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Review: Anxiety and Quality of life in Patients with Myocardial Infarction

Bimala Panthee[1], Charuwan Kritpracha[2]

Obejctive: Anxiety and reduced Quality of Life (QoL) are commonly reported in patients with myocardial infarction (MI) for long years and has a great interest to improve patients' quality of life. Almost all of the patients with MI will have anxiety to some level. Persistent anxiety for long period has detrimental effect on quality of life. Therefore this study is aimed to find out the effect of anxiety on quality of life of patients with MI.

Methods: Published literatures were searched using individual or combination of keywords: anxiety, quality of life and myocardial infarction in following databases: PubMed, CIHNAL, Proquest, and Google Scholar. The full texts were obtained from the journal homepage using Prince of Songkla University and those that could not be accessed from this University were obtained from the University of Tokyo network. Papers which were not accessible from these two networks were excluded from the review.

Results: Majority of studies found that patients with MI reported high level of anxiety persisting over months to years affecting QoL. Some studies showed that anxiety was associated with complications and all of the study showed that anxiety was associated with decreased quality of life. Different studies measured anxiety and quality of life differently which might have affect the results of the studies and most of the studies did not consider it and lack to correlate the level of anxiety in each dimension of QoL is noted. High level of anxiety was correlated with the poorer quality of life. Therefore, the researcher should note that which level of anxiety the patient is suffering from because mild anxiety is helpful to focus attention; to learn the stressful situation and solve the problems to protect him/her by themselves. Moderate level of anxiety reduces the patient's concentration but facilitates to seek information and solve problems with assistance. Severe anxiety results in difficulties in thinking and reasoning and disturbs physiological functioning. Therefore, it is equally important to consider the correlation between mild, moderate anxiety to QoL.

Conclusion: Anxiety affects negatively in QoL in patients with MI. Identification of the level of anxiety can help plan effective nursing management of MI patients.

[1] Masters of Nursing Science Student (International Program) Corresponding author email: blpanthee@gmail.com,

[2] Lecterur Medical Nursing Department, Faculty of Nursing Prince of Songkla University, Hat Yai, Thailand

Introduction

Myocardial infarction (MI) is one of the cardiovascular life threatening diseases. Incidence of MI is increasing throughout the world. By the year of 2020 the incidence rate is expected to increase by 120% for women and 137% for men in developing countries compared with 30-60% in developed countries (World Health Organization [WHO], 2008). MI, popularly called heart attack, is the necrosis of heart muscle resulting from ischemia (Kumar, Abbas, Fausto, & Mitchell, 2007).

The diagnosis of MI affects both physical and psychosocial aspects of patients' life (Roebuck, Furze, & Thompson 2001; Brink, Karlson, & Hallberg, 2002; Hanssen, Nordrehaug, Eide, Bjelland, & Rokne, 2009). Previous study found that patients after MI reported the impairment in their daily lives, such as, household work, physical activities, such as climbing stair, sexual activities and hobbies, unable to perform the same level of work that they can do before the diagnosis of disease, and low mood (Brown, et al., 1999). Some patients could not return to work on time as they were expected to. Thus physical and emotional disturbance of an acute myocardial infarction can have permanent and, in many cases, damaging effects on the lifestyles at post MI (Brown, et al) thereby decreasing overall quality of life for long run.

On the other hand MI is frequently accompanied by serious complications such as life threatening arrhythmia e.g. ventricular tachycardia, atrioventricular block, ventricular fibrillation, ventricular septal rupture, rupture of ventricular free wall, heart failure, infarction extension (Garas & Zafari, 2010). Less known is increased risk for anxiety: individuals with MI are as much as 26% more anxious than patients diagnosed with a psychiatric disorder (Moser & Dracup, 1996).

The initial psychological reaction to an MI is usually anxiety. Research findings consistently has been indicating that between 18.5% and 31% of patients report anxiety shortly after the MI with high incidence rate 70%-80% among patients with previous experience of an acute cardiac event (Moser & Dracup, 1996; Frasure-Smith, Lesperance, Juneau, Talajic, & Bourassa, 1999; Newman, 2004). Anxiety affects in adherence to lifestyle modification such as dietary behavior changes, physical exercises, and regular follow up, proper medication as recommended by physician, timely return to work (Mayou et al., 2000., Moser, 2007., Moser & Dracup, 1996). Consequently, persistent anxiety after MI has negative effect for the prognosis of the disease and overall quality of life (Lane, Carroll, Ring, Beevers, & Lip, 2001; Shibeshi, &

Young-Xu, 2007). Therefore, psychological responses to an MI, such as anxiety warrant attention.

