

EXPLORING TECHNIQUES USED TO MAKE DOCTOR-RECOMMENDED
CHANGES IN DIET AND EXERCISE FOR PATIENTS WITH CARDIAC DISEASE

by

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A Dissertation Presented in Partial Fulfillment

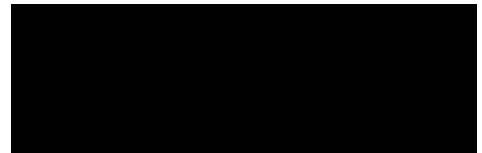
of the Requirements for the Degree

Doctor of Philosophy

Liberty University

September, 2023

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ABSTRACT

Motivation plays an important role in treatment adherence, as patients should make necessary health behavior changes based on their physician's recommendations. Self-efficacy and resilience can help/hinder the patient from implementing and maintaining these changes. Previous studies concluded that individuals cannot rely on medication alone and must implement healthy lifestyle changes. However, these changes may be difficult, as the individuals may face physical or emotional barriers. Therefore, it is important to analyze the factors that motivate an individual to overcome these challenges and follow the recommended treatment plan. This qualitative study examined four participants age x-y through in-depth interviews. Three participants, had high blood pressure and one had a history of a heart attack, as well as coronary heart disease. The results indicated that most participants were not successful in implementing dietary and exercise changes as they prioritized work and family over their health. The one participant who was most successful in following dietary and exercise changes was the one who had a more severe health threat: having a heart attack. Participants mentioned the following strategies helped them to make healthy choices: modifying their diet and exercise plans to accommodate their work and family responsibilities, receiving emotional support from friends and family, receiving practical support (work-out buddy, family members making changes with them), experiencing a health behavior change-related reduction in cardiac symptoms, and being mindful of the fear of the disease getting worse. Future work is needed to help identify factors that can assist heart patients

to increase both motivation and self-efficacy beliefs to make dietary and exercise changes.

Keywords: Motivation, adherence, resilience, self-efficacy, cardiac disease

Dedication

I would like to thank Mark Zappy for the confidence he instilled in me and the support he provided to complete this long journey. The advice, humor and counsel provided was greatly appreciated and respected. Also, this is dedicated to my close friends, co-workers and former co-workers who have supported me throughout my years of studies. The words of encouragement and push for tenacity inspired and encouraged me to complete a lifetime goal.

Acknowledgments

I would like to express my heartfelt gratitude to Dr. Gilbert Franco and Dr. Natalie Hamrick for motivating and instructing me through the arduous dissertation process. They provided relevant suggestions that helped guide this entire dissertation. They gave me their valuable time, insight, and information throughout this study. The feedback that I received allowed me to gain a deeper understanding of my research. They have shown me what brilliant researchers can accomplish.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

Although self-endorsed reasons for motivation and self-efficacy beliefs appear to play a central role to inspire consistent self-care among people with a cardiac diagnosis, more information is needed to determine how to increase a patient's success in making physician-recommended changes in diet and exercise. Sheeran and colleagues (2020) conducted a meta-analysis of 65 randomized controlled trials for interventions aimed at boosting self-endorsed reasons (autonomous motivation) and self-efficacy beliefs among individuals desiring to make desired health behavior changes. They discovered only a small effect of these interventions on health behavior change. Sheeran and colleagues suggested the need to help people address problems such as forgetting, missing opportunities, or getting derailed by temptations, distractions, or unwanted internal states (e.g., mood, ego-depletion) to successfully achieve their goals (2020). Resiliency theory suggests that, in addition to autonomous motivation and high self-efficacy beliefs, having a reliable support network and healthy emotional regulation is beneficial to staying actively engaged in a desired behavior, as well as counteract negative mental health (Crane et al., 2019, O'Leary, 1998). Therefore, the current study has two objectives: to learn more about the techniques cardiac patients use to address the problems they encounter when implementing physician-recommended health behavior changes and explore the resilience-related techniques cardiac patients use to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes.

Self-care includes an individual's actions taken to reduce symptoms and slow the progression of the illness. Health behaviors play a crucial role in patients with cardiac issues because medication cannot be the only intervention, as lifestyle changes also play important roles.

Cardiovascular disease is considered a chronic illness and as such, plays a crucial role in an individual's life because the illness requires ongoing care (Meng et al., 2017). Medical professionals recommend that individuals change their diet and increase physical activity to encourage better health outcomes (Kim et al., 2021; Dechaine et al., 2017, 2018). Although important to improving their health, individuals often fall short of implementing these changes (Cavill et al., 2006; Garber et al., 2011).

Background

According to the American Psychological Association (2022), cardiovascular disease consists of any disease, congenital or acquired, that affects the heart and blood vessels. Cardiovascular diseases include hypertension, congestive heart failure, myocardial infarction, arteriosclerosis, and coronary heart disease (American Heart Association, 2022). Individuals with a cardiac disease must initiate and maintain their recommended treatment goals. The behaviors include medication management, as well as changes in diet, and increased physical activity (Chuang et al., 2019). Knowledge is important, as patients can engage in healthier behaviors.

Knowledge + Motivation

Individuals should have knowledge about their symptoms (that are associated with heart disease) and the ability to make healthy changes to alleviate these symptoms (Chuang et al., 2019). Individuals that notice symptoms may change their lifestyles in

terms of diet, and increase physical activity (Bente et al., 2021). These changes require motivation for change and maintenance for individuals with cardiac disease to obtain better health outcomes.

