
ASSESSMENT OF ANXIETY BEFORE SURGERY IN CARDIAC SURGERY PATIENTS WHO HAVE NO HISTORY OF ANXIETY: SUPPORTING FACTORS AND POSTOPERATIVE MORBIDITY

Yose Wizano, Dedy Kurnia

Fakultas Kedokteran, Universitas Andalas, RSUP Dr. M Djamil Padang, Indonesia
Email: wizano@kemkes.go.id, dedykurnia@med.unand.ac.id

ABSTRACT

KEYWORDS

Preoperative Anxiety,
Cardiac Surgery, Risk
Factors, Anxiety Levels

Anxiety is a negative or threatening emotion that a person feels in general, in the long term (anxiety trait), or in certain situations that fluctuates over time (anxiety state). The research method used is a systematic review conducted by looking for articles related to the assessment of factors supporting anxiety before surgery in cardiac surgery patients who do not have a history of postoperative anxiety and morbidity through an electronic database search, namely ProQuest, and Google Scholar conducted in June – August 2022. **RESULTS AND DISCUSSION:** Patients with preoperative heart surgery have a moderate-high level of anxiety with many influencing risk factors. The extent to which each patient manifests his or her preoperative anxiety depends on many factors such as the patient's susceptibility to preoperative anxiety, age, gender, past experience with surgery, educational status, type and degree of proposed surgery, current health status, and socioeconomic status. . Patients with high postoperative pain have high morbidity and mortality, poor recovery, impaired wound healing, poor satisfaction, and longer hospital stays. **Conclusion:** Based on the results of the study in this systematic review, it was shown that patients undergoing cardiac surgery showed moderate to high levels of preoperative anxiety, with little medical information obtained, especially those related to surgery. Many factors influence the emergence of anxiety in preoperative cardiac patients, including fear of postoperative complications, lack of preoperative information to patients about surgical methods and procedures and the anesthesia they will undergo, not having strong social support, fear of death, fear of the unknown, the danger of doctor or nurse error, the need for blood transfusions, and the patient's comorbidities. Preoperative psychosocial factors are associated with poor short-term and long-term outcomes after cardiac surgery, so the detection and assessment of the patient's anxiety level before undergoing cardiac surgery should be carried out to consider interventions aimed at reducing anxiety in these patients.

INTRODUCTION

Spielberger defines anxiety as a negative or threatening emotion that a person feels in general, in the long term (anxiety traits), or in certain situations that fluctuates over time (anxiety states). Anxiety in patients can be caused by unusual situations, physical separation from family, no or little knowledge of medical interventions, diagnoses, or therapeutic methods, high operating costs, hospitalization, induction of anesthesia, postoperative pain, possible future disability, and death (Fathi et al., 2014).

Anxiety, strong behavioral and psychological reactions, the patient's perioperative experience is very severe and exacerbated by preoperative concerns about the underlying disease, anesthesia and the surgery to be performed. The prevalence of preoperative

anxiety development ranges from 11% to 80% in adult patients, and also varies among different surgical groups. Various studies conducted on patients scheduled for heart disease surgery, estimate preoperative anxiety as a major cardiovascular risk factor. This study shows that preoperative anxiety can increase the occurrence of complications in the immediate postoperative period, such as prolonged use of mechanical ventilation, higher incidence of hemodynamic disturbances, increased postoperative pain, analgesic consumption, increased anesthetic requirements, and also lower hospital return rates. Higher (Hernández-Palazón et al., 2018).

High levels of preoperative anxiety are associated with altered neuroendocrine responses, which may adversely affect the postoperative period. A recent study demonstrated that anxiety is associated with increased cardiovascular morbidity and mortality after coronary artery and valve surgery, with anxiety as an independent predictor of cardiovascular postoperative outcome (Hernández-Palazón et al., 2018). Previously, we demonstrated that patients with high preoperative anxiety had a higher mortality rate. significantly high four years after surgery. People who are socially isolated (eg, those who are single or have a small social circle) are at higher risk for morbidity and mortality according to recent research. Morbidity and mortality associated with myocardial infarction increase with the severity of symptoms of depression and anxiety, especially in patients with low educational and social support status.

