

Living With Cardiovascular Disease: The Connection Between Mental Health and Quality of Life

Honors Thesis

**Presented in Partial Fulfillment of the Requirements
For the Degree of Bachelor of Science in Nursing**

In the Maguire Meservey College of Health and Human Services
at Salem State University

By

Pascale Desir

Nancy Ebersole PhD, RN
Faculty Advisor
School of Nursing

Commonwealth Honors Program
Salem State University
2022

Abstract

Cardiovascular disease is the leading cause of death worldwide. Depression and anxiety have been identified as common factors occurring with advanced heart disease. An unhealthy lifestyle, such as poor dietary habits or improper coping mechanisms is correlated with the onset of anxiety and depression. Patients with cardiovascular disease that are faced with various stressors as well as depression and anxiety are at risk for poor prognosis of their disease and an overall decreased quality of life. A systematic review was conducted using the CINAHL PLUS database to determine what mental health factors affect the outcome for individuals with cardiovascular disease. The results of this systematic review of seven academic articles outlined five themes that influence the quality of life for individuals with cardiovascular disease. The themes are (a) life satisfaction; (b) socioeconomic status and emotional state; (c) anxiety and fear; (d) stress and distress; and (e) depressive disorders. These results help to identify specific interventions that health care providers should implement when caring for patients with cardiovascular disease. Healthcare professionals should continuously monitor the mental status of their patients with cardiovascular disease, in order to treat their patients. By doing so this has the potential to reduce the progression of heart disease and improve their overall quality of life.

Table of Contents

Abstract.....	i
Acknowledgements.....	iii
Introduction.....	1
Background.....	1-4
Methods.....	4-5
Results.....	6
Life satisfaction	6-7
Socioeconomic status and emotional state	7
Stress/ distress	8
Anxiety and fear.....	8-10
Depression.....	10 -11
Discussion.....	11-12
Conclusion.....	12-13
References.....	14-16

Acknowledgements

I would like to thank Dr. Nancy Ebersole for her continuous support and guidance in terms of my thesis development. I would also like to thank Professor Scott Nowka for his support and guidance and for helping me navigating through the honors program throughout the years. I would like to thank my honors classmates for always being there to answer my questions and constantly checking in with me in regard to writing my thesis. Lastly, I would like to thank my friends and family for their unconditional love and support throughout these past four years.

Depression and anxiety are both risk factors for morbidity and mortality for individuals with cardiovascular disease (CVD) and have been identified as the leading causes of advanced heart disease. It is quite common to see depression and anxiety manifest in patients with cardiovascular disease, due to the increased levels of stress that these individuals deal with, such as financial obligations, disease management, unexpected events, and difficulty coping. Therefore, a growth in depression and anxiety for individuals with CVD will be more detrimental to quality of life.

In the healthcare profession, it is vital that nurses complete both a physical assessment as well as a psychosocial assessment in order to more accurately identify their patients' needs. When a person is diagnosed with an anxiety disorder or depression, they may be reluctant to complete basic needs, which can ultimately lead to other health problems. A person who is depressed or anxious may have an increased or decreased appetite, which can lead to nutritional problems. They may also be reluctant to complete activities of daily living or unable to make wise choices when making decisions that can affect their health resulting in worsening of their current health status. It is important to identify and treat depression and anxiety in patients with CVD, this will improve their prognosis and overall quality of life.

Background

Cardiovascular disease is an umbrella term that is used to describe several heart conditions and cardiac events such as coronary artery disease, heart failure, congenital heart disease, deep vein thrombosis, dysrhythmias, peripheral artery disease, valvular disease and more. Cardiovascular disease is the leading cause of death worldwide. In 2019, nearly 17.9 million people died from cardiovascular disease, representing 32% of

global death. In that same year, CVD was responsible for 38 percent of the 17 million premature deaths (before the age of 70) caused by noncommunicable illnesses (World Health Organization, 2021). Risk factors that are associated with CVD include smoking, hypertension, diabetes, chronic kidney disease, poor diet, and a lack of exercise. Many of these factors account for plaque buildup in the arteries, also known as atherosclerosis. In relation to the known risk factors of cardiovascular disease, Black and Latinx populations have a higher prevalence of obesity, diabetes, and hypertension than the white population (Gordon & Hsueh, 2021).