Individuals must gain knowledge about their diagnosis because the knowledge can guide them toward healthy changes. However, making changes can be difficult when individuals lack motivation. The individual should be motivated in learning about their diagnosis and self-care measures on their own (Gianos et al., 2018; Niksadat et al., 2022). Individuals should have the motivation to implement changes and stay proactive with the changed behaviors. This is important because having a self-endorsed reason for the change creates the buy-in individuals need to be able to maintain their results (O'Shea et al., 2020). Individuals who are not motivated to make changes may face negative consequences such as higher rates of rehospitalization (Cousin et al., 202; Jaarsma et al., 2017).

Motivation

Motivation indicates the readiness to change (Wu & Edmondson, 2017). The transtheoretical model explains different stages, processes, decisions, and self-efficacy of healthy behaviors needed for implementing a health behavior change (Prochaska & DiClemente 1982; Wu & Edmondson, 2017).

Self-Efficacy Beliefs

One of the concepts of the transtheoretical model includes self-efficacy beliefs, the extent individuals feel confident about making healthier changes (Hennessey et al. 2020; Wu & Chu, 2015). Self-efficacy beliefs are also important to build confidence for addressing barriers of treatment adherence (Middelkamp et al., 2016).

Social Support

Social support, the provision of assistance or comfort from others (APA, 2023), is also important in managing a chronic illness (Hennessy et al., 2020). An individual should have familial and peer support to help combat self-doubt (Bahari et al., 2019; Vellone et al., 2019). Support can aid with recovery as well as maintenance of healthy behaviors. Patients that require caregivers may feel defeated because they are not able to take care of themselves (Cameron et al., 2017). Therefore, familial and peer motivation can help them continue to engage in treatment.

Individuals may not be able to motivate themselves because lifestyle changes can be difficult to maintain (Karimi-Dehkordi & Clark, 2020; Sokalski et al., 2020). Therefore, it is important that patients have social support because the support helps maintain self-confidence (Chamberlain, 2017; Zabeen et al., 2020). Self-confidence enhances motivation as the patient feels a sense of accomplishment, which increases the chances of future attempts to make the lifestyle changes.

Support can also stem from being held accountable. When patients were encouraged to provide updates on their progress, they felt motivated to comply with the treatment (O'Shea et al., 2020). The patient feels that they have to meet their goals to share the positive news with the individuals holding them accountable. Individuals with cardiac disease showed improvement in motivational levels when they attended group physical exercise classes (Fuentes-García et al., 2021). Therefore, accountability plays an important role in adherence.

Emotional Regulation

Chronic illness can cause fluctuations in emotions. Individuals experiencing cardiac symptoms may not be able to engage in certain activities. This is common in elderly patients, as they may have more severe diagnoses than younger patients (Prochota et al., 2019; Sun et al., 2017). This can cause an onset of mental distress, which can snowball into depression (Chang et al., 2017; Karakurt et al., 2017). This can cause individuals to question their self-confidence and resilience (Massouh et al., 2019, 2020).

Individuals may not be able to make changes as they face anxiety and stress (Birk et al., 2017, 2018). Patients must monitor their health to notice if their health is declining or improving so they can make self-care regimes or medication changes (Dickson et al., 2021; D'Souza et al., 2021). This is an important measure of self-care, as the patient should have knowledge about their own health. Individuals living with a diagnosis for long periods learn to monitor their diagnosis because they realize the importance of it (Guo et al., 2022). The initial diagnosis can become worse if it is not managed properly (Riegel et al., 2021, 2019).

Biblical Perspective

“Beloved, I pray that all may go well with you and that you may be in good health, as it goes well with your soul” (3 John 1:2). The practice of self-care can include a spiritual journey where the individual honors God and their body as His temple, seeks His strength to implement difficult lifestyle changes or provide healing, and find meaning in this life-threatening circumstance. Humans are meant to live in a healthy manner even when they receive a chronic health diagnosis. While individuals are experiencing symptoms, they often turn to their faith to help them heal. Practicing healthier behaviors means that the individual is taking care of their body and their soul.

The individual will heal their body through changes in behavior, but they will heal their soul through faith. Individuals feel gratitude towards their supporters, connect or reconnect with God, and engage in prayer. This journey can cause individuals to feel that they have a higher purpose in life because they were given a chance to make changes.

Problem Statement

Individuals with cardiac diagnoses must make physician recommended changes in dietary and physical exercise habits to improve their quality and quantity of life (American Heart Association, 2022). As important as making physician-recommended changes in diet and exercise are, only a small percentage of cardiac patients are successful in making and maintaining these self-care changes. Motivation may play a key role in treatment adherence. Motivation is defined as the impetus that gives purpose or direction to behavior and operates in humans at a conscious or unconscious level (American Psychological Association, 2022). Self-endorsed reasons for motivation, which is construed as a personal buy-in for why it is important, and self-efficacy beliefs appear to play a role to inspire consistent self-care among people with a cardiac diagnosis (Solaski et al. 2020), and interventions have targeted these constructs.