In the preoperative period, patients awaiting cardiac surgery at that time may experience high levels of anxiety and depressive symptoms followed by impaired functional status, chest pain, shortness of breath due to worry, fear, and outcome of surgery. Symptoms of anxiety, stress, depression, and pain are disorders that commonly occur in coronary heart disease patients, including those undergoing coronary artery bypass surgery therapy. All of these factors exacerbate existing disease symptoms, adversely affect physiological parameters before and during anesthesia, can lead to a long recovery and impair quality of life after surgery.

Anxiety causes hypertension, increased heart rate, and may lead to bleeding and other possible postoperative side effects. On the other hand, long-term anxiety increases metabolism, oxygen consumption, and emotional conception of pain

To improve the patient's overall perioperative experience, anesthesiologists often administer preoperative anxiolytic drugs to calm patients before they enter the operating room. However, it has recently been shown that preoperative sedation with lorazepam compared with placebo or no premedication in patients scheduled for non-cardiac surgery does not improve the perioperative experience or overall patient satisfaction with daily postoperative days, but is associated with a longer time to extubation. and lower rates of early cognitive recovery. Therefore, it is necessary to evaluate or measure anxiety in patients who have scheduled cardiac surgery to identify factors that can contribute significantly to preoperative anxiety in order to get proper control.

Worry

According to the American Psychological Association (APA) Anxiety is defined as a feeling of tension, fear, nervousness, worry, discomfort, and high autonomic activity with varying degrees of intensity resulting from the anticipation of danger or threatening events or something unknown, which can affect physiological responses. The clinical manifestations of anxiety are irritability, isolation, nervousness, insecurity, feelings of uncontrollable worry, difficulty concentrating, difficulty sleeping, headaches, sweating, tingling, tachypnea, tachycardia, and hypertension. Cognitive disorders such as impaired

thinking, decision making, perception, and concentration are also a consequence of anxiety

The prevalence of preoperative anxiety in the western population was reported in one study to range from 12.6-76.7% in the western population (Kuzminskaitė, Kaklauskaitė, & Petkevičiūtė, 2019), while in Ethiopia it was recorded to range from 39.8-70.3%. produce various neuro-endocrine changes (eg release of catecholamines) in the body. This process ultimately causes an increase in heart rate, blood pressure, and the workload of the heart muscle. Excessive hemodynamic response related to electrocardiographic changes in patients with preexisting chronic hypertension

Cardiac surgery

The World Health Organization (WHO) shows that 17.8 million people died from cardiovascular disease or also known as Cardiovascular Disease (CVD) in 2017, and the global death rate reached 31%. In 2016, CVD caused more than 17.9 million deaths with a global mortality rate of around 31.0%. Furthermore, 85% of these deaths are from CVD (ie, heart attacks and strokes). In addition, it was reported that 56.7% of patients aged 65 years had received Coronary Artery Bypass Graft (CABG); this number is ultimately projected to increase to 67.3%. The total cost for CABG patients is over \$30,000. Therefore, the cost of medical care is significant for patients undergoing CABG (Yuenyongchaiwat, Buranapuntalug, Pongpanit, Kulchanarat, & Satdhabudha, 2020).

An estimated 2 million heart surgeries are performed worldwide each year (Fuhrman & Kellum, 2017). In general, patients require cardiac surgery because they have unbearable angina from coronary heart disease or severe dyspnea due to valvular heart disease. It is possible that the more severe the patient's disease, the worse the preoperative symptoms, and the less the patient can perform daily activities. Therefore, the severity of these symptoms will lead to the emergence of anxiety to depression.

METHOD RESEARCH

The research method used is a systematic review conducted by looking for articles related to the assessment of anxiety supporting factors before surgery in cardiac surgery patients who do not have a history of postoperative anxiety and morbidity. The literature search was carried out in June – August 2022 through electronic database searches, namely ProQuest, and Google Scholar.

The next international journal search was carried out by researchers through ProQuest with the keyword "Patients Anxiety of Preoperative Cardiac Surgery with No History of Anxiety" and the search year was limited from 2012 to 2022. The search for national journals was carried out through Google Scholar with the keywords "Patient Anxiety". prior to cardiac surgery with no history of anxiety" and the year search was limited from 2012 to 2022.