Cardiovascular disease, previously thought to be primarily a "male" condition, has become the leading cause of mortality in women worldwide, including in many low- and middle-income nations. In 2017, CVD made up 32% of deaths in US women, and a comparable percentage all throughout the world accounting for greater than 450,000 deaths (Arnott et al., 2019). Women who are diagnosed with CVD are more likely to have more comorbidities and worse outcomes than men. In terms of early diagnosis between men and women, women are less likely to get diagnosed with CVD in a timely manner. Many women, especially those who come from ethnic/racial minorities, are unaware of their predisposition to heart disease. This lack of awareness is especially prevalent among young female populations (ages 25–34), who express time restrictions, stress, and a generalized low perception of risk to themselves (Arnott et al., 2019).

There is evidence to show that there is a discrepancy in treatment plans for CVD between men and women. Previous research has found that women checking into a hospital with acute coronary syndrome were shown to have more comorbidities, yet their treatment plans were less likely to incorporate coronary angiography or revascularization.

Women were less likely to be prescribed the suggested secondary preventive drugs and given fewer referrals to cardiac rehabilitation after they were discharged. There are poorer risk factor assessment for secondary prevention such as screenings, prompt medical management and risk reduction for women, than men (Hyun et al., 2020).

Depression is a medical condition that affects your feelings, thoughts, and actions. Depression for some people can last for long periods of time that interferes with a person's normal, everyday performance. Over 16 million individuals in the United States suffer from depression yearly. On average, one in every six individuals will experience depression at some point in their lives (CDC, 2022). Signs and symptoms of depression include but are not limited to the feeling of sadness or uneasiness, sudden uninterest in formerly enjoyable activities, irregular sleep schedule, overeating or undereating, aches, pains, headaches, or stomach issues that do not seem to go away despite therapy (CDC, 2022). Individuals who are affected by depression often suffer from anxiety disorder as well.

It is normal for people to have occasional worrying or some anxiety throughout life. Anxiety disorders on the other hand are more than occasional worrying or fear. Anxiety is constant for those with anxiety disorders and can worsen over time. Symptoms might make it difficult to do regular daily tasks such as work, go to school, complete assignments and maintain relationships according to the National Institute of Mental Health (2022). Anxiety disorders is an umbrella term that comprises of panic disorders, several phobias, social anxiety disorder as well as generalized anxiety disorder. relationships according to the National Institute of Mental Health (2022). When a person has generalized anxiety, they can experience tachycardia, irritability, restlessness,

insomnia and more which can greatly affect their daily living. People who experience anxiety and depression are more likely to cope in unhealthy manners therefore it is important that treatment options are available.

Detecting the effects of depression treatments on cardiac morbidity or mortality have been poorly studied and the benefits of treating it has been nonconclusive. As a result, some have questioned whether treating depression to improve cardiac outcomes is beneficial (Carney et al., 2016). However, Secondary analysis has shown that patients whose depressive symptoms were treated did have a better outcome and a higher chance of survival compared to patients who showed no improvement in their depressive symptoms. The patients that do not respond well to depression treatments usually have a higher risk for additional cardiac events thus increasing the risk for morbidity and mortality (Carney et al., 2016).

The onset of anxiety and depression are closely associated with unhealthy lifestyles such as poor dietary habits or unhealthy coping mechanisms. Depression and anxiety are also associated with socioeconomic inequalities such as unemployment, low income and poor education. Patients with CVD are often burdened with several hospital visits, countless medications, as well as different limitations both physically and financially. All these stressors contribute to the poor emotional health that manifests in these patients. This emotional distress leads to ineffective clinical outcomes for this population such as relapse, rehospitalization and several other unfavorable events.