Sheeran and colleagues (2020) conducted a meta-analysis of 65 randomized controlled trials for interventions aimed at boosting self-endorsed reasons (autonomous motivation) and self-efficacy beliefs among individuals desiring to make desired health behavior changes. They discovered only a small effect of these interventions on health behavior change, so there appears to be a need to examine something else beyond autonomous motivation and self-efficacy alone. Sheeran and colleagues suggested the need to help people address problems such as forgetting, missing opportunities, or getting

derailed by temptations, distractions, or unwanted internal states (e.g., mood, ego-depletion) to successfully achieve their goals (2020). Further, resiliency theory suggests that, in addition to autonomous motivation and high self-efficacy beliefs, having a reliable support network and healthy emotional regulation is beneficial to staying actively engaged in a desired behavior, as well as counteract negative mental health (Crane et al., 2019, O’Leary, 1998). Therefore, the current study has two objectives: to learn more about the techniques cardiac patients use to address the problems they encounter when implementing physician-recommended health behavior changes, and explore the resilience-related techniques cardiac patients use to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes.

Purpose of the Study

The purpose of this qualitative study is to learn more about the techniques cardiac patients use to address the problems they encounter when implementing physician-recommended health behavior changes (exercise and heart-healthy diet). Resilience-related techniques used to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes will also be explored.

Research Questions

Research Questions

RQ1: What techniques do cardiac patients use to successfully address the problems they encounter when implementing physician-recommended health behavior changes (exercise and heart-healthy diet)?

RQ 2: What resilience-related techniques do cardiac patients use to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes?

Assumptions and Limitations of the Study

I expected that individuals may have the motivation for behavior change but some may not have the physical strength to participate in physical exercise. I assumed that individuals might say that they are following their treatment plan even if they were not following the whole plan. I expected that some individuals might want to comply but not have the resources to do so (e.g., cannot afford healthier food).

One limitation may involve the way participants are interviewed. While I plan to use Zoom or Google Meet, some individuals may not have the technological knowledge to log into the interview, limiting the number of individuals that could participate. Another limitation is not requiring the patients to have a diagnosis for a certain amount of time. Therefore, the time of diagnosis could be anywhere from newly diagnosed to an individual with a longer time post-diagnosis. This would matter because the individual with a longer time of diagnosis may face more severe symptoms, which take more effort to manage, than a newly diagnosed individual, or could even just have more time to experience setbacks in health behavior changes. Another limitation is that I did not focus on a specific cardiac diagnosis. This could make a difference in participants' treatment journey based on the severity of the diagnosis.

Theoretical Foundations of the Study

Motivational theory explores the driving force behind an individual's actions. Patients' adherence to treatment may be improved once they recognize the importance of making positive changes. "Outcomes using the HBM are based on the individual's beliefs about six constructs in relation to their own health: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and later self-efficacy" (Wu & Edmondson, 2019, p. 16). The individual must perceive that their current approach to a given health behavior is a threat to their health, and if changed, will give a positive outcome at an acceptable cost (Wu and Edmondson, 2019). They must also believe they have the ability to make the recommended changes.

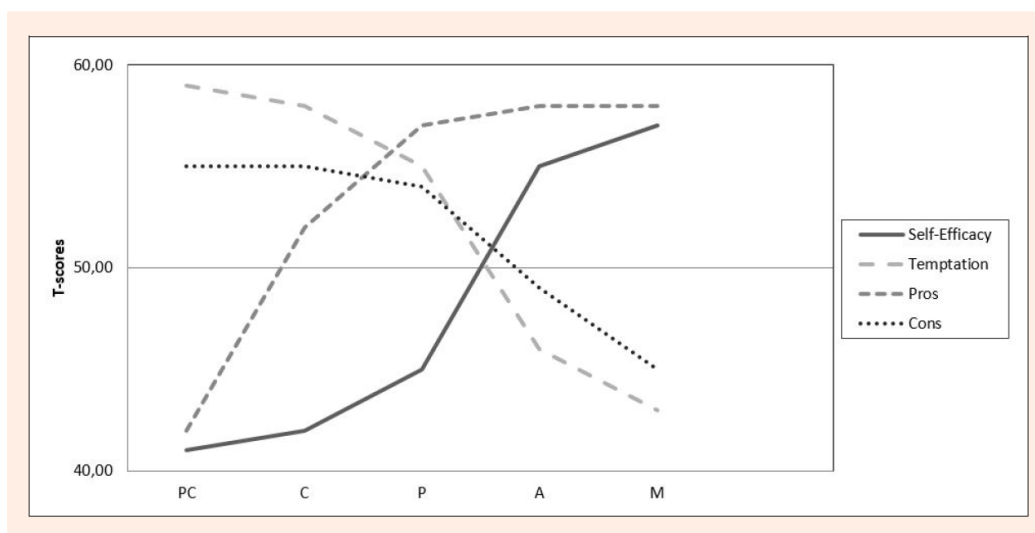
Bandura proposed self-efficacy, an individual's subjective perception of their capability to perform in a given setting or to attain desired results, was a primary determinant of emotional and motivational states and behavioral change (American Psychological Association, 2022). The self-efficacy theory was previously studied by exploring individuals' perceptions of successes and failures. Patients' self-efficacy may improve once they recognize that they should not focus on the negative aspects of their treatment." Attending to one's accomplishments is encouraging, whereas dwelling on failures can be discouraging and undermine one's sense of self-efficacy" (Bandura, 1991, p.253). This can cause individuals to have different levels of self-efficacy based on their experiences.

