CHAPTER – II

REVIEW OF LITERATURE

Any relevant literature is considered as a systematic and critical review of the most important published and scholarly researches conducted on a particular topic based on their obtained results. A thorough literature review focuses on all the prior research, and thus provides foundation on which to base further search for knowledge. Also any literature review helps to the foundation for the future study, and can also inspire new research ideas. A literature review early in the report provides the readers with a background for understanding relevant and accumulated current knowledge on the topic and thus illuminates the significance of the new study (Polit DF and Beck CT, 2004).

According to (Polit DF and Beck CT, 2004), “review of literature is a critical summary of research on a topic of interest generally based on a research problem in context or to identify gaps and weakness in prior studies so as to justify a new investigation”.

In the process of carrying out the present study, the investigator has reviewed all such literature related to the levels of stress, the coping strategies, anxiety, personality type and the quality of life among the cardiac surgical patients.

CARDIAC SURGERY AND STRESS:

Ali, N.S., and Khalil, H.Z. (1991), have conducted a study on “to identify stressors, level of stress, coping strategies, and coping effectiveness” in Egyptian female mastectomy patients. They used McNett's “Coping Effectiveness Questionnaire (MCEQ)” to measure coping effectiveness in this connection and a structured interview method was used to collect data. Their results indicated five stressors among the study.
participants: 1). hope for cure, 2). treatment effectiveness, 3). fear of the unknown, 4). progression of the disease, and 5). pain. Among these five, the treatment effectiveness stressor had the highest mean stress level and there was a significant difference in the level of stress among the five stressors. In addition, coping effectiveness was significantly and positively and obviously correlated to age and time since mastectomy, which accounted for 35% of the variance in coping effectiveness.

Nolan, M.T., Cupples, S.A., Brown, M.M., Pierce, L., Lepley, D., and Ohler, L. (1992), conducted a study on “perceived stress and coping strategies for cardiac transplant during the organ waiting period” the study conducted on 38 families of candidates. Of the 38 families, 53% and 47% of respondents indicated that they were experiencing moderate and low degrees of stress, respectively. Coping strategies used in order of decreasing frequency were: (1) knowing our family has the strength to solve our problems, (2) facing problems head-on, and (3) seeking support from friends. The three statements with which the subjects most strongly agreed were (1) heart illness has changed roles of family members, (2) family member will survive the transplant operation; and (3) this is an experience that could bring out the family's strengths. The study concluded that coping strategies were effective in mediating stress.

Porter, R.R., Krout, L., Parks, V., Gibbs, S., Luers, E.S., Nolan, M.T., Cupples, S.A., Lepley, D., Givan, D.A., Ohler, L. (1994), have done research on “Perceived stress and coping strategies among candidates for heart transplantation during the organ waiting period”; they studied the stressors and coping strategies of 39 heart transplant candidates. The mean stress score for this sample was low, 72.84 (standard deviation = 37.47) with a possible maximum score of 243. Requiring a heart transplant, having terminal heart disease, and worrying family members were identified as the three most common stressors while the three most common coping strategies were thinking
positively, using humor, and trying to keep life as normal as possible. The relatively low stress levels were surprising and could be reflective of the presence of hope or by the desire among patients to be perceived as ideal transplant recipients. This study suggested that the transplantation team should support positive coping strategies to reduce patient’s stress.

Jalowiec, A., Grady, K.L., White-W.C. (1994), have studied on “Stressors in patients waiting for a heart transplant” and identified 39 common preoperative stressors found in 175 heart transplant candidates. The 10 worst stressors were found out the findings are the need for a 1). transplant, 2). having end-stage heart disease, 3). family worrying, 4). illness symptoms, 5). waiting for a donor, 6). uncertainty about the future, 7). no energy for leisure activities, 8). constantly feeling worn out, 9). less control over life, and 10). dependency on others. One factor was more stressful for those waiting longer than the median time of 1 month while 16 factors were more stressful for those waiting less than 1 month. The novelty or even the familiarity of the factor seemed to influence the stressfulness ratings of many variables during the period of waiting for the transplant.

Doerfler, L.A., Pbert, L., DeCosimo, D. (1994), studied “Symptoms of post-traumatic stress disorder following myocardial infarction and coronary artery bypass surgery”, and assessed psychosocial adjustment, particularly post-traumatic stress disorder (PTSD) symptoms, in a sample of 50 men 6 to 12 months after initial myocardial infarction (MI) or coronary artery bypass graft (CABG) surgery. While mean scores on the adjustment measures indicated relatively low levels of distress for the entire group, a small number of patients reported elevated anxiety, depression, anger, and ruminative thinking while four patients met the criteria for PTSD. In addition, 4 patients met the criteria for major depressive disorder on the Inventory to diagnose depression. Overall,
the study suggested that post-traumatic stress disorder-like reactions may be an unrecognized problem for some men who sustain an MI or undergo CABG surgery.

Cuppes, S.A., Nolan, M.T, Augustine, S.M., Kynoch, D. (1998), have assessed perceived stressors and coping strategies among heart transplant candidates”, and they examined heart transplant candidates' perceived stressors and coping strategies at the time of placement on the waiting list and at 3, 6, 9, and 12 months following. While mean stress scores were relatively low at each assessment time, 1) having a terminal disease, 2) needing a heart transplant, 3) worrying family members, and 4) undergoing prolonged hospitalization were identified as the 4 greatest stressors. While a moderate number of coping strategies were being used, the 5 most frequently used were: 1) thinking positively, 2) trying to keep life normal, 3) keeping a sense of humor, 4) praying or trusting in God, and 5) trying to distract oneself. No significant differences were seen in coping use or effectiveness over time.

Peter, B., Stefan, H., Heinrich, M., Eva, L., Helmut, H.S., Peter, R., and Bruno, R. (2000), tested the perioperative course of stress, anxiety and well-being in 30 patients confronting cardiac surgery and observed that major surgery correlates with high values of perioperative stress and anxiety. Medical information state that anxiety decreased from 42.1 points to 38.7 points and remained almost unchanged until the day before surgery (38.6 points). Preoperatively salivary cortisol decreased continuously but during the transport to operating room salivary cortisol increased significantly. After induction of anaesthesia plasma, cortisol decreased from 419.0 nmol/l (SE 17.7) to 186.9 nmol/l (SE 15.4). Postoperatively their well being deteriorated in all patients and anxiety decreased after surgery. Finally, their study suggested that despite preoperative sedation, there was a high level of stress but anxiety in patients confronting cardiac surgery.
Peter, B., Stefan. H., Heinrich, M., Eva, L., Helmut, H.S., Peter, R., and Bruno, R. (2001), have done research on “The influence of Medical information on the Perioperative course of stress in cardiac surgery patients”, and they observed that cardiac surgery correlates with increased Perioperative stress and anxiety in 60 patients awaiting open heart surgery that were divided into two groups. The 30 patients in Group I received routine medical information through an informative pamphlet while those in group II received additional extensive oral medical information and more personal attention by the surgeon. Extensive preoperative oral information in combination with more personal attention by the physician did not have any significant influence on the perioperative psychoendocrinologic course of stress. During transport to the operating room, salivary cortisol increased significantly in both groups versus the first day in the hospital. After the induction of anesthesia, plasma cortisol decreased significantly in both groups versus preoperative levels. Overall, the study demonstrated lack of effect of extensive oral medical information that was presented as part of clinical routine on the perioperative psychoendocrinologic course of stress.

Gustav, S., Erich, K., Benno, R., Dominique, J.-F de Q., Josef, B., Alexander, D., Hans-Bernd, R., Till, K., Georg, N., Hans-P. K. (2003), have observed their study: “1). Stress doses of hydrocortisone, 2). traumatic memories and 3). symptoms of post-traumatic stress disorder in patients after cardiac surgery: a randomized study”, and performed a prospective, randomized study to examine whether exogenously administered stress doses of hydrocortisone during the perioperative period of cardiac surgery (CS) reduces the long-term incidence of chronic stress and post-traumatic stress disorder (PTSD) symptoms. Ninety one patients were prospectively randomized to receive either stress doses of hydrocortisone or standard treatment during the perioperative period of CS. Of the 48 available patients at 6 months after CS, 26 had
received stress doses of hydrocortisone and 22 standard treatments. They found that patients from the hydrocortisone group had significantly lower chronic stress symptom scores and that there was no significant difference regarding the number or type of traumatic memories between the hydrocortisone and the standard treatment groups. However they concluded that stress doses of hydrocortisone in patients undergoing CS are associated with a lower intensity of chronic stress and PTSD symptoms at 6 months after CS.