Methods

A systematic literature review was conducted using the CINAHL database in order to determine the relationship between mental health disorders such as anxiety and

depression in relation to cardiovascular disease. Using the advanced database they key words “predict” and “cardiac disease” and “anxiety” and “depression” were inserted and 203 articles were found. The search was then narrowed again using the key words “cardiac disease” and “cardiac rehab” and “anxiety” and “depression”, 106 articles were found. The same narrowing process was applied again using the key words “comorbidities” and “anxiety” and “depression” and “cardiac disease”, 37 articles were found. Lastly, the search was narrowed by date for a total of 9 articles found. Two articles were not used as one was specific to metabolic syndrome and the other one was specific to congenital heart conditions. In total 7 articles were used for this study. Figure 1 below outlines the process that was used to obtain the results for this systematic review.

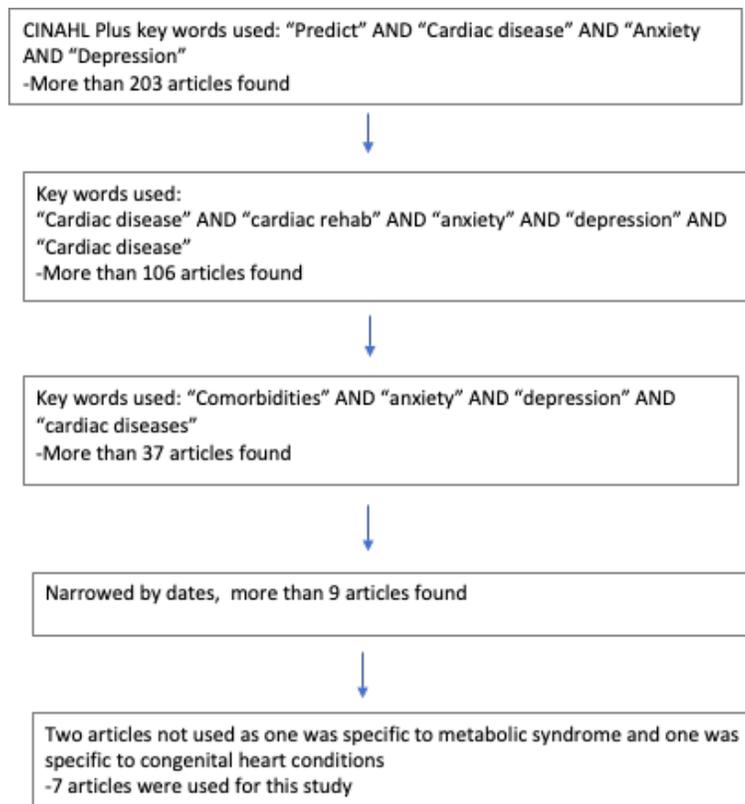


Figure 2; Graphic article key words

Results

The results of this systematic review of several academic articles outlined five themes that influence the quality of life for individuals with cardiovascular disease. The following themes were identified by several authors in relation to the prognosis of heart disease. The mentioned themes are (a) life satisfaction (b) Socioeconomic status and emotional state (c) anxiety and fear (d) stress and distress (e) depressive disorders.

Life satisfaction

The degree of resemblance between a person's dreamed life and the life lived is measured by life satisfaction which is a cognitive representation of subjective well-being (Mei et al., 2020). Life satisfaction is thought to be a health protective factor, however, poor health may have a negative impact on life satisfaction. Poor satisfaction with life decreases a person's sense of well-being which can lead to the development of negative emotions such as depression and anxiety (Mei et al., 2020). Life satisfaction and the mediators (depression or anxiety) were added as independent variables in the model and were demonstrated to have a substantial impact on quality of life (Mei et al., 2020). The study presented identified that life satisfaction could be associated with self-care, usual activities, and anxiety/depression (Mei et al., 2020). Life satisfaction is associated with self-care and the ability to perform routine activities. Feeling capable of caring for one's health may play an important role in terms of coping with the stresses of having a chronic condition like congenital heart disease (CHD). Self-efficacy is directly linked to perceived health competence (PHC) or how capable individuals feels in managing their health and achieving health related goals (Leslie et al., 2020). General self-efficacy was

associated to a decreased amount of anxiety and depression as well as a higher quality of life (Leslie et al., 2020).