According to the Transtheoretical Model of Behavior Change, there are five stages of change: pre-contemplation, contemplation, preparation, action, and relapse (Prochaska & Marcus, 1994). As seen in Figure 1, self-efficacy beliefs must be high for an individual to prepare to make a change, and they must remain high to take action and

maintain the behavior (Middelkamp et al., 2017). Further, the pros must outweigh the cons, and temptation to return to unhealthy behavior must be low (Velicer et al., 1998).

Figure 1

Relationship Between Stage, Self-Efficacy, Temptation, Pros and Cons for Healthy Behavior



Note. Figure credit to Velicer et al., 1998. PC=pre-contemplation, C=contemplation, P=preparation, A=action and M=maintenance.

Resilience

Resilience is the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands (American Psychological Association, 2022). In addition to having a reliable social network, self-regulation is a major component of resilience and is an important mechanism behind behavior change. Self-regulation is the “ability to flexibly activate, monitor, inhibit, persevere, and/or adapt one’s behavior, attention, emotions, and cognitive strategies in response to direction from

internal cues, environmental stimuli and feedback from others in an attempt to attain personally relevant goals” (Moilanen, 2007). Self-regulation has three main components: emotional regulation, cognitive regulation, and self-related processes (Nairagon-Ganey et al., 2017). Emotional regulation involves the ability to monitor emotional experiences, take steps to process them, and reappraise them as needed to result in more positive outcomes (American Psychological Association, 2022). Similarly, cognitive regulation involves mental efforts to refocus attention or re-orient to healthier long-term goals (Nairagon-Ganey et al., 2017). Self-related processes involve restructuring one’s thoughts to be more affirming and boost confidence (Nairagon-Ganey et al., 2017).

Definition of Terms

The following is a list of definitions of terms that are used in this study.

Cardiac Disease: Cardiovascular disease can refer to a number of conditions: heart disease, heart attack, stroke, heart failure, arrhythmia, and heart valve problems (American Psychological Association, 2022).

Health Behaviors: Health behaviors, sometimes called health-related behaviors, are actions taken by individuals that affect health or mortality. These actions may be intentional or unintentional, and can promote or detract from the health of the actor or others (Short & Mollborn, 2015).

Social Support: The providing of assistance or comfort to other people to help them cope with a variety of problems (American Psychological Association, 2022).

Motivation: the impetus that gives purpose or direction to behavior and operates in humans at a conscious or unconscious level (American Psychological Association, 2022).

Resilience: the process and outcome of adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands (American Psychological Association, 2022).

Self-Efficacy: an individual's subjective perception of his or her capability to perform in a given setting or to attain desired results, proposed by Bandura as a primary determinant of emotional and motivational states and behavioral change (American Psychological Association, 2022).

Self-Regulation: ability to flexibly activate, monitor, inhibit, persevere, and/or adapt one's behavior, attention, emotions, and cognitive strategies in response to direction from internal cues, environmental stimuli, and feedback from others to attain personally relevant goals (Moilanen, 2007).

Significance of the Study

This study is significant in understanding the techniques cardiac patients use to address the problems they encounter when implementing physician-recommended health behavior changes. It is also significant in understanding the resilience-related techniques cardiac patients use to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes. The gleaning of knowledge on these constructs may provide insight into a better quality and quantity of life when an individual can overcome barriers to treatment adherence.

Summary

Making the physician-recommend changes to diet and exercise can be difficult for cardiac patients. While self-endorsed reasons for motivation and self-efficacy beliefs appear to play a role to inspire these health behavior changes, there appears to be a need to examine something else beyond these constructs. I plan to learn more about how cardiac patients address problems such as forgetting, missing opportunities, or getting derailed by temptations, distractions, or unwanted internal states (e.g., mood, ego-depletion) to successfully achieve their goals. Additionally, I plan to explore the resilience-related techniques cardiac patients use to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes. These constructs have promise to be additional pieces to the puzzle of understanding how to best help cardiac patients see success in maintaining these difficult health behavior changes.

CHAPTER 2: LITERATURE REVIEW

Overview

Heart disease is the number one cause of death in the United States (American Heart Association, 2022). Therefore, it is important for cardiac patients to adhere to the recommended treatment provided by medical professionals. Self-endorsed reasons for motivation and self-efficacy beliefs appear to play a role to inspire consistent self-care among people with a cardiac diagnosis. However, more information is needed to determine how to increase a patient's success in making physician-recommended changes in diet and exercise. Patients with this diagnosis may face difficulties with treatment adherence, as they may face physical and emotional challenges. Therefore, these factors should be explored as they may assist/ hinder treatment adherence.

Description of Search Strategy

I conducted research through the Jerry Falwell Library at Liberty University, utilizing the following search terms: self-efficacy, resiliency, self-efficacy scales, resilience scales, motivation, and motivation cardiac disease. The articles were peer-reviewed and published within the past five years. Biblical research was conducted through the website Bible Hub. The keyword the researcher used was: sanctuary, motivation, and resiliency.

Review of Literature

Motivation

Motivation is important for behavior changes because the patient can feel that treatment changes will be challenging or rewarding. Patients may express psychological

distress after receiving a cardiac disease diagnosis. Therefore, the patient must have a strong mental outlook to adhere to treatment.