Helle, S., and Susanne, S.P., (2005) have studied the literatures on “Post traumatic stress disorder in the wake of heart disease: Prevalence risk factors and future research directions”, and they reviewed studies looking at PTSD as a sequel of heart disease with a focus on prevalence, risk factors, and future research directions. The prevalence of PTSD after heart disease varied from 0% to 38% across the studies examined by the authors. Studies including control groups showed that cardiac patients were at risk of developing PTSD. The risk factors included socio-demographic and psychological characteristics and aspects related to the cardiac event. Overall, they concluded that patients were at risk of PTSD after cardiac conditions.

D.L. Whitehead, L. Perkins-Porras, P. C. Strike, A. Steptoe, (2006), have done research on “Post-traumatic stress disorder in patients with cardiac disease: predicting vulnerability from emotional responses during admission for acute coronary syndromes” and conducted a study to assess frequency and predictors of post-traumatic stress disorder (PTSD) at three months after admission for acute coronary syndromes (ACS) for 135 patients. Of them 20 patients showed a symptom pattern characteristic of PTSD at three months assessed by a conservative scoring criterion. Severity of chest pain and psychological factors during admission were predictive of PTSD severity. Acute stress symptoms, depression, negative affect, hostility, and pain scores were
independent predictors of three-month PTSD symptoms. In contrast, demographic factors (age, sex, education level and income) were unrelated to post-traumatic symptoms, as also were markers of clinical disease severity. They concluded that Patient vulnerability to PTSD three months after ACS is predictable on the basis of psychological state and chest pain at the time of admission.

Heike, S., Gerdi, W., Daniela, Z., Jacqueline, M.A. Smits. (2009), have done research on “Psychological Characteristics and Social Integration of Patients with Ischemic and Non-Ischemic Heart Failure Newly Listed for Heart Transplantation: The Waiting for a New Heart Study”. They conducted a multi-site study in 318 candidates to examine, whether heart transplant (HTx) candidates with ischemic heart failure due to coronary artery disease (CAD) have an adverse psychological risk profile and reduced social integration compared to patients with non-ischemic etiology. Their results suggested a high level of stress and signs of clinical depression in as many as 39 per cent of the sample. Social integration was correlated with reduced depression, while ischemic and nonischemic groups were comparable in terms of disease severity. In addition, men with CAD reported significantly more anxiety, anger, anger-in, and less social integration than non-ischemic men after adjusting for age and marital status. Overall, the study suggested that psychosocial stress is common in HTx candidates and targeting psychosocial stress and increasing social integration would enhance well-being in patients waiting for a new heart.

Kenneth, E., Freedland. (2009), have researched on “Stress management more effective than drugs after heart surgery” and studied 123 patients who had major or minor depression within one year after surgery. After three months, 71 percent of the patients in the cognitive behavior therapy group and 57 percent in supportive stress management group experienced remission of their depression while only 33 percent of
patients in the usual care group saw improvement. In addition, cognitive behavior therapy was also superior to usual care on most secondary psychological outcomes, including anxiety, hopelessness, perceived stress and the mental component of health-related quality of life. Other non-drug therapies that have been used by people suffering from anxiety and stress include exercise, healthy diet and health supplements.

**Hilde, M., Øivind, E., Kirsti, T., Susanne, K. and Olav, S. (2010),** explored on “Post-traumatic stress, anxiety and depression symptoms in patients during the first year post intensive care unit discharge” and studied the level and predictors of post-traumatic stress, anxiety and depression symptoms in 255 medical, surgical and trauma patients during the first year post intensive care unit (ICU) discharge. Their results suggested no significant differences in post-traumatic stress, anxiety or depression between medical, surgical and trauma patients. High educational level, personality trait, factual recall and memory of pain were independent predictors of post-traumatic stress symptoms at one year. Optimism was a strong predictor for less anxiety and depression symptoms after one year. Overall, they concluded that the mean level of post-traumatic stress symptoms in patients one year follow up ICU treatment was high and one of four were above case level.

**CARDIAC SURGERY AND STRESS RESILIENCE:**

**David, K.C., Linda, M.G., Mary, Ann, D. and Stephen, A.W. (1990),** have studied on the topic “Family-of-origin characteristics and current family relationships of female adult incest victims” and assessed resources related to 6 female and 45 male cardiac patients' sense of self, marital quality, and social support before their first planned bypass surgery to determine their relationship with later psychosocial functioning. Their results suggested that, only the marital relationship variables made independent contributions to the prediction of functioning with marital flexibility and support found
to make an independent contribution to recovery. These results highlight the
importance of marital resources in coping with the acute phase following bypass
surgery and have implications for prevention and clinical practice.

**Southwick, S.M., Vythilingam, M., Charney, D.S. (2005),** have assessed “The
psychobiology of depression and resilience to stress: implications for prevention and
treatment” and reviewed neurobiological and psychosocial factors associated with
stress-induced depression and compared them with those believed to characterize stress
resilience. Neurobiological factors discussed and contrasted included serotonin, the 5-
HT1A receptor, and polymorphisms of the 5-HT transporter gene, norepinephrine,
alpha-2 adrenergic receptors, neuropeptide Y, polymorphisms of the alpha-2 adrenergic
gene, dopamine, corticotropin-releasing hormone (CRH), dehydroepiandrosterone
(DHEA), cortisol, and CRH receptors. The primary findings of this review were that
potential psychological, social, spiritual, and neurobiological approaches to enhancing
stress resilience do decrease the likelihood of developing stress-induced depression/anxiety.

**Fatih, O., Douglas, C. J., Eleni, E., Morgan, I., Dennis, C. and Steven, S. (2007),**
have assessed the “Social Support and Resilience to Stress: From Neurobiology to
Clinical Practice” and examined the impact of Social Support on stress and found the
studies where the harmful consequences of poor social support and the protective
effects of good social support was documented. Social support may moderate genetic
and environmental vulnerabilities and confer resilience to stress. The authors concluded
that there was a substantial need for additional research and development of specific
interventions, aiming to increase social support for psychiatrically ill and at-risk
populations.
Robley, L., Ballard, N., Holtzman, D., Cooper, W. (2010), have researched on “The experience of stress for open heart surgery patients and their caregivers” The researchers conducted a study to understand the modern experience of stress among adult coronary artery bypass grafting (CABG) patients, who were hospitalized less than 10 days and among their significant caregivers. The stressors identified by both patient and family participants were shock and disbelief leading to a feeling of being overwhelmed with mortality that was foremost among the patients, while anger was expressed among caregivers. The importance of providing information, honesty, and trust were pivotal to alleviating stress and the study recommended that a more thorough knowledge of history and complementary therapies were needed to reduce stress.

**CARDIAC SURGERY AND PSYCHOLOGICAL SYMPTOMS OF STRESS:**

Herbert, R., Lazarus, M.D., And Jerome, H. H. (1968), have researched on “Prevention of Psychosis Following Open-Heart Surgery” and studied preoperative psychological state of the patient and the environment in the recovery room, to determine their influence upon the incidence of postoperative reactions in two groups of heart-surgery patients. They concluded that a preoperative psychiatric interview, accompanied by individual recommendations for postoperative care along with minimization of the environmental stresses of the recovery room reduced the risk of postoperative psychotic reaction among heart-surgery patients.

Stanley, S.H., Kenneth, A.F., James, R. M., Frederick, O. B., Jr, Paul, D. H., Maurice, H. C., and Donald, S. K. (1970), have observed on “Psychiatric Complications of Open-Heart Surgery-A Re-Examination” This research has studied Psychiatric Complications of Open-Heart Surgery. The frequency of delirium preceded by a lucid postoperative interval declined from 38 per cent in 1965 to 24 per cent in 1969. In 9 per cent of them there was an immediate organic brain syndrome. The
following factors, evidently are associated with brain dysfunction; they were found to be related to the occurrence of delirium: advanced age, severity of preoperative and postoperative illness and time on cardiopulmonary bypass. The postoperative lucid interval suggested that recovery-room factors were also involved. Decreased time required on cardiopulmonary bypass appears to be a primary factor in the reduction of frequency. Modifications in the environment of the recovery room after open-heart surgery may also have contributed to the decline.

Kenneth, A. F., Stanley, S. H., Donald, S. K. (1972), have reviewed an article “A Survey of Adjustment to Cardiac Surgery” and the researchers surveyed 800 patients who had cardiac surgery regarding their psychological reactions to the entire surgical process. The majority reported gratification with the results, and expressed improvement in the broad areas of functioning. However, despite general improvement, anxiety was present at all stages, and psychological disturbing problems were more in the recovery room; on the whole, the patients described a generalized need for greater physician support, direction, and encouragement in the decision for surgery and in resuming activity following convalescence.

