a significant difference in functional status among subjects who receive comprehensive nursing strategies than those who do not.
1.5 OPERATIONAL DEFINITIONS

Effectiveness

Results anticipated by the execution of Comprehensive Nursing Strategies on state anxiety, quality of life and functional status among patients subjected to CABG surgery

Comprehensive Nursing Strategies

On admission and 2\textsuperscript{nd} pre operative day:

- Lap top assisted one to one interactive teaching for 30 mts on the day of admission and the 2\textsuperscript{nd} pre operative day on Life Style Modification (LSM) as diet, physical activity, walking program, medication and relaxation exercise practice with pulseoxymetry feedback (REPPF).
- Demonstration on REPPF and the gentle stretching exercises followed by return demonstration.
- During the return demonstration of REPPF session, the patient sees the anxiety responses on the screen of pulseoxymeter prior to abdominal breathing, then performs the abdominal breathing and receives the immediate feedback by means of desired heart rate and oxygen saturation.
- Issue of booklet on “Healthy living after CABG surgery” that includes LSM, relaxation exercise and Comprehensive Nursing Strategies daily log.
3rd to 7th postoperative day (POD):

Supervision of REPPF and gentle stretching exercise daily by the researcher.

8th, 15th, 30th, 60th, 85th & 90th POD:

Reinforcement on 8th, 15th, 30th & 90th POD and the telephonic reinforcement on 60th & 85th POD regarding regular maintenance of daily log and the adherence to LSM and relaxation exercise on abdominal breathing along with clarification of doubts pertaining to home management scenarios.

30th & 90th POD:

Review the regular maintenance of Comprehensive Nursing Strategies daily log and reinforcement on adherence to LSM and RE on abdominal breathing.

State Anxiety

The pre and postoperative emotional response of patients subjected to CABG surgery as measured by state anxiety Inventory (STAI).

Quality of life

The overall physical and mental well being in terms of performing activities pertaining to physical and psychosocial health as measured by general health survey Quality of life questionnaire. (Sf-36 V2)
Functional status

The distance covered by the patient in a quick self-paced walk on a 30 meters (100-ft) long, flat, straight, enclosed hallway with a hard surface in a period of six minutes as measured by six minute walk test.

1.6 ASSUMPTIONS

1. Pre operative anxiety is unique to the individual.
2. Regular exercise enhances psychodynamic equilibrium
3. Reinforcement brings change in behavior
4. Mind relaxation influences the perception of events
5. Situational influences in the external environment can increase or decrease commitment to or participation in health-promoting behavior.