Motivation indicates the disconnect between treatment adherence and protentional barriers. Karimi-Dehkordi and Clark (2020) studied 12 participants with heart failure. The results indicated that individuals focused on physical and emotional values. The emotional values included motivation, knowledge of the disease, and a better quality of life.

Patients must have access to care so they can be motivated by professionals. Gathright et al. (2020) studied 66 patients with heart failure participating in a home-based program. The program assessed behaviors and provided education during weekly phone or video calls for 12 weeks. The results indicated that independence (89%), family (80%), and health (68%) were rated as the highest values. These motivational factors are important to identify as patients' needs differ for everyone. These factors can be considered when developing programs to increase motivation.

Self-Efficacy

Self-efficacy requires the patient to have the confidence and determination to implement behavioral changes. While behavioral changes may be difficult to implement and maintain, they are important to treat cardiac disease. These changes may be difficult to maintain since patients with heart disease may have limited mobility (Irani et al., 2019). Therefore, the patient must be able to maintain self-efficacy beliefs to overcome any obstacles they face.

Adherence to treatment falls into a category called self-care, but not all components of self-care yield the same success rate. Prochota et al. (2019) studied 100

patients (52 male) with heart failure, assessing their adherence to treatment. The study excluded patients under the age of 60 years, so the median age of the participants was 75. Most of the participants used beta-blockers (97%), diuretics (77%), and statins (76%). The results indicated that a high or sufficient level of self-care was found for these categories: taking medication as prescribed, contacting one's physician or nurse when experiencing shortness of breath or foot/leg swelling, and daily weighing. The lowest self-care levels were found for following a low-sodium diet, regular exercise, and contacting a doctor or nurse after gaining 2 kg in one week. In addition to knowledge of treatment adherence, the patient can apply treatment methods if they have self-confidence.

Self-efficacy is important for the self and for treatment adherence. Patients may focus on small accomplishments to build self-efficacy. Almgren et al. (2017) noted that individuals experienced anxiety when they were trying to be mobile on their own. However, they felt more confident each time they reached a smaller goal (standing or sitting up). The results of this study indicated that patients felt discouraged when they kept failing to reach their goals.

Self-efficacy extends towards the motivation of the exercises as well. Individuals may feel disappointed when they are not able to complete regular exercises on their own. They may have to practice daily activities such as walking. Patients that are not able to engage in daily activities may not feel motivated to try exercise programs (Klompstra et al., 2021).

Klompstra et al. (2021) found that exercise barriers should be addressed to raise self-efficacy levels. The researchers analyzed 517 patients with heart failure. 25% of the

patients had low confidence and low exercise motivation. 10% of the patients had low exercise motivation and high confidence levels. 42% of the patients were motivated to exercise and had low confidence. Each of these four categories of individuals have slightly different barriers that need to be addressed. But, tailoring motivational content according to the unique barriers encountered may help.

Self-efficacy can help determine exercise adherence. Self-efficacy can be boosted one accomplishment at a time. Patients with chronic heart failure benefit from exercises that build self-confidence (Ha et al., 2018). The exercises must start with basic exercises that can lead to more intense exercises. These achievements lead to a higher level of self-confidence.

Self-efficacy may be impacted by depressive symptoms. Exercise aids in relieving depressive symptoms (Chair et al., 2020). The study measured depressive symptoms using the Chinese version of the Godin-Shephard Leisure Time Physical Activity Questionnaire (GSLTPAQ). There was a significant association between leisure-time physical activity and depressive symptoms. This indicated that patients should engage in activities that they enjoy. The results also indicated that physical activity self-efficacy played a mediating role between leisure-time physical activity and depressive symptoms which indicated that self-efficacy should be included in a physical activity regimen. These results indicate that individuals' mental health should be taken into consideration to foster self-efficacy.

Self-efficacy and lessening depressive symptoms predict levels of patient-related outcomes. Thomet et al. (2018) measured self-efficacy using a 10-item General Self-Efficacy Scale. A total of 454 participants and 80% were diagnosed with cardiac disease.

The results indicated a significant link between self-efficacy with mental health status, anxiety, and depression. Depression may cause individuals to spend less time on leisure physical activity, affecting patients cyclically because less physical activity can also cause higher levels of depression.

Depression

Motivation can be difficult to maintain since treatment can cause a strain on cardiac response. It may be more difficult to sustain motivation when an individual is battling depression as well. Silvia et al. (2020) found a significant change in heart rate as the incentives increased among 78 participants, 71.8% of them without anhedonic symptoms. These results show that individuals with depression have lower levels of motivation and they have to exert more energy in order to carry out tasks than an individual without depression. They may prioritize tasks that require less cardiac strain even if there were incentives offered. Therefore, individuals with depression would have to raise their motivation levels in order to complete the tasks successfully.

Cardiac patients who are depressed appear to be at a disadvantage in implementing and maintaining health behavior changes. Chuang et al. (2019) studied 141 patients with heart failure, 3.29 years post-diagnosis. The results indicated that higher levels of depressive symptoms were related to both lower self-care confidence and self-care maintenance, consisting of symptom monitoring and treatment adherence (Chuang et al., 2019). The authors suggest that depressive symptoms may interfere with patients' ability to recognize symptoms and act appropriately when symptoms occur, perhaps delaying medical consultation and seeking timely treatment. Further, common symptoms of depression include lack of energy or motivation, difficulty concentrating or making

decisions, and withdrawal from social activities (APA, 2023), which could interfere with planning, implementing and/or participating in heart-healthy diet and exercise.