Socioeconomic status and emotional state

Socioeconomic status has been linked to depression and anxiety in patients with cardiovascular disease. The influence of both depression and anxiety as well as CVD can be adversely affected by socioeconomic variables (Kollia et al., 2017). A recent study has shown that financial concerns and interpersonal problems were the most often reported stressors in the 12 months leading up to the study enrolment, with 59 percent of participants reporting both (Carney et al., 2016). The only stressors identified at baseline that were linked with depressive outcomes were financial concerns. During the 16-week intervention, 31% of participants reported financial difficulties, 36% reported interpersonal issues and 22% identified physical illness as a cause of stress. Experiencing financial difficulties throughout the intervention was once again the stressor that was the most significantly associated with the development of depression (Carney et al., 2016).

Given that financial difficulties in the 12 months prior to the study as well as during the study was the most significant predictor of depression outcome in patients with coronary heart disease suggests that financial concerns may have a stronger influence than unfavorable medical events on depression treatment and results. Although treatment for depression was given to the participants at no cost, some individuals with CVD have been forced to retire, have lost their jobs and have had to cut down their work hours. Despite having insurance such as Medicare and Medicaid, some patients are in debt due prolonged unemployment or an accumulation of medical bills. (Carney et al., 2016).

Stress/ distress

Impaired stress response can lead to a complex cycle of cardiac pathological processes such as increased chronic inflammation and lipid dysregulation, insulin resistance, and endothelial dysfunction, which can worsen atherosclerosis and worsen overall CHD progression (Shen et al., 2019). Psychological distress has been linked with depression and the occurrence of cardiovascular disease. Based on the “psychological distress” measure, there was a combined effect of depression and anxiety on CVD incidence. Individuals who acquired CVD at a later time in the decade had higher scores of psychological distress. This link was greater in women than in men and in individuals with low or moderate socioeconomic status who did not follow a Mediterranean dietary pattern in relation to the remainder of the participants (Kollia et al., 2017).

A correlation between stressful life events and manifestation of depression in patients with coronary artery disease. The number and severity of stressful life events reported by participants in the 12 months leading up to baseline did not predict post treatment depression levels. Stressors encountered during the first and last 8 weeks of intervention, on the other hand, were predictive of post treatment depression rating with increased stress scores indicating higher post traumatic depression scores (Carney et al., 2016). According to the findings of the study, stressors may also reduce the efficiency of depression therapy, limiting the likelihood of lowering the risk of CVD (Carney et al., 2016).

Anxiety and fear

A correlation between anxiety and fear in relation to cardiovascular disease and overall quality of life. One study showed that in patients with congenital heart disease,

lower perceived health competence (PHC) was associated with increases symptoms of anxiety and depression, whereas general self-efficacy predicted lower anxiety and depressive symptoms as well as a higher quality of life (Leslie et al., 2020). The lower levels of PHC related to the high levels of anxiety and depressive symptoms predict anxiety and depressive symptoms years after assessing these symptoms at baseline and functional impairment during follow up visits. This suggests that people who are more competent and involved in handling their own medical obligations are less likely to experience anxiety or depression symptoms that is associated with having a chronic medical illness such as cardiovascular disease, potentially due to better emotional health management as well (Leslie et al., 2020). Life satisfaction has been shown to be adversely associated with depression and anxiety and also that there is a strong negative relationship between depression and anxiety in relation to quality of life (Mei et al., 2020).

The effects of anxiety in relation to physical health in heart disease patients. Over the span of 12 months as anxiety increases, physical functioning decreases (Shen et al., 2019). It was also observed that anxiety and perceived stress as compared to depression were no less significant in predicting physical health deterioration over a 12 months period. In general, psychological distress, regardless its source appears to be destructive and damaging to patients with coronary heart disease, especially in regaining health and maintaining physical function (Shen et al., 2019). Distress disorder were compared with fear disorder and showed that participants with pure distress disorder and with pure fear disorder were at substantially increased risk of heart disease (Roest et al., 2017). Fear disorders such as phobias, post-traumatic stress disorder (PTSD) and panic disorder begin

at an early age and often continue over time, indicating that anxious people are exposed to factors that might cause heart disease over time. This may be a reason why fear disorder has a larger negative correlation with heart disease than distress disorder (Roest et al., 2017). After controlling childhood challenges, sociodemographic factors as well as comorbid mental disorders it was apparent that fear and distress disorders were predictive of future self-reported heart disease. However, the estimates for pure fear disorder and fear preceding distress disorder were the greatest (Roest et al., 2017).