M.J. Gundle., B.R. Reeves., Jr., S. Tate., D. Raft., and L.P. McLaurin. (1980), have observed in “Psychosocial outcome after coronary artery surgery” when they interviewed 30 patients before surgery; and 1-2 years after surgery. Despite good physiologic outcome this sample was found to be functioning poorly. Eighty-three percent were unemployed, and 57% were sexually impaired. A preoperative duration of symptoms of eight months or more was associated with significantly worse postoperative overall adaptation. Most patients who had suffered angina for eight months or longer, evidenced a damaged self concept, which was reinforced rather than repaired by the experience of surgery.
Anderson, Erling, A. (1987), have observed in “Preoperative preparation for cardiac surgery facilitates recovery, reduces psychological distress, and reduces the incidence of acute postoperative hypertension” and they evaluated whether preoperative preparations for cardiac surgery (a) reduced psychological distress and facilitated physical recovery, (b) reduced preoperative anxiety by making patients feel well-informed or by increasing their sense of control over recovery, and (c) reduced the incidence of sympathetically mediated, acute postoperative hypertension. Preoperatively (1 day after preparation), both experimental groups were significantly less anxious and less fearful than the control group. Consistent with Lazarus's theory of stress, belief in control over recovery best predicted the preoperative anxiety. Overall results indicated that information reduced anxiety by increasing feelings of control. Postoperatively, both experimental groups reported less emotional distress, and they were judged by nurses as making better physical and psychological recoveries, and had a 32.5% lower incidence of postoperative hypertension.

Dew, M.A., Simmons, R.G., Roth, L.H., Schulberg, H.C., Thompson, M.E., Armitage, J.M., Griffith, B.P. (1994), have observed that “Psychosocial predictors of vulnerability to distress in the year following heart transplantation” and examined the psychological symptomatology in a cohort of 72 heart transplant recipients during their first year post-transplant. The findings of the study showed that, there was average anxiety and depression levels, but not anger-hostility symptoms, but were substantially elevated in the early post-transplant period, relative to normative However average symptom levels improved significantly over time, although one-third of the sample continued to have high distress levels during all follow-up assessments. Recipients without such factors, showed improvement in average distress levels across the assessment period. These effects were stronger for anxiety than for depressive
symptoms, with the exception of course of a sizeable relationship between loss events and subsequent depression. The findings suggested that clinical interventions designed to minimize prolonged emotional distress post-transplant need to be closely tailored to heart recipients' initial psychosocial assets and liabilities.

**Grady, K.L., Jalowiec, A., White-Williams, C. (1999),** have observed in their “Preoperative psychosocial predictors of hospital length of stay after heart transplantation” and when they examined relationships between preoperative psychosocial variables and hospital length of stay (LOS) and identifying preoperative psychosocial predictors of LOS after transplant in 307 patients. The findings of the study revealed that, psychosocial problems included anxiety, stress, and inadequate coping; questionable understanding of heart failure and treatment; substance abuse; and noncompliance. Self-care disability, a history of noncompliance, and more emotional disability predicted 8% of LOS. The study concluded that the findings support the inclusion of psychosocial issues and functional disability in post-heart transplant clinical pathways.

**Hans-Bernd, R., Bernhard, G., Georg, N., Bruno, R., Gustav, S., Hans-Peter, K. (2005),** have conducted a study on “Psychiatric and psychosocial outcome of cardiac surgery with cardiopulmonary bypass: a prospective 12-month follow-up study”, and performed a 1 year follow up study for 30 of the original 34 patients who had undergone cardiac surgery with cardiopulmonary bypass (CPB). Postoperative delirium developed in 11 of the 34 patients; and short-term consequences of cardiac surgery included adjustment disorder with depressed features, post-traumatic stress disorder, major depression and clinically relevant cognitive deficits. At 12 months, the severity of depression and anxiety disorders improved and returned to the preoperative level, and 6 out of the 30 followed-up patients displayed cognitive deficits. Cardiac surgery
with CPB was associated with improvements in health related quality of life (HRQOL) relative to the preoperative period, but the presence of cardiac surgery-related cognitive decline impairing HRQOL led to a complication for a subgroup of cardiac surgical patients in the long-term outcome.

Spaderna, H., Smits, J.M., Rahmel, A.O., Weidner, G. (2007), conducted a study on “Psychosocial and behavioral factors in heart transplant candidates--an overview” and conducted a review on Psychosocial and behavioral factors in heart transplant candidates and observed that psychosocial characteristics like depression, social isolation and coping strategies do certainly contribute to morbidity and mortality in heart failure (HF) patients, and may also be relevant to the prognosis of heart transplant (HTX) candidates. Findings on the effects of depression on pre-transplant mortality were conflicting and not much could be known concerning social isolation, coping, nutrition, or weight loss in this patient group. But identification of modifiable psychosocial and behavioral variables was clearly needed and they appeared to help the development of behavioral interventions to supplement the other medical therapies.

McLain, R.M., Dashiff. C. (2008), have observed that “Family stress, family adaptation, and psychological well-being of elderly coronary artery bypass grafting patients” and thereafter assessed family stress, family adaptation, and psychological well-being of 42 elderly coronary artery bypass grafting patients. A descriptive, correlation as a pilot study was adopted as a basis to examine the relationship between family characteristics and psychological well-being in elderly coronary artery bypass grafting patients. The study samples consisted of 42 participants. The results of this study, which consists of 42 participants, were presented, as well as implications for critical care nursing was emphasized.
Franklin, R., Lesley, B., Ondine, S., Scott, B., Judy, S., Michael, B., Juliana, Van Der, M., Jee –Yoong, L., and Donald, E. (2011) have studied in “Physical conditioning and mental stress reduction - a randomized trial in patients undergoing cardiac surgery” and evaluated the effect of programmes on the quality of life (QOL), rates of postoperative Atrial fibrillation (AF) and the length of stay (LOS) in the hospital. The patients concerned were randomized to receive either holistic therapy (HT) or usual care (UC). The study comprised of 117 patients of whom 60 received HT and 57 received UC. HT, as delivered in this study, compared to UC did not result in significant changes in QOL, LOS or AF incidence. Therefore the authors suggested that further research was required to determine whether a similar programme of longer duration, or targeted to high risk patients could provide any measurable benefits.

CARDIAC SURGERY AND ANXIETY

Guy, Vingerhoets. (1998), has researched on “Perioperative Anxiety and Depression in Open-Heart Surgery Patients” He studied 80 patients for Perioperative Anxiety and Depression in Open-Heart Surgery Patients. The patients with high, moderate, or low anticipatory anxiety still had relatively high, moderate, and low anxiety, respectively, in the postoperative period, thus supporting the linear relationship between preoperative and postoperative arousal. The findings suggested that cardiac surgical patients do not experience significant postoperative changes in depression related to cognitive-affective symptoms. The preoperative assessment of emotional arousal could actually predict the level of emotional distress after surgery.

Fitzsimons, D., Parahoo, K., Stringer, M. (2000), have studied on “Waiting for coronary artery bypass surgery: a qualitative analysis study” and while doing so they used an inductive research approach to conduct interviews with 70 randomly selected patients at three intervals over the first year on the waiting list - referral for surgery,
again after waiting 6 months (n=49), and finally after waiting for 1 year (n=28). This report strongly suggests that patients awaiting bypass surgery require more information regarding the waiting time for such a surgery. Nursing intervention and support should also be directed at reducing patients' anxiety levels. This was the first known qualitative study which specifically examined patients' perception of the waiting period prior to bypass surgery. This finding may therefore provide new evidence on which to base practice for nurses in both hospital and community, and may also make way for further research in this area.

McCormick, K.M., Naimark, B.J., Tate, R.B. (2006), have observed on “Uncertainty, symptom distress, anxiety, and functional status in patients awaiting coronary artery bypass surgery” and conducted a study to (1) describe uncertainty, anxiety, the symptom distress experience, and functional status of patients on a coronary artery bypass graft (CABG) waiting list and conclude on the relationship between these concepts; (2) to explore whether the length of time waited has an influence on the psychosomatic condition of patients; and (3) to explore the use of semi-structured interviews within the context of a theoretic framework and compare open-ended responses to quantitative results. The results of the study revealed that, average uncertainty and anxiety were present at moderate levels and were associated with moderate deterioration of functional status. They also reported that symptom distress was low; however, the presence of symptoms showed a strong relationship with anxiety, and this relationship was confirmed through semi-structured interviews. No statistically significant relationship was found between the study variables and waiting time; however, there was a nonsignificant trend toward deterioration of psychological and physical condition with longer waits, which may be clinically significant. The study concluded that, psychosocial distress and physical condition among patients on
CABG waiting lists should be continually assessed in all patients regardless of how long they have been waiting. Each patient will have a unique presentation of symptoms and a corresponding unique psychologic response.