Self-Determination Theory includes autonomous motivation (self-endorsed reasons) and perceived competence as mechanisms for making the recommended health behavior changes (Ryan & Deci, 2017). Sheeran et al. (2020) conducted a meta-analysis of 65 randomized controlled trials to promote health behavior change by targeting autonomous motivation and perceived competence. They discovered a small but significant effect of these interventions on health behavior change. Sheeran and colleagues suggested the need to help people address problems such as forgetting, missing opportunities, or getting derailed by temptations, distractions, or unwanted internal states (e.g., mood, ego-depletion) to successfully achieve their goals (2020).

Depression appears to impact self-efficacy and health behavior implementation. Zhou et al. (2022) measured self-efficacy using the Self-Efficacy for Appropriate Medication Use Scale. A total of 238 participants were diagnosed with CHD, with 134 males and 104 females. The results indicated that depression was negatively associated with self-efficacy and medication adherence.

Support

It is important for patients to have support from the medical team after treatment so that motivation levels can be present over a longer period. Individuals may be unmotivated to engage in health-related changes when they are not consistent in following an exercise regime. Kim et al. (2021) studied 25 participants with chronic cardiac disease who joined an average of 29 sessions that focused on daily living activities, such as walking. The results indicated significant changes in PASS Cognitive

Instrumental Activities of Daily Living adequacy and improvement in the 6-min. walk test. However, participants showed significantly lower motivation according to the Physical Activity and Leisure Motivation Scale at 9 months than at the discharge date. These results are important because the longer the time that lapsed for medical team support, the less motivation was present.

Motivation for adherence can be increased through the support of family. If the family has information about the treatment, they can encourage the patient to engage in healthier behaviors. Nissen et al. (2018) studied 10 couples that completed a 6-week cardiac rehabilitation program where the patient received education on diet, exercise, quitting smoking, and psychological and social support. The participants' family members participated in all sessions except for the exercise sessions. The results showed that patients with coronary heart disease were successful at making lifestyle changes when the couple treated the changes as a shared interest and responsibility. they Specifically, open expression of thoughts, feelings and reflections on how the CHD affected their life and relationship, and actively seeking solutions that accommodated the needs of both patient and partner facilitated better success for lifestyle changes. Alternatively, patients/partners that were not able to communicate or support lifestyle changes struggled with their relationship as well as maintaining lifestyle changes. The authors concluded that incorporating a dyadic perspective in the rehabilitation process may lead to a reduction in motivational barriers to lifestyle changes.

Social support is important for treatment adherence because healthier behaviors are encouraged. Vellone et al. (2019) analyzed 158 males with hypertension. All the participants reported high self-efficacy levels while 86.1% reported strong familial

support. Family social support had moderate, positive, and significant correlations with hypertension self-care behaviors and self-efficacy. Self-efficacy was found to be associated with hypertension self-care behavior. Therefore, support encourages individuals to meet their treatment goals.

Access to Care

Telehealth can increase access to care for individuals that are unable to attend treatment. Spindler et al. (2021) studied 136 participants with 69 in a telerehabilitation group and 67 in a cardiac rehabilitation group. Both groups and their partners had access to professional feedback based on individual needs. These results indicated that motivation can increase when patients have the support to complete tasks throughout the program.

Barriers

Patients may have lower levels of self-efficacy if they do not have access to health services. Mszar et al. (2021, 2020) studied 170 participants with poor access to healthcare services, lack of knowledge on prevention and adherence, and lack of knowledge on when to seek medical advice. The sample consisted of 77 individuals who had either high cholesterol or a family history of atherosclerotic cardiovascular disease, 42 individuals had both risk factors, 30 individuals had neither risk factor, and 15 received an atherosclerotic cardiovascular disease diagnosis). The participants reported barriers to accessing health care services including knowledge of when to seek help (39.5%), distrust in medicine (38.5%), and concern over a future diagnosis (35.9%). Self-efficacy was measured using a 4-point Likert scale where 22.0% of individuals reported lower

levels of self-efficacy. Individuals cannot comply with treatment adherence if they have minimum access to care.

Individuals may feel that they are facing barriers when they face small obstacles. In the study by Nissen et al. (2018), the results indicated that the participants felt that the healthy food was not flavorful, so they felt that they were failing at changing their behavior. The experience of satisfaction caused the participants to embrace or reject the changes. The results indicated that levels of confidence in lifestyle changes played a role in the study.

Barriers of treatment adherence can play a negative role as they may affect motivation. The results of the study by Spindler et al. (2021) indicated that physical values included side effects of physical limitations, and activity prioritization. These results are alarming, as individuals are subjected to negative physical and emotional barriers. This caused the individuals to prioritize pleasant activities over treatment adherence. The barriers may cause low motivation in treatment adherence.

Some health programs have addressed the barrier of low self-efficacy levels for cardiac patients. These programs help boost self-efficacy as they help boost self-confidence. A program constructed in China for patients with Congestive Heart Failure (CHF) combined exercise, education, and medication management (Chen et al., 2018). This program included different intensities of exercises dependent on the patient's level of self-efficacy. The participants were not introduced to more difficult exercises unless they felt mentally prepared. This type of program is beneficial as the participants were able to build their confidence.