Depression

As previously reported depression and anxiety have a negative relation to quality of life (Mei et al., 2020). It was confirmed that having higher perceived health competence decreases anxiety and depressive symptoms years later (Leslie et al., 2020). It was concluded that as depression increases, physical function declines. After correcting for baseline physical functioning and variables, both the baseline and its increase substantially predicted a drastic reduction in physical functioning at 12 months (Shen et al., 2019).

Individuals with atypical major depressive disorder (MDD) or double depression showed that may be a strong predictor of new-onset CVS. The authors indicate that participants with atypical MDD had more than double the risk of CVD than those with who did not have a depressive condition. Individuals with only dysthymic disorder or nonatypical MDD were also more likely to have CVD compared to nondepressed adults. This shows that the atypical MDD participants had a higher risk for CVD than the compared groups that were composed of dysthymic disorder only and nontypical MDD (Case et al., 2017).

Discussion

Based on the themes presented in the results, there are specific interventions that healthcare providers can do to either prevent cardiovascular disease, or limit the complications associated with CVD and improve the overall quality of life for these individuals. Socioeconomic factors and financial instability are a cause of stress and decrease a patient's life satisfaction. Socioeconomics problems can have a negative effect on both cardiovascular disease as well as anxiety and depression. Patients accumulate medical bills or lose their jobs because of being in the hospital for a prolonged period and in turn end up in debt. Therefore, nurses should collaborate with social workers to identify resources to help their patients with their financial obligations.

Given that perceived health competence (PHC) and over all increased self-efficacy has been shown to decrease the occurrence of anxiety and depression in CVD patients, health care providers should focus on assisting patients to improve their confidence and over all self-efficacy when it comes to managing their own disease in order to promote independence and further enhance emotional well-being. Although cardiac rehabilitation programs have been successful when using cognitive/behavioral techniques to improve self-efficacy, the same could be executed in all hospital settings and clinics. Nursing staff, physical therapy, nutritionists, psychologists, physicians and even social workers can all come together to create a multidisciplinary team to teach strategies and provide re-enforcements and reassurance when needed for improving their patients PHC and self-efficacy and help their patients engage in self-care and overcome barriers that may make it difficult for them to be involved in their own care.

In addition to improving their PHC and self-efficacy, healthcare professionals should also assist their patients to improve their physical health as well as their life satisfaction. Life satisfaction is adversely related to anxiety and depression. As life satisfaction decreases, anxiety and depression increase and quality of life, both physical and mental, decreases. Health care providers must continue to talk to their patients and learn more about their quality of life and provide methods or resources to improve their quality of life. Nurses must also collaborate with physical therapy well as to improve their overall physical function. One way that healthcare providers can help improve a patient's life satisfaction and quality of life is by helping them to eliminate and or cope with stress and distress. A disturbed stress response can lead to a plethora of pathological processes that can lead to overall worsening of CVD. Nurses and healthcare providers should continuously monitor their patient's psychological status to recognize manifestations of stress. By doing so they accurately treat their patients and eliminate/lower their stress levels and enhance recovery and prevent relapse.

Conclusion

It is important for nurses and other healthcare professionals to monitor their patient's psychological status and assess as well as treat their level of anxiety and depression. By healthcare professionals addressing these stressors such as financial obligations, and illness management patients can reverse their prognosis, resulting in increased life satisfaction and potentially reversing the decline of their physical function. Depression and anxiety are both risk factors for morbidity and mortality for individuals with cardiovascular disease. The results in this literature review highlight the need for nurses and healthcare professionals to formulate a multidisciplinary approach. By doing

this the health care team can identify and treat stressors in their patient's life, decrease anxiety and depression amongst patients with CVD and enhance their quality of life.