**Tung, H.H., Hunter, A., Wei, J.** *(2008)*, have observed that “Coping, anxiety and quality of life after coronary artery bypass graft surgery” and further explored the relationship between ways of coping, the anxiety level and the quality of life of patients after coronary artery bypass grafting. They found that Better quality of life was associated with lower anxiety level, greater use of problem-focused coping strategies and those who had more gender role responsibility. Women scored lower on the physical dimensions of quality of life, and used more self-blaming coping strategies and experienced slightly higher levels of anxiety, compared to those of men. The qualitative analysis supported the conclusions of the quantitative analysis. Lastly they concluded that the results would help nurses in designing specific interventions intended to lower anxiety levels, and thus promote the use of problem-focused strategies and also help them to identify patients' values, which are necessary to achieve the optimal quality of life.

**Phillip, J.T., Robert, A.B., Deborah, T., and Helen, W.** *(2008)*, have observed in “The role of depression and anxiety symptoms in hospital readmissions after cardiac surgery” and they determined the association between depression, anxiety and general stress symptoms with hospital readmissions after coronary artery bypass graft surgery. 226 coronary artery bypass graft patients completed baseline self-report measures of depression, anxiety and stress and 222 patients completed these measures after surgery in the hospital ward. They found that there was more than two-fold increase in readmission risk was attributable to preoperative anxiety and postoperative depression, independent of covariates. These results support to show the symptoms of depression
and anxiety are definitely associated with morbidity following coronary artery bypass graft surgery. The findings emphasize the need to develop suitable interventions for anxiety and depression among coronary artery bypass graft surgery patients.

Spezzaferri, R., Modica, M., Racca, V., Ripamonti, V., Tavanelli, M., Brambilla, G., and Ferratini, M. (2009) have studied on “Psychological disorders after coronary artery by-pass surgery: a one-year prospective study” and assessed post-operative and 12-month persistence of psychological disorders by means of the Minnesota Multiphasic Personality Inventory (MMPI-2) and the depression and state anxiety and trait anxiety scales of the cognitive behavioral assessment (CBA-2.0) in 118 male patients admitted to cardiac rehabilitation after CABG. They found no association between psychometric results and ventricular function; the number of grafts or time since diagnosis of coronary artery disease. Finally, they concluded that state anxiety and depression by CBA significantly decreased 1-year after CABG; conversely trait anxiety and depression, investigated by MMPI-2, a more specific personality questionnaire, were stable. High scores for the depression in the scale D of MMPI-2 early after CABG seem to be predictive of the persistence of the disorder at 1-year.

Gallagher, R., McKinley, S. (2009), have studied on “Anxiety, depression and perceived control in patients having coronary artery bypass grafts” and determined the course of anxiety, depression and perceptions of control, and the influence of perceptions of control, in patients undergoing coronary artery bypass grafts before surgery, after surgery in the hospital and 2 weeks after discharge. A prospective, descriptive design was used with a convenience sample of patients having coronary grafts (n = 155). They found the results, patients had low levels of anxiety at each time point; however, borderline or clinically significant levels were common before surgery (38.7%) and after discharge (38.6%). Depression levels were low, but increased over time. Patients had low to moderate perceptions of control over their illness before
surgery, which increased over time. Those with stronger perceptions of control were less anxious or depressed at all times and those who were more anxious or depressed before surgery continued to be so even afterwards.

Amy, A.A., Susan, B. (2010), have observed, “Symptom Burden Clusters and Their Impact on Psychosocial Functioning following Coronary Artery Bypass Surgery” and observed that surgery patients often experience many symptoms during their early recovery over the first three months after hospital discharge. An approach to further examine multiple symptoms occurring simultaneously among elderly coronary artery bypass surgery (CABS) patients is to examine symptoms within a cluster; as multiple symptoms can influence one another, and various cluster subgroups may impact recovery outcomes. This is important because according to the AHA (2008), over 50% of the total CABS performed in 2005 were on patients over the age of 65 years. Although the process of ageing has been suggested as the reason for alterations in symptoms and recovery delays, still there is dearth of information available on the trajectory of symptoms, experienced following CABS and any age-related impact. Therefore, the purpose of these secondary analyses was to identify and describe subgroups of elderly CABS patients, based on their symptom profile and examine how psychosocial functioning differed by symptom cluster subgroups over time (at discharge, 6-weeks and 3-months after CABS).

Pfaffenberger, N., Doering, S., Puffinger, P., Höfer, S., Alber, H., Ruttmann, E., Günther, V., Kopp, M. (2010), conducted a study on “Health-related quality of life, anxiety and depression before and after coronary artery bypass grafting” and assessed health-related quality of life as well as the level of anxiety and depression in patients undergoing coronary artery bypass graft (CABG) in 54 patients. The findings of the study revealed that, significant improvements in health-related quality of life
(MacNew) were identified 3 months after surgery. Whereas preoperative anxiety significantly correlated with health-related quality of life three months after surgery, correlations between preoperative depression and postoperative quality of life were only found for singular scales. The study concluded with the recommendations, regarding clinical practice, providing information about the probable course of quality of life and thus explaining surgery as a kind of input for the benefit of long-term enhancement seems quite necessary.

CARDIAC SURGERY AND STRESS COPING STRATEGIES:

Holahan, C.J., Moos, R.H., Holahan, C.K., Brennan, P.L. (1995) have studied “Social support, coping, and depressive symptoms in a late-middle-aged sample of patients reporting cardiac illness”, and tested a 1-year predictive model of depressive symptoms in a late-middle-aged sample of patients, reporting diagnoses of cardiac illness, compared with healthy persons; individuals with chronic and those with acute cardiac illness reported more depressive symptoms at follow-up. Women overall showed more depressive symptoms than did men, and women with cardiac illness were particularly vulnerable to behavioral manifestations of depressive symptoms. Integrative time-lag and prospective structural equation models indicated that, for individuals with cardiac illness, social support and adaptive coping strategies predicted fewer depressive symptoms.

Shih, F.J., Huang, L.H. (1996), conducted a study to examine the historical perspective of the concept of stress and the core components of Lazarus' theory in order to help Taiwanese critical care nurses better understand the process of theoretical development while assessing their clients' perceptions of post cardiac surgery pain. The study was a critical critique of Lazarus’ theory as a conceptual framework with which to study, how patients perceive post cardiac surgery pain, as a stressor. A
multidimensional model of the antecedents of stress and coping appraisals for nurses, to assess their clients' perceptions of pain and the resulting coping behaviors, is further developed, based on the aforementioned critiques. Finally, suggestions for testing theoretical propositions related to this phenomenon, as well as regarding implications for nursing practice, research, as theory are delineated and discussed.

Shih, F.J., Huang, L.H. (1996), conducted a study on “Patients' needs and their coping strategies transition to cardiac surgery” and explored their overall components, nature and definition of patients' needs, and their coping strategies of preparation for cardiac surgery, during admission transition from patients' perspectives in 30 patients. Ninety percent of participants expressed two types of needs: certain- including met, unmet and expectant needs, and uncertain needs. Needs that participants believed to have been met were the needs for security, maintaining daily living activities, understanding surgery process and recovery process as well, the needs for optimal physical condition for surgery, receiving quality treatment, and coaching as to the use of medical instruments. The unmet needs were the needs for maintaining daily activities, security, fulfilling unfinished family responsibilities, financial support, understanding all the aspects of surgery and what to expect during the recovery process, freedom from pain, family members' companionship, and spiritual support. Finally, a conceptual framework was developed to describe and depict all these complex phenomena.

Ben-Zur, H., Rappaport, B., Ammar, R., Uretzky, G. (2000), Their study aimed at knowing the “Coping strategies, life style changes, and pessimism after open-heart surgery” and surveyed 171 patients two to 20 months after undergoing coronary artery bypass graft surgery (CABG). The post-CABG period was characterized by fewer working hours, a higher level of physical exercise, a reduction in smoking, and more appropriate nutritional habits, compared with the preoperation period. At the same time,
the anxiety level of post-CABG patients was higher than that measured in a community sample. Post-CABG high psychological distress (anxiety and mood states) and low functional capacity were associated with high levels of pessimism and ineffective emotion-focused coping strategies. The study recommended that these results be used by social workers in devising psychological interventions aimed at improving post-CABG patients' quality of life and bolstering their coping strategies.