Patients should be provided with empowerment programs to raise levels of self-efficacy. These programs are designed for patients and physicians to have direct contact. Kärner Köhler et al. (2018) measured patients with cardiac diseases by goal achievement, self-awareness, managing stress, and readiness to change. The results indicated that the relationship between patient empowerment and self-efficacy was weak. However, the researchers found a significant association between empowerment and self-efficacy, indicating that higher levels of empowerment cause higher levels of self-efficacy and vice versa.

An individual's level of resiliency can help them face cognitive deficits. Older individuals may have less learning ability where they learn slower than in their younger years (Prochota et al., 2019). Other cognitive defects may stem from the illness itself after a cardiac episode. This can cause them to implement healthier changes at a slower rate. Slower responses to change are concerning, as patients may face a more extreme cardiac event or even a recurrence of one.

Motivation can be increased using cardiac rehabilitation programs. Wurst et al. (2019) used the Motivation-Volition module to influence behavior change, which works to enhance strength of goal intention, self-concordance of this goal intention, action planning, barrier management and outcome experiences. The study consisted of 202 participants with 100 participants in the intervention group and 102 in the control group (p. 1108). The results indicated an increase of activity between-group at 6 weeks after discharge. While the control group increased activity, the intervention group remained more active. 12 months after discharge, the intervention group had higher activity than the control group. An ANCOVA result indicated a large effect of the MoVo-LISA on

behavior change after the intervention. The effect size contributed to the patients being taught how to manage barriers. The results indicated that motivation intervention can have long-lasting effects on participants.

Knowledge

Patient education improves self-efficacy because patients may not understand their disease. Javan et al. (2019) studied 80 participants with mechanical heart valves. The results indicated that self-efficacy was higher after patients received education (p. 209). Therefore, knowledge is critical for higher levels of self-efficacy. Similarly, providing very specific information about dietary and exercise changes should also boost self-efficacy for implementing those changes.

Seid et al. (2019) studied 310 patients with heart disease. The mean age was 49, and most of the participants (64.2%) were female. The participant's knowledge was measured using a scale and adherence was measured by analyzing body weight monitoring, exercise, low sodium diet, excess fluid intake restriction, medication and appointment keeping. The results indicated that 22% of the participants adhered to treatment. The patients with higher levels of knowledge were 2.5 times more adherent than patients with less knowledge. Most heart failure patients, 74.8%, had a poor level of knowledge regarding their disease. These results are alarming in that patients cannot comply with their treatment because of lack of knowledge.

Patient education promotes self-efficacy. Individuals can decide whether they can meet their treatment goals if the goals are presented to them. Yu et al. (2019) divided participants into control and experimental groups. The experimental group received eight weeks of monitoring of exercise, nutrition, and medication evaluation. The results

indicated that the participants that received education had higher levels of self-efficacy than the control group. The results indicated that patients may have higher levels of self-efficacy when they have guidance. Therefore, education can facilitate awareness, and potentially lead to action.

Patient education can improve treatment adherence as patients are coached through their sessions. In a similar article by Arslanian-Engoren et al. (2021), participants with heart failure completed 10 sessions after they were discharged from the hospital. Eight participants were included in the study, and 62.5% were female. The participants were educated by modules from the Heart Failure Society of America. They were also participated in computerized cognitive training by navigating through a virtual environment. The results indicated that the sessions were successful in treatment adherence. Median scores significantly improved for maintenance from baseline to completion of 10 sessions, management from completion of 10 sessions to 2-month follow up, and confidence from baseline to 2-month follow up. Therefore, the sessions were beneficial as self-care improved after the education was completed.

Quality of Life

Self-efficacy can be impacted by quality of life. Barham et al. (2019) found that self-efficacy can affect the development of cardiac disease through behaviors. The study included 275 participants with a mean age of 59.51 years, and more than half were male (56%). The mean duration of coronary heart disease was 4.09 years. The results of the study indicated that individuals with lower levels of self-efficacy had lower levels of health-related quality of life. Individuals with a higher quality of life met their adherence goals.

Resiliency

Resilience is the process of coping and recovering from a stressful event (Otero et al., 2020). Resiliency involves an individual adapting to a new lifestyle, which may include medication compliance, dietary changes, and an active lifestyle. However, there must be compliance in all facets. Otherwise, the treatment will be less effective.

When patients experience stressful events, their stress levels increase. This can cause individuals to be more prone to anxiety and depression. Liu et al. (2018), studied 88 participants, with 74% being males. The mean age was 62.1 years, and 67 participants went through stent implementation. The results indicated that higher levels of resilience were related to lower Self-Rating Anxiety Scale scores and Self-Rating Depression Scale scores.

Cardiac outcomes are better when an individual displays resiliency towards healthier behaviors. Springfield et al. (2020) asked 77,395 women about diet, smoking status, physical activity, hours of sleep per night, and alcohol consumption. The mean age was 77. Racial demographics were as follows: Black (5.8%), non-Hispanic white (89.7%), Latina (2.4%), and Asian or Pacific Islander (2.0%) (p. 3). The results indicated that most women reported medium (36.8%) or high (35.7%) levels of resilience. The results indicated that women with higher resilience levels had 22% greater odds of diet adherence and 56% greater odds of meeting recommended physical activity.