References

- Arnott, C., Patel, S., Hyett, J., Jennings, G., Woodward, M., & Celermajer, D. S. (2019, December 7). *Women and cardiovascular disease: Pregnancy, the forgotten risk factor*. Heart, Lung and Circulation. Retrieved February 20, 2022.
- Carney, R. M., Freedland, K. E., Steinmeyer, B. C., Rubin, E. H., & Rich, M. W. (2016, July 19). *Clinical predictors of depression treatment outcomes in patients with coronary heart disease*. Journal of Psychosomatic Research. Retrieved February 16, 2022.
- Case, S. M., Sawhney, M., & Stewart, J. C. (2017, June 22). *Atypical depression and double depression predict new-onset cardiovascular disease in U.S. adults*. Wiley Online Library . Retrieved February 16, 2022.
- Centers for Disease Control and Prevention. (2022, February 8). *Mental health conditions: Depression and anxiety*. Retrieved February 20, 2022.
- Gordon, N. P., & Hsueh, L. (2021, June 25). *Racial/ethnic, gender, and age group differences in cardiometabolic risks among adults in a northern california health plan: A cross-sectional study* . BioMed Central. Retrieved February 20, 2022.
- Hyun, K., Negrone, A., Redfern, J., Atkins, E., Chow, C., Kilian, J., Rajaratnam, R., & Brieger, D. (2020, September 2). *Gender difference in secondary prevention of cardiovascular disease and outcomes following the survival of acute coronary syndrome*. Heart, Lung and Circulation. Retrieved February 20, 2022.
- Kollia, N., Panagiotakos, D., Georgousopoulou, E., Chrysohoou, C., Yannakoulia, M., Stefanadis, C., Chatterji, S., Haro, J. M., Papageorgiou, C., & Pitsavos, C. (2017, September 20). *Exploring the path between depression, anxiety and 10-year*

cardiovascular disease incidence, among apparently healthy Greek middle-aged adults: The Attica Study. Maturitas. Retrieved February 16, 2022.

Leslie, C. E., Schofield, K., Vannatta, K., & Jackson, J. L. (2020, April 1). *Perceived Health Competence predicts anxiety and depressive symptoms after a three-year follow-up among adolescents and adults with congenital heart disease*. OUP Academic. Retrieved February 16, 2022.

Mei, S., Qin, Z., Yang, Y., Gao, T., Ren, H., Hu, Y., Cao, R., Liang, L., Li, C., & Tong, Q. (2020, August 6). *Influence of Life Satisfaction on Quality of Life: Mediating Roles of Depression and Anxiety Among Cardiovascular Disease Patients*. Sage Journals . Retrieved February 16, 2022.

Roest, A. M., Jonge, P. de, Lim, C. W. W., Stein, D. J., Al-Hamzawi, A., Alonso, J., Benjet, C., Bruffaerts, R., Bunting, B., Caldas-de-Almeida, J. M., Ciutan, M., Girolamo, G. de, Hu, C., Levinson, D., Nakamura, Y., Navarro-Mateu, F., Piazza, M., Posada-Villa, J., & Scott, K. M. (2017, March 24). *Fear and distress disorders as predictors of heart disease: A temporal perspective*. Journal of Psychosomatic Research. Retrieved February 16, 2022.

Shen, B.-J., Fan, Y., Lim, K. S. C., & Tay, H. Y. (2019, June 19). *Depression, anxiety, perceived stress, and their changes predict greater decline in physical health functioning over 12 months among patients with coronary heart disease - International Journal of Behavioral Medicine*. SpringerLink. Retrieved February 16, 2022.

U.S. Department of Health and Human Services. (n.d.). *Anxiety disorders*. National Institute of Mental Health. Retrieved February 20, 2022.

World Health organization . (2021, June 11). *Cardiovascular diseases (cvds)*.

Retrieved February 19, 2022.