Döring, S., Mumelter, C., Bonatti, J., Oturanlar, D., Gaggl, S., Pachinger, O., Müller, L., Schüssler, G. (2001), have written in their study namely “Variability of coping strategies in coronary artery bypass surgery patients” and interviewed 35 patients undergoing coronary artery bypass surgery about their coping and stress experience after cardiac catheterization, on the day before surgery, and six days after surgery. Anxiety and depression were measured. While the group means were stable, vast interindividual differences occurred. Also, there was a high degree of scatter in the stability of single coping items; emotion related coping modes were more stable than cognition and action related ones. The variability of the patients' coping patterns correlated positively with the amount of stress experienced and with preoperative depression. The variability of individual coping efforts might be linked to a personality disposition characterized by vulnerability to stress and depressive reactions.

Lopez, V., Sek Ying, C., Poon, C.Y., Wai, Y. (2007), conducted a study on “Physical, psychological and social recovery patterns after coronary artery bypass graft surgery: a prospective repeated measures questionnaire survey” and examined the physical, psychological and social recovery patterns, on those, who have undergone CABG surgery over a period of six months. Patients were interviewed in person, 5 days before surgery and at 1 week after discharge and by telephone at 3 and 6 months after discharge. The results of the study revealed that, the mean physical sickness impact
profile (SIP) dimension score and depression level at discharge was the highest; later then, gradually decreased at 6 months after CABG. The SIP-physical and SIP-social and depression level differed significantly across the four-assessment time within-group. The study concluded that, patients should be prepared for discharge after CABG surgery.

Jalowiec, A., Grady, K.L., White-Williams, C. (2007), conducted a study on “Predictors of perceived coping effectiveness in patients awaiting a heart transplant” The background of the study was based on the factors that, the wait for a heart transplant (HT) is a very stressful time for patients; how well they cope depends on the quality of life. The results of the study revealed that, the regression model explained 23% of the variance in perceived coping effectiveness. Coping styles explained the most variance, followed by coping resources, illness-related situation factors, stress appraisal, and person factors. Nine predictors were significant: less use of emotive, evasive, and fatalistic coping styles; feeling that the interventions of the HT team were very helpful; longer wait for the HT; foreseeing a favorable post-HT prognosis; more use of optimistic coping; urgent transplant status; and greater satisfaction with social support resources. The study concluded that, Coping styles, social support, HT wait, perceived prognosis, and transplant status contributed the most in predicting perceived coping effectiveness.

Ai, A.L., Park, C.L., Huang, B., Rodgers, W., Tice, T.N. (2007), conducted a study on “Psychosocial mediation of religious coping styles: a study of short-term psychological distress following cardiac surgery” and conducted a prospective study and examined religious coping styles, hope, and social support as pathways of the influence of general religiousness (religious importance and involvement) on the reduced postoperative psychological distress of 309 cardiac patients. The results of the
study revealed that, the results of structural equation modeling indicated that controlling for preoperative distress, gender, and education, religiousness contributed towards positive religious coping, which in turn was associated with less distress, a path fully mediated by the secular factors of social support and hope. Furthermore, negative religious coping styles, although correlated at the bivariate level with preoperative distress, but not with religiousness, were associated both directly and indirectly with greater post-operative distress.

Chung, M.C., Berger, Z., Rudd, H. (2008), conducted a study on “Coping with post-traumatic stress disorder and comorbidity after myocardial infarction” and conducted a study to fill the gap in medical literature by investigating the relationship between coping strategies, post-traumatic stress after myocardial infarction (post-MI PTSD), and comorbidity is limited. The method used was one hundred twenty patients with MI were recruited from 2 general practices and interviewed using the Post-traumatic Stress Diagnostic Scale, the General Health Questionnaire, and the COPE Scale. The results of the study revealed that, thirty-one percent had PTSD. Patients used acceptance-focused coping in that most of them accepted that the MI had happened and that it could not be changed. At the same time, some patients used avoidance-focused coping in that they disengaged themselves mentally and behaviorally from the traumatic effects of MI. Patients who underwent medical procedures or interventions such as bypass surgery and angioplasty tended to report more PTSD symptoms. The study concluded that, the way in which MI patients' coping strategies relate to health outcomes has been shown to be symptom-specific.

Furze, G., Dumville, J.C., Miles, J.N., Irvine, K., Thompson, D.R., Lewin, R.J. (2009), conducted a study on "Prehabilitation prior to CABG surgery improves physical functioning and depression” and in this connection they conducted a
randomized controlled trial comparing nurse counseling with the heart operation programme to routine nurse counseling in cases of 204 patients awaiting first time elective CABG. Primary outcome measures were: anxiety and length of hospital stay; secondary outcome-measures were: depression, physical functioning, cardiac misconceptions and cost utility. At follow-up there were no differences in the level of anxiety or length of hospital stay. However there were significant differences in depression, physical functioning and cardiac misconceptions in favor of the heart operation programme. The only difference to be maintained, following surgery, was in cardiac misconceptions. The conclusions of the study was, Nurse counseling with the heart operation programme definitely reduces depression and cardiac misconceptions and thereby improves the physical functioning before bypass surgery very significantly.

Ai, A.L., Ladd, K.L., Peterson, C., Cook, C.A., Shearer, M., Koenig, HG. (2010), conducted a study on “Long-term Adjustment After Surviving Open Heart Surgery: The Effect of Using Prayer for Coping Replicated in a Prospective Design”. The background of the study was based on the factors; there were growing evidence of the positive effects of religious factors on cardiac health among the general populations. The purpose of this study was to examine multifaceted effects of religious factors on long-term postoperative adjustment, extending the previous findings concerning prayer and coping with cardiac disease. The study participants completed a mailed survey, 30 months after surgery. The results of the study revealed that, predicting lower levels of depression at the follow-up were preoperative use of prayer for coping, optimism, and hope. Predicting lower levels of anxiety at the follow-up were: subjective religiousness, marital status, and hope. The implications recommended were the influence of religious factors on the long-term postoperative adjustment is independent and complex, with mediating factors yet to be determined finally.
Ai, A.L., Pargament, K., Kronfol, Z., Tice, TN., Appel, H. (2010), conducted a study on “Pathways to postoperative hostility in cardiac patients: mediation of coping, spiritual struggle and interleukin-6”. The researchers used structural equation modeling; it was estimated, major pathways from preoperative distress, and hinted at anxiety and other factors, further postoperative period hinted at hostility in cardiac patients. Standardized medical and surgical indices were selected from a national database. Results showed that preoperative spiritual struggle mediated and indirect effects of anxiety and anger coping on Interleukin-6 (IL-6) were noticed immediately before surgery. The link between spiritual struggle and IL-6 further mediated the indirect effects of anxiety and anger coping on postoperative hostility. Anger coping mediated the harmful influence of anxiety and counteracted and nullified the protection of positive religious coping on adjustment.

CARDIAC SURGERY AND THE QUALITY OF LIFE:

Muirhead, J., Meyerowitz, B.E., Leedham, B., Eastburn, T.E., Merrill, W.H., Frist, W.H. (1992), conducted a study on “Quality of life and coping in patients awaiting heart transplantation” and did a study aimed at knowing about the relationship if any between Quality of life and coping in patients awaiting heart transplantation. In the study the samples included forty-one patients (36 men, 5 women; mean age, 48 years) who completed standardized questionnaires before transplantation to assess quality of life, physical symptoms, marital/social adjustment, psychiatric morbidity, coping, and compliance to medical regimens. The findings of the study revealed that, unlike previously reported findings with patients after transplantation, those awaiting transplantation reported moderate dissatisfaction with quality of life. Patients reported physical symptoms, functional disabilities, sexual dysfunction, and psychological distress. Nonetheless, they reported same levels of compliance with the medical regimens and that social support were high, and, both patients and spouses/partners
provided marital adjustment ratings on the Dyadic Adjustment Scale that were comparable to those of well-adjusted, happily married couples. High levels of coping also were recorded.

Trzciniecka-Green, A, Steptoe, A. (1994), have studied the “Stress management in cardiac patients: a preliminary study of the predictors of improvement in quality of life” and have studied the effects on quality of life of a 12-week relaxation-based stress management programme emphasizing improvements in self-confidence and control in seventy-eight patients following myocardial infarction, coronary artery bypass surgery or coronary angioplasty. Significant reductions in anxiety and depression; and positive improvements in psychological general well-being, activities of daily living, social activity, quality of interactions and satisfaction with sexual relationships were observed post treatment, and these were largely maintained at even follow-up. They have concluded that stress management training may lead to improvements in the quality of life of myocardial infarction and coronary artery bypass patients. Such programmes might usefully be made available even to those patients who have participated in formal rehabilitation.