On the other hand, patients with MI, themselves, have to regulate their life style modification. Overall management goal is to prevent acute and chronic complications while preserving a good QoL. The co-occurrence of anxiety symptoms and MI are responsible to decrease QoL of patients with MI. When this is indeed the case, the importance of an increased awareness and treatment of anxiety symptoms within the patients with MI is stressed. Anxiety may thus be an important determinant of QoL of patients with MI. Therefore, a study on the impact of anxiety on QoL in patients with MI is warranted. This review aims to describe the current knowledge on the association of anxiety with various aspects of QoL of patients with MI.

Methods

A literature search using the databases MEDLINE, PubMed, CIHNAL, Proquest, Google Scholar was performed to identify published research studies that evaluate the effect of anxiety on OoL in patients with MI. Only full papers were included in this review. The full texts were obtained from the journal homepage using Prince of Songkla University and those that could not obtain from this network were obtained from the Tokyo University network. Papers which were not accessible from those two networks were excluded from the review. The terms individual or combination of keywords anxiety, emotion, quality of life and myocardial infarction were used to search in the databases. The search was limited to articles in English and full text.

Anxiety

Anxiety is negative emotion that occurs in response to perceived threats & characterized by perceived inability to predict, control of gain when confronted with a threat (Kunbzansky, Kawachi, Seiss, & Sparrow, 1998). There are two types of anxiety; state and trait anxiety. State anxiety is transient in nature and involves the arousal of an individual's autonomic nervous system and/or feelings of worry, nervousness, tension, and apprehension (Spielberger, 1983). Trait anxiety is conceptualized as a personality trait that predisposes an individual to respond to a stressful situation with an anxiety response. It is more stable and long-term than state anxiety (Spielberger, 1983). It is important to know both state and trait anxiety of the individual because the stronger the anxiety trait, the more probable that a person will experience state anxiety

reaction in a threatening situation and the more likely this reaction will be relatively intense (Spielberger, 1983).

Quality of Life

Quality of life represents an individual's perception of sense of well-being that comprised of subjective indicators such as well-being and satisfaction with life and objective indicators, such as functional status (Hass, 1999). It can be measured in a reliable and valid manner by use of self-reported questionnaires that should be related to cardiac health problems, which can be categorized in two main groups; generic and disease specific questionnaire. Generic questionnaires measure quality of life in general terms, independent of the presence of any disease (Oksuz, & Malhan, 2006). The example of generic measures are; the Nottingham health profile, sickness impact profile, and short form 36 (SF-36) - the SF offer the most reliable, valid, and sensitive assessment of quality of life. However, a few of the SF-36 subscale lack a sufficient degree of sensitivity to detect change in a patient's clinical condition. Disease specific questionnaires measure the consequences of a specific disease for the QoL (Oksuz, & Malhan). The example to disease specific measures are; the quality of life after myocardial infarction questionnaire, Seattle angina questionnaire, the quality of life index cardiac version, the angina pectoris quality of life questionnaire. According to the evidence available, quality of life after myocardial infarction questionnaire is preferred to other disease specific questionnaire (Dempster & Donnelly, 2000).

Results

Concept of anxiety

The conceptual view of anxiety is a multidimensional phenomenon with different definitions of anxiety. According to Freud, anxiety itself needs no description; everyone has personally experienced anxiety at some time or other and it is defined as something felt a fundamental, unpleasant affective state or condition. American Psychological Association [APA], (1975) definition of anxiety is apprehension, tension, or uneasiness which stems from the anticipation of danger, the source of which is largely unknown or unrecognized. Spielberger (1983) defined anxiety as an unpleasant emotional state or condition which is characterized by subjective feelings of tension, apprehension, and worry, and by activation or arousal of the

autonomic nervous system. When autonomic nervous system is stimulated physical signs can be measured objectively such as increased heart rate, increased pulse rate, increased blood pressure, dilated pupils etc. Similarly, Lazarus and Folkman (1984) considered anxiety as an emotion triggered by the appraisal of threat. Lewis (1970) defined anxiety as an emotional state with the subjectively experienced quality of fear as a closely related emotion and pointed out that the emotion is unpleasant, negative, is out of proportion to the threat, is future directed, and involves both subjective aspects and manifest bodily disturbances. Therefore, anxiety is a subjective experience of the individual appraised as negative emotion that occurs in response to perceived threats that occurs from internal or external sources and can be real or imagined.