The journals and articles obtained were then filtered by title and abstract. The articles selected by the researchers were based on the desired criteria, namely anxiety in patients before heart surgery who did not have a history of anxiety. Meanwhile, journals that are not relevant to the research topic are excluded. The selected journals were evaluated using the inclusion and exclusion criteria of the study, based on the sorting of these criteria, appropriate journals were obtained for systematic review. The inclusion criteria used in the systematic review were journals published from 2022 to 2022, patients who will undergo cardiac surgery, before surgery, patients without a previous history of anxiety, English articles and the results obtained by the patient's level of anxiety.

The results of the Literature Search found 2,630 articles on ProQuest and Google Scholar data. Selecting the title and abstract of the article, then we got 1,537 articles. From this assessment, 1,518 articles were issued. There are 19 articles with complete manuscripts remaining. Of the nineteen articles, 9 articles were found that were suitable for systematic review.

RESULTS AND DISCUSSION

Factors influencing anxiety in patients before cardiac surgery

Surgery is a stressful event with physiological reactions in the body such as an increase in heart rate, breathing, blood pressure and other risk factors. In addition, psychological conditions and mental stress can affect physical illness and accelerate its worsening. The emergence of stress in patients occurs in several stages from diagnosis to recovery such as decision making for surgery, hospital selection, spending money, and postoperative care. Besides they face social pressures, they also face mental and physical pressures. In fact, the perception and acceptance of surgery as a medical treatment of last resort is shocking and affects all physical and mental aspects of their lives. Fear of death and tolerance of the consequences of surgery prompted them to avoid surgery, but because of the pain and difficulty breathing, they felt compelled to accept heart surgery. Hopelessness and disappointment arise with feelings of inadequacy and lack of interest in life and the patient becomes much inactive because of his hopelessness. Some patients, after being advised to perform surgery, are generally unable to realize their condition and do not make the right decisions (Mahdavi, Esmaeili, Heidari-Gorji, Mohammadi-Tazeh, & Cherati, 2016).

The extent to which each patient manifests his or her preoperative anxiety depends on many factors such as the patient's susceptibility to preoperative anxiety, age, gender, past experience with surgery, educational status, type and degree of proposed surgery, current health status, and socioeconomic status. Research conducted by Mulugeta et al. found that the most common factor responsible for preoperative anxiety was fear of postoperative complications

Evidence and documents show that psychological conditions cause changes in the body's immune system and cause disease in humans. Behavioral factors can change the level of susceptibility and suffering of disease through the function of the endocrine glands. Benson War, believes that high levels of hope are associated with physical, psychological health, high self-esteem, positive thinking, and good social relationships. Snider concluded in a study that low levels of hope predict the appearance of depressive symptoms. Jackson et al, concluded that expectations have a direct relationship with fitness or adjustment functions such as psychological fit, physical health and problem-solving skills.

Research conducted by Heshmati R et al, shows that spiritual well-being and hope can be important factors in determining the health level of anxiety for adults with coronary artery disease, and this deserves further exploration to help reduce anxiety levels for patients with coronary artery disease (Heshmati, Jafari, Salimi Kande, & Caltabiano, 2021). Mahdavi A et al said that patients undergoing open heart surgery have tolerated and experienced a lot of anxiety and have a low life expectancy, therefore, they need more easy-to-understand information followed by social and family support. Fathi M et al dalam penelitiannya mengungkapkan bahwa wanita mengalami lebih banyak kecemasan daripada pria. Hal ini sejalan dengan penelitian Mulugeta et al yang mengatakan bahwa

perbedaan tingkat kecemasan pada wanita lebih signifikan dibandingkan pria karena wanita sensitif terhadap kejadian menakutkan dan perbedaan fluktuasi hormon. Selain itu, wanita lebih mudah mengekspresikan kecemasan mereka daripada pria, dan perpisahan dari keluarga lebih mempengaruhi wanita.

Higher income levels and better social support can reduce anxiety levels. In addition, Fathi et al also found that patients with higher education levels, agricultural workers, self-employed, married or single patients had significantly lower levels of preoperative anxiety. A good doctor-patient relationship with the anesthesiologist can reduce anxiety levels.¹ Previous studies have shown that explaining preoperative information to patients about the surgical and anesthetic methods and procedures they will undergo will reduce patient anxiety (Mulugeta, Ayana, Sintayehu, Dessie, & Zewdu, 2018). Comorbidities and underlying diseases, and addictions also associated with anxiety levels.