Grady, K.L., Jalowiec, A., White-Williams, C. (1996), conducted a study on “Improvement in quality of life in patients with heart failure who undergo transplantation” and compared the quality of life of patients with those who had heart failure at the time of listing for a heart transplant that was 1 year after the operation. The results of the study revealed that, total symptom distress decreased significantly overall from before to after heart transplantation. Overall satisfaction with life was noticed, which was fairly high at both time periods, increased significantly from the time of listing for a transplant to 1 year after surgery and overall quality of life improved significantly from before to after heart transplantation The study concluded
that, End-stage heart failure patients had an improved quality of life from before to 1 year after heart transplant due to less total symptom distress, better health perception, better overall functional status, more overall satisfaction with life, and improved overall quality of life. However, some post-transplant patients still experienced some symptom distress, functional disability, and stress, but were satisfactorily coping well.

Catherine, K., Luigi, C., Maria, C., Morellini, and Fabrizio, C. (1997), have studied on “Heart surgery and the quality of life: a prospective study on ischemic patients” and they have evaluated changes in the quality of life of patients with a coronary heart disease and have been undergoing heart surgery in 259 patients. Their result was that the quality of life increased by 57, 64, 72, 52, 23, 44 and 56% for Karnofsky Performance Status Scale: namely energy, pain, emotion, sleep, social and mobility respectively at 2 months; at 6 months a further increase of 18% in sleep only occurred. Global scores appeared to be significantly influenced by sex, age class, type of angina, associated with the procedure and complication at surgery. The increase in the quality of life concentrates mainly at an early stage of post-operative period. The preoperative factors that were tested, allowed to stratify patients based on the quality of life and to identify those patients on which to concentrate stronger rehabilitative intervention.

Staples, P., Jeffrey, J. (1997), conducted a study on “Quality of life, hope, and uncertainty of cardiac patients and their spouses before coronary artery bypass surgery”. The study findings revealed that, Greater uncertainty was associated with lower quality of life and hope scores for patients and their spouses. Spouses were more uncertain about the patients' cardiac disease and had higher quality of life scores than the patients. The study implications for practice included the need to incorporate the spouse into the plan of care. Also, the presence of uncertainty in the waiting period for surgery for both patients and their spouses, and its negative association with quality of
life, reinforces the importance of pre-admission intervention with this kind of population.  

Christian, Stoll, et al (2000), have studied on the topic “Health-related quality of life and post-traumatic stress disorder in patients after cardiac surgery and intensive care treatment” and investigated the occurrence of post-traumatic stress disorder in a sample of patients after cardiac surgery and compared health-related quality of life and patient satisfaction, between these patients with and without evidence of post-traumatic stress disorder. Their results revealed that patients who had cardiac surgery described high life satisfaction summary scores (156 of a maximum of 200 points) and only small impairments in physical and mental SF-36 summary scores when compared with the healthy control groups (median reduction 7.15, P < .05). Patients with evidence of post-traumatic stress disorder (n = 15) reported the lowest SF-36 mental health summary scores when compared with such patients as were without stress disorder (38.3 vs 48.4, P = .004) and rated their life satisfaction lower (121.5 vs 162.0, P = .002). And the researchers have concluded that patients who have had cardiac surgery demonstrate a high life satisfaction with an acceptable degree of physical and mental health-related quality of life.  

Finch, N., Sneed, N. (2003), have written in their study namely “Quality of life when living with heart failure”. Of course heart failure is a chronic condition and consumes a huge portion of health care expenditures. An increased life expectancy combined with increasingly effective treatments for coronary artery disease and hypertension will increase the number of patients with heart failure. Efforts are being aimed at helping patients’ better care for themselves. Thereby nurses can design interventions that focus on education and self-management of complex treatments, spiritual support, and clinical relationships based on mutual trust. It is essential that health care providers direct and evaluate interventions that promote improved QOL for patients and their
families. Nurses also need to continue to study the effects of education and self-care interventions so that care for heart failure patients is evidence based.

Schelling, G., Richter, M., Roozenaal, B., Rothenhäuser, H.B., Krauseneck, T., Nollert, G., Schmidt, M., Kapfhammer, H.P. (2003), have measured the “Exposure to high stress in the intensive care unit may have negative effects of health-related quality-of-life outcomes after cardiac surgery” and they have studied a total of 148 cardiac surgical patients who were evaluated for traumatic memories, from postoperative treatment in the cardiovascular intensive care unit (defined as the subjective recollection of pain, respiratory distress, anxiety/panic, and nightmares), symptoms of chronic stress, including those of post-traumatic stress disorder, and health related quality of life (HRQL) preoperatively (at baseline) and also at 6 months after cardiac surgery. Twenty-seven of such patients (18.2%) had post-traumatic stress disorder at 6 months after cardiac surgery; seven of these patients (4.8%) had evidence of preexisting post-traumatic stress disorder before undergoing cardiac surgery. Patients with new post-traumatic stress disorder at 6 months after cardiac surgery had a significantly higher number of traumatic memories from postoperative treatment in the cardiovascular intensive care unit. Stress symptom scores were the most significant predictors of mental health HRQL outcomes. They concluded that exposure to high stress in the cardiovascular intensive care unit can have negative effects on HRQL outcomes of cardiac surgery.

Barbara, P.B., Joseph, M., James, A.B., Kathleen, Welsh-Bohmer., William, D. W., Daniel, M., Kevin, L., and Mark, F.N., (2003), in their study “Female Gender Is Associated With Impaired Quality of Life 1 Year After Coronary Artery Bypass Surgery” they have evaluated gender-related differences in quality of life (QOL) and cognitive function 1 year after coronary artery bypass surgery (CABG), even after
adjusting for known baseline differences. Their results suggested female patients showed significantly worse outcome than male patients at 1 year follow-up in several key areas of QOL. After adjusting for baseline differences, women are at greater risk for increased cognitive difficulties (p=0.04) and anxiety (p=0.03), as well as impaired DASI (p=0.02), IADL (p=0.03), and work activities (p=0.02). However cognitive sequels attributable to bypass surgery were similar between men and women. And the researchers concluded that even after adjusting for known risk factors for compromised QOL and cognitive functioning, women do not show the same long-term quality benefits of CABG surgery as men do.

Shaul, S., Varda, S., Haim, K., Ehud, D. (2004), wrote in their study i.e. “Holocaust survivors coping with open heart surgery decades later: post-traumatic symptoms and quality of life” they assessed that the association between the impact of Holocaust experience (post-traumatic symptoms) and QoL of patients before and after an open heart surgery. They found the result that the total Impact of Events Scale (IES) score indicate a high level of post-traumatic symptoms at all the time points (close to a mean of 18). In addition, the findings show that those with higher levels of post-traumatic symptoms are more at risk for problems in pain and mobility domains of QoL at admission: for emotional reaction after the surgery, and at the follow-up, these associations are only at trend level, while lower sense of mastery became significant. Finally they concluded that the improvement in QoL despite persistence of the impact of the Holocaust may indicate that past severe prolonged traumatization does not necessarily reduce the survivors' ability to cope with and regain physical and psychosocial functioning even after a severe life-threatening medical condition.

Kerstin, E. E. S., Ralf, S., Norman, SE. (2004), in their article – “Predicting cardiac patients' quality of life from the characteristics of their spouses”, study and report as
follows: recovery from surgery can be facilitated by personal and social resources, such as optimistic self-beliefs and social support. Moreover, the existence of a social network and the behavior of its members can also have a positive effect. Patients (N = 381; 302 men, 79 women) undergoing heart surgery were surveyed once before and twice after their surgery. In addition, 114 social network members (18 men, 96 women), most of them are spouses, reported about their own perceived resources at Time 1. It turned out that characteristics of spouses were related to the patient characteristics. Recovery from surgery at Time 2 and readjustment to normal life after half a year (Time 3) could be partly predicted by spouses' perceived social support and optimistic self-beliefs (Time 1).

Tanya, M., Goyal, Ellen, L., Idler., Tyrone, J. Krause., and Richard, J. C. (2005), wrote on “Quality of Life Following Cardiac Surgery: Impact of the Severity and Course of Depressive Symptoms” and in this research paper, they have examined the impact of the severity and course of depressive symptoms on the change in the quality of life (QOL) 6 months after cardiac surgery. Ninety patients were interviewed before heart surgery for 2 and 6 months after surgery. Their results revealed higher levels of presurgical depressive symptoms predicted poorer physical functioning after cardiac surgery. An increase in depressive symptoms 2 months after surgery was significantly predictive of poorer physical and psychosocial functioning at 6 months. The effect of increased depressive symptoms on psychosocial functioning was significantly stronger in patients with high presurgical Beck Depression Inventory scores. Their conclusions were both preoperative depressive symptoms and postoperative both increase in depressive symptoms seem associated with poorer QOL 6 months after cardiac surgery.