Level of anxiety after myocardial infarction

Anxiety after MI is common as MI is a life threatening disease. Most of the MI patients showed high level of anxiety immediately after the diagnosis of the disease both in western and eastern countries namely; Australia, England, Japan, South Korea, & United States (De Jong et al., 2004). Additionally, anxiety after MI was at peak at the time of admission and decreased gradually over 2-3 days of admission but again rose just prior to discharge and persisted for years (Moser, 2007; An et al., 2004). Similarly, in a study of Norwegian population with MI, higher level of anxiety in initial phase (20%) was reported. However, after 3, 6, 12, 18 months high level of anxiety was to 16%, 16.1%, 16.5%, 14% and 17% of patients respectively (Hanssen et al., 2009). Therefore, 17% of patients still facing high level of anxiety after 18 months of disease.

Furthermore, in the study of Frazier et al (2002) 30% of patients with MI reported no anxiety, 23% indicated mild level of anxiety, 25% were on moderate level of anxiety and 22% were on high (extreme) level of anxiety. Even 30% of patients had no anxiety 22% of patients had still high level of anxiety therefore attention should be given in those patients. In addition, women were found more anxious than men (Moser, 2007). The patients who were living alone showed higher level of anxiety than the person who live with their family (Khul Fauerbach, Bush, & Ziegelstein, 2009).

Moreover, the low socio-economic patients were more anxious than higher economic groups (Chan, Gordon, Chong & Alter, 2008). Additionally, the patients who had previous experience of MI were more anxious. In summary, patients with MI from each country either

western or eastern country reported high levels of anxiety, suggesting that anxiety after myocardial infarction is a universal phenomenon giving negative impact on prognosis and QoL of patients with MI.

Concept of Quality of Life

The concept of quality of life (QoL) was identified in Greek philosophy and continued throughout history following World War II**.** WHO defined QoL as individual's perception of their position in life in the context of the culture and value system where they live in and in relation to their goals and expectations. It is a broad concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationship, personal belief and their relationship are salient features of their environment (WHOQoL Group, 1994).

Hass (1999) proposed the definition of QOL as a multidimensional evaluation of an individual's current life circumstances in the context of the culture and value systems in which they live and the values they hold. Ferrans has the similar concept of quality of life. We can see three level of taxonomy of quality of life in Ferrans's work. The first level is preview of health care, the second level is the impact of illness on quality of life and the third is the quality of life during illness (Ferrans, 1996).

Quality of Life in Patients with MI

MI is combined with a significant and remarkable reduction in HRQL compared with the general population, the main impairment occurred in the dimensions pain/discomfort, usual activities, and most notably anxiety/depression. The relative impairment was noted compared with general population and it was further decreased with higher ages (Schweikert et al., 2009). Additionally, health related quality of life was negatively affected five months after acute MI in both men and women, but women scored more poorly on the physical dimension than did men (Brink, Karlson, & Hallberg, 2002). Similarly, Agwall, Berglund, & Henareh, (2004) reported that female MI patients had significantly lower quality of life than male despite similar age, treatment, and hemodynamic and laboratory data.

Effects of anxiety in patients with MI

Persistent high level of anxiety has negative effect for the patient with myocardial infarction (Crowe, 1996; Moser, 2007). Patient's anxiety causes lots of problem in dealing with the disease (Lane et al., 2001; Sullivan, 2000). Severe anxiety causes disabilities and affects the physical and emotional functioning in patients (Ferrans & Powers, 1985) and this affects quality of life and disrupts their functioning (Sullivan, 2000). Patients with elevated anxiety have higher rates of subsequent development of coronary heart disease than non-anxious patients, independent of other risk factors.