Research by Bedaso A, et al found that not having strong social support, unexpected surgical outcomes, danger from doctor or nurse error, need for blood transfusion, and not being able to recover were found to be statistically significant for preoperative anxiety. Patients need to be assessed regularly for anxiety during the preoperative visit (Bedaso & Ayalew, 2019). in conjunction with the study of Wondmieneh A et al also found that fear of death, fear of the unknown, and fear of postoperative complications were significant predictors of the emergence of preoperative anxiety (Wondmieneh, 2020).

Effect of anxiety on postoperative cardiovascular morbidity

Several recent studies have investigated the relationship between preoperative anxiety and morbidity/mortality rates. These studies suggest that preoperative anxiety is an independent predictor of postoperative morbidity and mortality including late death using survival analysis. Anxiety-related morbidity and mortality are more significant in elderly patients and cardiac patients (Almalki, Hakami, & Al-Amri, 2017).

Several studies have shown that psychological factors such as anxiety and fear can influence an individual's response to surgical intervention and postoperative pain management. Patients with high postoperative pain have high morbidity and mortality, poor recovery, impaired wound healing, poor satisfaction, and a longer hospital stay (Tadesse et al., 2022). Research conducted by Kashif M et al revealed that patients with moderate anxiety levels to severe preoperative cardiac surgery experienced significantly higher pain scores in the postoperative period than the group with mild anxiety levels. Intraoperative and postoperative analgesic requirements also increased significantly (Kashif, Hamid, & Raza, 2022).

Preoperative psychosocial factors are associated with short- and long-term outcomes after cardiac surgery. There are several approaches to optimizing the patient's psychological status before surgery with promising effects on postoperative outcomes (eg, fewer complications, improved quality of life). Preoperative psychological preparation often aims to increase the patient's knowledge or social support and to modify and optimize disease expectations and beliefs. The term "psychological preparation" is not clearly defined. From our perspective, this includes a variety of techniques for changing cognition, emotion, or behavior. Types of preoperative psychological interventions that are useful for surgical patients such as providing procedural information (information about the process that describes what, when and how the surgery will take place), sensory information (describes what it will feel like), behavioral instructions (information about what will happen). what the patient should do such as

when the patient should return to usual activities), cognitive interventions (aimed at changing the way the patient thinks about surgery; may include developing different perspectives and distractions), relaxation techniques (systematic instruction of physical and cognitive strategies to promote relaxation and feelings of calm), hypnosis and emotion-focused interventions (aimed at enabling the patient to regulate and manage emotions such as understanding and accepting emotions).

Mihalj M et al. revealed in his research that a comprehensive preoperative assessment for evaluation of the patient's condition before undergoing cardiac surgery and joint decision making between the patient, surgeon and anesthesiologist before surgery regarding the risks, benefits, treatment goals, values and expectations can improve postoperative outcomes. In joint decision making, all treatment options, scientific evidence, and the patient's health care goals should be discussed in a multidisciplinary manner before starting treatment. Ideally, this discussion occurs early in treatment, initiated by the patient's primary physician or cardiologist, followed by the involvement of the cardiac surgeon and anesthesiologist. Medical treatment options and interventions as well as the pros and cons of each expert need to be discussed. Health care providers need to understand the patient's current physical and mental condition, overall prognosis, expectations about treatment, and short- and long-term goals. Shared decision making is a multidisciplinary approach in which physicians and patients discuss the available evidence about clinical care, while patients are supported to make informed decisions about their care, so that an informed preference can be reached (Mihalj, Carrel, Urman, Stueber, & Luedi, 2020).

CONCLUSION

Based on the results of the study in this systematic review, it showed that patients undergoing cardiac surgery showed moderate to high levels of preoperative anxiety, with little medical information obtained, especially those related to surgery. Many factors influence the emergence of anxiety in preoperative cardiac patients, including fear of postoperative complications, lack of preoperative information to patients about surgical methods and procedures and the anesthesia they will undergo, not having strong social support, fear of death, fear of the unknown, the danger of doctor or nurse error, the need for blood transfusions, and the patient's comorbidities.

Anxiety is a temporary emotional state that arises in patients who are about to undergo cardiac surgery procedures. Preoperative psychosocial factors are associated with poor short-term and long-term outcomes after cardiac surgery, so the detection and assessment of the patient's anxiety level before undergoing cardiac surgery should be carried out to consider interventions aimed at reducing anxiety in these patients.

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