Marie-Christine, T., Gilles, D., Jean, F. H. and Sylvie, L. (2005), have done study on “Quality of Life before and after heart valve surgery is influenced by gender and type
of valve” and in this connection they have studied 82 adults undergoing their first elective surgery for valve repair (VP; n = 9) or valve replacement (VR) with a mechanical valve (MVR; n = 57) or bioprosthesis (BVR; n = 16) before surgery and three months afterwards. Patients with an MVR improve more than those with a BVR on the mental health subscale. In physical roles, patients with an MVR improve while those with a BVR deteriorate. In emotional roles, patients with a VR improve while those with a VP deteriorate. However, they are similar on all other subscales. Women improve more than men on leisure, affectivity and social functioning while the opposite holds true for mental health. Their conclusion was that QoL does improve after surgery. However, significant differences between groups are small because of a lack of statistical power.

Panagopoulou, E., Montgomery, A., Benos, A. (2006), conducted a study on “Quality of life after coronary artery bypass grafting: evaluating the influence of preoperative physical and psychosocial functioning” and they determined the influence of preoperative physical and psychosocial functioning on the quality of life 1 and 6 months after coronary artery bypass grafting (CABG). The study used a prospective design. A total of 157 patients admitted for elective CABG participated in the study. The results showed significant improvements in the quality of life of the patients after CABG [F(2, 95)=36.337; P<.001]. Structural equation modeling analyses showed that preoperative psychological distress was the only preoperative predictor of quality of life at 1 month (beta=-.22; P<.01) and at 6 months (beta=-.28; P<.001) after the operation. The conclusion was that, the results highlight preoperative distress as a screening criterion to identify patients likely to benefit less from cardiac surgery.

on Long-Term Survival After Cardiac Surgery” and they determined whether the Duke Activity Status Index (DASI) was predictive of subsequent time-related survival after recovery from cardiac surgery. They have examined survival status among 6305 patients who underwent isolated coronary artery bypass grafting with or without valve procedures or isolated valve procedure, who had a preoperative baseline and follow-up DASI. Achieving maximum baseline DASI was associated with better risk-adjusted long-term survival (hazard ratio, 0.64; confidence limits, 0.50 to 0.83; P=0.0005). However they have concluded that the poor health-related quality of life after recovery from cardiac surgery identifies patients who are at risk for reduced long-term survival.

Lars, M., Marit, H.A., Marijke, V., Astrid, K. W., Berit, R. H. and Erik, F.(2007), in their research article: “Quality of life can both influence and be an outcome of general health perceptions after heart surgery” and further they investigated the existence of a reciprocal relationship between patients' own assessment of quality of life and their own appraisal of health. The researchers’ results revealed acceptable model-fit was obtained for reciprocal causation between general health perceptions and overall quality of life. Regression coefficients changed over different phases of rehabilitation. Serial correlation accounted for much of the variance within the variables over time. Lastly they have concluded that the present analysis demonstrates that unidirectional models of causality are inadequate to explain the effect of heart surgery on overall quality of life. Overall quality of life can only causally influence as well as be an outcome of health status after coronary artery bypass surgery. Find all citations by this author (default).Or filter your current search

Sandau, K.E., Lindquist, R.A., Treat-Jacobson, D., Savik, K. (2008), conducted a study on “Health-related quality of life and subjective neuro-cognitive function three months after coronary artery bypass graft surgery” and compared health-related quality
of life (HRQL), including patient-perceived neuro-cognitive function at preoperative baseline and 3 months after coronary artery bypass graft (CABG) surgery. The results of the study revealed that, significant improvements were demonstrated 3 months postoperatively, including the Physical Component Summary, Mental Component Summary, depression, anxiety, satisfaction with social and mental life domains, and patient-perceived neuro-cognitive function related to memory and concentration. The study concluded that the patients reported improvements in HRQL measures. It helps health care providers to facilitate preparation for the CABG recovery trajectory by discussing expected post-hospital experience and potential postoperative variations in emotions and neuro-cognitive function.

Dobre, D., de Jongste, M.J., Haaijer-Ruskamp, F.M., Sanderman, R., Van Veldhuisen, D.J., Ranchor, A.V. (2008), wrote in their study on “The enigma of quality of life in patients with heart failure” and in this connection they conducted randomized controlled trials that assessed the impact of pharmacological treatment on QoL. They observed that Life prolonging therapies, such as angiotensin-converting-enzyme-inhibitors, and angiotensin receptor blockers improve modestly or only delay the progressive worsening of QoL in Heart Failure (HF). Treatment with beta blockers does not affect QoL in any way. However, this neutral effect of beta blockers may also be due to some methodological limitations, such as the small number of patients included in beta blocker trials or the short duration of follow-up. Disease-specific questionnaires may also have some limitations, e.g. when they are not sensitive enough to detect small changes in QoL. On the other hand, therapies that significantly improve QoL in HF (e.g. inotropic agents) do not seem beneficial in relation to survival. They have concluded that QoL in HF remains an open field, in which new therapies but also clarification of methodology is required.
Zeljko, C., Iva-Segotic., Sandra, U., Mirabel, M., Visnja, I., Visnja, M.K. (2008) have studied “Health related quality of life following cardiac surgery — correlation with EuroSCORE” and performed a prospective observational study with repeated measurements for a total number of 111 patients. Preoperative mean values of study population were statistically lower than those representing general population in five out of eight health domains: physical functioning (p < 0.001), role physical (p < 0.001), bodily pain (p < 0.001), social functioning (p < 0.001) and mental health (p < 0.001). Data show significant improvement 1 year after discharge in four out of eight health domains: physical functioning (p = 0.02), role physical (p < 0.001), social functioning (p = 0.004) and mental health (p = 0.03). A subgroup of 30 patients with EuroSCORE ≥6 shows post-discharge improvements in a majority of scales: role physical (p < 0.001), bodily pain (p < 0.001), vitality (p = 0.03), social functioning (p = 0.01), role emotional (p = 0.03) and mental health (p = 0.002), and group with EuroSCORE <6 shows post-discharge improvement only in one health domain – role physical (p < 0.001). Lastly they have concluded that the health status of patients one year after hospital discharge shows a statistically significant improvement in half of the domains of physical and mental health compared with presurgery status. The high-risk group of patients (EuroSCORE ≥6) were likely to have significant improvement in greater number of health domains following surgery than the low- and medium-risk group (EuroSCORE <6).

Guido, G. U., and Samuel, F. S. (2009), in their article “Psychosocial and Cultural Influences on Cardiovascular Health and Quality of Life Among Hispanic Cardiac Patients” have examined psychosocial and cultural factors relating to four dimensions of cardiac-related quality of life (global, physical, emotional, and social functioning) in 120 Hispanic coronary heart disease (CHD) outpatients in south Florida. Their article
revealed hierarchical regression analyses; that women and patients with more severe CHD had poorer quality of life than men or patients with less severe CHD. Psychosocial and cultural factors were associated with poorer quality of life after controlling for sociodemographic and medical variables: Depression was associated with all the four quality of life dimensions (p < .001); and fatalism (p < .05) was associated with lower social functioning in women. These findings identify Hispanic subgroups with poor cardiac-related quality of life. This article can bring benefit from special outreach.

Rothenhäusler, H.B. (2010), has conducted a study on: “The effects of cardiac surgical procedures on health-related quality of life, cognitive performance, and emotional status outcomes: a prospective 6-month follow-up study” and assessed the course of health-related quality of life, cognitive and emotional changes during the six months after elective CABG, and also to investigate how cognitive impairments, depression and post-traumatic stress symptoms were related to the quality of life. The study findings of the article revealed that, Elective CABG is associated with significant improvements in health related quality of life (HRQOL) relative to the preoperative period, but impairments in HRQOL were found in a subgroup of post-CABG patients with evidence of PTSD, depression, or cognitive impairments at 6-month follow up.

Erik, F. and Milena, M. (2010) have studied: “Personality and the physician-patient relationship as predictors of quality of life of cardiac patients after rehabilitation”; and in that they have examined the influence of personality traits (trait anger, cynicism) and aspects of the physician-patient relationship (promoting patient participation by the physician, active communication behavior of the patient, trust in the physician) on the health related quality of life (HRQOL) of cardiac patients after rehabilitation in 331 patients. Their results reveal that the baseline values explain most of the variance (42%
60%). After controlling the baseline values, the sociodemographic variables explain up to 5% incremental variance of HRQOL. The characteristics of the disease and cardiac risk factors explain between 0.4% and 3.8% incremental variance; however, variance increase is often not significant enough. The personality traits, added in the fourth step explain up to 2% additional variance; trait anger is a significant predictor of HRQOL in three of the six scales. The features of the physician-patient relationship those were included in the last step led to a significant increase in explained variance (between 1.3% and 3.9%) for all the six scales. The overall explanation of variance for HRQOL is between 50% and 64%. Their conclusions were Low income, a high level of trait anger, and low patient participation are significant pointers to risk factors.