Indeed, anxiety may be more strongly associated with the onset of cardiac disease than depression. In particular, worry is a component of anxiety that appears to be especially associated with cardiac disease. Among patients with acute MI, anxiety may lead a detrimental cardiac events and complications, several studies have found that elevated anxiety after MI has been independently associated with in-hospital cardiac complications, longer- term cardiac complications and reduced quality of life (De Jong et al., 2004; Moser, 2007). Moser and Dracup (1996) found anxiety to be strongly associated with complications after acute myocardial infarction. Nearly 20% of high anxious patients suffered from complications, compared to 6% of low anxious (Moser). Furthermore, the patients who were more anxious tend to return to work late, even if they return to work they did not perform the activities as they did before, did not adhere to life style modification and medication (Crowe, Runions, & Streiner, 1996).Therefore, all those factors affected their overall quality of life.

The Association of Anxiety with Quality of Life in patients with MI

As the evidence above anxiety persists for month to beyond years. It is important to find out the relationship in the respect of levels of anxiety to quality of life. Not only the high level of anxiety but how far the mild and moderate level of anxiety working on QoL should be considered. In general, most studies showed a moderate, negative association of high level of anxiety on overall quality of life of patients with MI (Brink et al., 2001). Anxiety was significantly negatively correlated to overall quality of life and domain specific quality of life (Brink et al.). Anxiety symptoms were most strongly associated with role function and social function and mental health (worse QoL) at 6 year to those with most anxious or distressed at one year (Sullivan, LaCroix, Spertus, & Hecht, 2000). Anxiety hinders self- care activities and the

patients who are overly anxious often cannot learn or act on information about lifestyle changes and have difficulties adhering to prescription of medication, activity, and diet. Persistent anxiety is predictive of disability, increase in physical sign and symptoms and worse functional status. Anxious patients with myocardial infarction return to work at a slower rate or not at all compared with any anxious patients.

Furthermore those who return to work were suffered from psychological distress in comparison to general working people (Brisson, et al., 2005). Anxiety also interferes with patients' return to sexual activity after acute cardiovascular events. Patient with high anxiety score reported lower sexual satisfaction (Steinke & Wright, 2006). Patients with high level of anxiety after MI reported disturbance in the attainment of important higher goal (Boersma, Maes, & Joekes, 2005). In the study of Nekouei, Yousefy, Nekouei, & Sadeqhi (2009) the presence of anxiety showed moderate to severe worse quality of life of patient with MI. Therefore, it is very important to rule out anxiety in early phase of patients with MI to make their good quality of life.

Discussion

This review shows that anxiety symptoms in individual with MI are associated with a worse quality of life. The majority of studies showed that anxiety affected physical, social, spiritual aspect of life on patients with MI. In addition, there is evidence that anxiety symptoms can predict the development of functional limitation in the future, suggesting a causal relationship between anxiety symptoms and functional disability (Sullivan et al., 2000).

All studies in this review show a negative association of anxiety symptoms with at least one aspect of quality of life in patients with MI. The consistency of this finding strongly supports the hypothesis that individuals that have both anxiety symptoms and MI have a worse quality of life. Therefore, the available studies suggest that anxiety indeed precede a decrease quality of life. In addition to this, the presence of anxiety is also related to worse self care, reflected by worse adherence to diet and exercise advice, use of medication, life style modification (Sullivan et al., 2000; Roebuck et al., 2001). This study stresses the importance of integration of emotional issues in the management of patients with MI. The presence of anxiety thus has major consequences for individuals with MI. It provides glimpse awareness for anxiety in patients with MI. This can be achieved by including screening instruments for anxiety as part of regular treatment of patients with MI. However, in a study of Nekouei et al. (2009), there was variation

in the level of anxiety. Only 17% of patients had higher level of anxiety at 6 years after the disease having the worse quality of life. Consequently, longitudinal studies showed decreased quality of life after 4 weeks to beyond years of disease (Brink et al., 2002; Agewali, Berglund, & Henareh, 2004). Therefore, it is equally important to identify the level of anxiety and their quality of life. It is because mild level of anxiety is helpful to focus attention; to learn the stressful situation and solve the problems to protect him/her by themselves. Moderate level of anxiety reduces the patient's concentration but facilitate to seek information and solve problems with assistance. Higher level of anxiety results in difficulties in thinking and reasoning and disturbs in physiological functioning (Videbeck, 2003). If the level of anxiety is mild and moderate, how far it is working in patients' quality of life should be identified in longitudinal study.

Conclusion

In conclusion, this review shows that higher level of anxiety is associated with an impaired quality of life of in patients with MI. Anxiety symptoms even predict the development of functional limitations and as a result patients cannot take care of themselves. Therefore, screening for anxiety should be integrated in standard care of patients with MI.

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