CARDIAC SURGERY AND PERSONALITY

Susanne, S. P., and Johan, D. (2003) Both have studied: “Type D personality, cardiac events, and impaired quality of life: a review”. Their findings point out that psychological distress has been associated with the pathogenesis and progression of coronary heart disease (CHD). And personality may also comprise a major explanatory factor of individual differences in stress-related CHD. This article focuses on Type D - the distressed - personality, which describes those patients, who experience increased negative emotions and tend to inhibit the expression of these emotions in social interactions. Accumulating evidence indicates that cardiac patients with the Type D personality are at increased risk for cardiovascular morbidity and mortality (odds ratios ranging from 4.1–8.9, P < 0.0001) independent of the standard cardiac risk factors. Type D patients are also at increased risk for psychological distress, clustering of psychosocial risk factors, impaired quality of life, and what is more, they seem to benefit less from medical and invasive treatment. Preliminary evidence suggests that physiological hyper-reactivity and activation of pro-inflammatory cytokines may be
responsible for the detrimental effect of Type D personality on cardiac prognosis. There is an urgent need to adopt a personality approach in the identification of patients, who are at risk for stress-related cardiac events.

Vingerhoets, G. (1998), has studied: “Cognitive, emotional and psychosomatic complaints and their relation to emotional status and personality following cardiac surgery”. And he investigated the prevalence of cognitive, emotional, and psychosomatic complaints after cardiac surgery. Five to 12 months after bypass grafting, a total of 123 patients completed the Spielberger State Anxiety Inventory, the Beck Depression Inventory, the NEO Five-Factor Inventory, and a subjective complaints questionnaire. Analyses of these entire complaints questionnaire revealed, four cognitive and four emotional/psychosomatic dimensions. Seventy-three per cent of the patients reported cognitive complaints. Seventy-eight per cent reported emotional or psychosomatic complaints, especially increased anxiety and emotional instability. Lastly, he concluded that Subjective post-operative cognitive and emotional difficulties are very common after uncomplicated cardiac surgery. So self-reported anxiety and depression are significantly associated with the occurrence of persistent subjective complaints.

Johan, D., and Viviane, M. C. (1980), have studied: “Type D personality and vulnerability to adverse outcomes in heart disease”. General distress, shared across depression, anxiety and anger, partly account for the link between mind and heart. The type D (distressed) personality individuals are those, who are particularly vulnerable to the adverse effect of general distress. And Type D individuals frequently experience negative emotions and are socially inhibited; also all these partly account for the effect of emotional distress on cardiac prognosis. Further Type D is associated with a threefold increased risk of adverse cardiovascular outcomes, even after adjustment for
depression. Some plausible pathways linking type D to cardiovascular complications include hypothalamic-pituitary-adrenal-axis hyper-reactivity, autonomic and inflammatory dysregulation, and increased oxidative stress. Additional research needs to further clarify these pathways and investigate into the type D patients may benefit from closer monitoring of risk factors and a personalized approach to behavioral intervention.

Sogaro, E., Schinina, F., Burgisser, C., Orso, F., Pallante, R., Aloi, T., Vanni, D., Pazzagli, A., Fattiri, F. (2010) have studied: “Type D personality impairs quality of life, coping and short-term psychological outcome in patients attending an outpatient intensive programme of cardiac rehabilitation”. Type D personality represents, a risk factor, for adverse outcome, and impaired Quality of Life (QoL) in CHD patients. The aims of the study were a) to verify the presence of Type D personality among patients attending cardiac rehabilitation (CR) programme; b) to investigate into their psychological health status, QoL and coping style of CR patients and c) to test the influence of Type D personality on CR patients. Data from 59 patients (39%) attended outpatient intensive programme of 4 weeks of CR and reports were collected at admission, and 1 month after discharge, using a set of self-report questionnaires. At admission, Type D patients showed a significant lower level of psychological health status and QoL satisfaction. After CR, Type D patients, continued to show psychological impairment in terms of anxiety, depressive mood, impairment in psychophysical well-being, perceived psychophysical stress, interpersonal difficulties, and social anxiety. In addition, Type D personality was also found to be associated with a significant greater use of maladaptive coping strategies. They also reported a significant higher level of psychological impairment, in terms of anxiety, depressive mood, impairment in psychophysical wellbeing, perceived psychophysical stress,
interpersonal difficulties, social anxiety, and a significant lower QoL, prior to and after CR.

OTHER VARIABLES

Charles, F. Emery. et al. (2004), These researchers have studied on “Gender Differences in Quality of Life Among Cardiac Patients” and have evaluated the gender differences in quality of life and also examined the degree to which social support was associated with quality of life in as many as 536 patients. A total of 410 patients completed the baseline assessment and at least one follow-up was undertaken, and they were included in the data analyses. The researchers concluded that women with cardiac disease indicated significantly lower quality of life than those men who were cardiac disease patients over the course of a 12-month longitudinal follow-up. Social support, especially, a sense of belonging or companionship, was significantly associated with emotional quality of life Mental Component Scale (MCS) among women. Strategies to increase social support may be important for health and well-being of women with cardiac disease.

Ratna, S., Bijlani, R., Nidhi, G., Shveta, K., Vempati, R.P. (2006), have observed in their study of “Effect of yoga based lifestyle intervention on state and trait anxiety Considerable evidence exists for the place of mind body medicine in the treatment of anxiety disorders” and further they studied the short-term impact of a comprehensive but brief lifestyle intervention, based on yoga, on anxiety levels in normal and diseased subjects. The intervention consisted of asanas, pranayama, relaxation techniques, group support, individualized advice, and lectures and films on philosophy of yoga, the place of yoga in daily life, meditation, stress management, nutrition, and knowledge about their illness. Among the diseased subjects, significant improvement was seen in the anxiety levels of patients of hypertension, coronary artery disease, obesity, cervical
spondylitis and those with psychiatric disorders. The observations suggest that a short educational programme for lifestyle modification and stress management leads to remarkable reduction in the anxiety scores within a period of 10 days.

**Tung, H.H., Hunter, A., Wei, J., Chang, C.Y. (2009),** conducted a study on “Gender differences in coping and in anxiety in patients after coronary artery bypass graft surgery” where a Cross-sectional survey research design and purposive sampling were used. The results of the study revealed that after coronary artery bypass graft surgery, both male and female patients used more problem-focused coping strategies than emotion-focused coping strategies. In comparison with men, women tended to use more blaming of self and had slightly higher scores on both state and trait anxiety. The study concluded that the clinicians need to be aware that the use of appropriate coping strategies can reduce patient anxiety, a finding that needs to be considered when designing effective interventions for such patients.

**Nilsson, U. (2009),** conducted a study on “The effect of music intervention in stress response to cardiac surgery” and evaluated the effect of bed rest with music on the first postoperative day in order to decrease the level of stress for patients who have undergone heart surgery. The results of the study revealed that, after 30 minutes of bed rest, there was a significant difference in s-cortisol levels between the groups; the findings are: 484.4 mmol/L in the music group versus 618.8 mmol/L in the control group (P < .02). However, this difference in s-cortisol levels was not found 30 minutes later (ie, after a total of 60 minutes). There was no difference in heart rate, or respiratory rate, or mean arterial pressure, or arterial oxygen tension, or arterial oxygen saturation, and also subjective pain and anxiety levels between the groups. The study concluded that, there is sufficient practical evidence of stress reduction to suggest that a
proposed regimen of listening to music while resting in bed after open heart surgery be put effectively into clinical use.

Sandhya, M., W.H. Bain, & Mahmood, Z. (1982) have studied on “Psychological Factors and Recovery From Cardiac Surgery” for this research. 21 Subjects awaiting open-heart surgery were given personality and attitude questionnaires. Results showed that Group I was significantly less depressed, more optimistic about the future and had a more positive attitude towards others. Group II realized they had been very ill and had a more negative attitude towards their spouses. Group I was found to be much better adjusted, vocationally and psychosexually, than Group II. Authors in their questionnaire in their survey of 263 patients noted a substantial incidence of vocational and emotional morbidity after operation. A total of 27% patients had an incidence of 'bad' psychological outcome. There were some hindrances, more strongly associated with pre-operative maladjustment than with either cardiac status or post-operative life stress, and these patients could be called at 'high risk’. At one-year follow-up, patients in the "high risk" group were found to be maladjusted, and they showed high levels of anxiety, depression, and somatic pre-occupation.