Responses to Stressors

Resiliency can be explored by analyzing cognitive flexibility. Cognitive flexibility is having the mental ability to switch between tasks and generate appropriate responses. Otero et al. (2020) studied 54 female participants. The results indicated that young

women with high resilience have better cognitive flexibility. These results indicated that women with higher levels of resiliency perceive more control over stressful events. Therefore, individuals should have the flexibility to control appropriate responses.

Stress can cause an increased risk of cardiac disease and changes in mental functioning as well. Higher levels of resiliency to stress can assist individuals with faster recovery from stress. This can cause individuals to gain a mindset where they avoid/ cope with stressful events more productively (Diaz-Ramos et al., 2021).

Emotional regulation and support are important when an individual faces a cardiac event. Depending on the severity of the event, patients may face more obstacles in terms of recovery. Coronary heart disease is recognized as a traumatic event where individuals must display higher levels of resiliency (M Al Ali & Al Ramamneh, 2022, 2021). In this study, 52% of participants had a history of cardiac procedures and 67.9% were diagnosed with a comorbid disease. The results indicated that patients that didn't have a history of cardiac procedures had higher levels of resiliency.

Resilience may be difficult to rebuild, especially when there are symptoms of depression. Morin et al. (2017) analyzed resilience in participants that faced cancer, stroke, heart disease, or lung disease. The study included 1,395 participants, and 54.6% were females and 45.4% were men. The results indicated that the resilient class (64.2% of the sample), reported low depression levels at all times. These results indicate that depression should be analyzed, as it is prevalent while battling cardiac disease.

Social support may help patients battle depressive symptoms by increasing positivity. Park et al. (2022) found a strong relationship between resilience and stroke when there was a larger network of social support. There was also evidence that having a

larger social network of coronary heart disease and cardiac disease mortality. Similarly, a meta-analysis by Won Park and colleagues (2021) found that healthy people who have larger social networks are less likely to experience a cardiac event. Therefore, social support can play an important role in reduction of cardiac disease.

Patients may ignore symptoms of cardiac distress until they are faced with severe symptoms. Patients diagnosed with Acute Coronary Syndrome (ACS) faced high levels of stress because the decision for treatment was delayed (Arrebola-Moreno et al., 2020). Patients with higher levels of resilience may have lower levels of stress because they can cope more efficiently.

Personality traits help determine whether an individual is mentally prepared to handle stressful events. As discussed by Krick et al. (2021), personality was measured using scales that measured neuroticism, agreeableness, extraversion, conscientiousness, and openness. The participants of this study were not diagnosed with heart disease; however, their heart rates were measured. The results of the study indicated that participants with lower stress-related risks had higher scores of heart rate vulnerability. This indicates that individuals can be less prone to cardiac events when they can control stress. This finding indicates that patients with cardiac disease should engage in healthy coping habits to aid in their recovery.

Resiliency levels can differ based on age. The results of the study indicated that older individuals had lower rates of resiliency (van Rijn et al., 2020). This can be attributed to the physical challenges faced by older patients.

Resilience plays an important role in achieving a better quality of life. Lee et al. (2020) analyzed 267 participants. 56% of the participants indicated that they had low

levels of resilience, and all participants were diagnosed with cardiac disease. The results indicated that men had higher levels of resilience than women. The results of the subscales of self-reliance and perseverance indicated that ($p = .01$, $p = .03$). The results of this study indicated that patients that didn't have a cardiac procedure had higher levels of resilience. This result shows that individuals must have higher levels of resilience to achieve the recommended treatment plan.

Resilience can fluctuate based on life experiences. As discussed by Robinson et al. (2019), individuals need resilience to adapt to their surroundings. The researchers implemented a program with 6 sessions over 18 months. The program was designed to promote resilience in individuals with heart disease, diabetes, and arthritis. The study included 191 participants and 71% were male. The researchers analyzed results of the study through a qualitative and quantitative method. The results indicated that between baseline and post program, there was a mean improvement in scores among the 40–59 age group, which was significantly greater than the 60 and older age group for well-being, problem-solving, and achieving goals. The results indicated that the between baseline and 3-month follow-up showed significant improvement in both age groups for all scores. However, mean improvement in (a) problem solving and (b) management of long-term conditions scores was significantly greater for the 40–59 age group than the 60+ group.

The qualitative analysis highlighted four common categories: peer support, gender diversity, course activities, and benefits of participation. Participants built resilience through peer support by sharing experiences with each other. The participants indicated that men and women shared their experiences with each other, which helped them look at

different perspectives. Some participants were not comfortable sharing their experiences immediately; however, they became comfortable after they attended several sessions. The results indicated that participants felt safe since they were learning at their own pace. They learned different aspects of self-efficacy and felt supported by their peers.

Knowledge

Education promotes resilience in patients. Wang et al. (2021) asked participants to attend a 4-week empowerment group after they were discharged from the hospital. The goals of the sessions included perceiving problems, expressing emotions, establishing goals, planning, and evaluating. A total of 85 participants (42 in the intervention group and 43 in the control group) were included in the study. control group and the intervention group resiliency scores were identical at the baseline. Compared to the score at baseline, only the intervention group had significantly increased resiliency scores at the one-month review. The results indicated that individual cognitive coping skills helped support better resiliency.

Resiliency may impact sleep disturbances, because an individual may not be able to regulate their emotions. Blanc et al. (2020) studied 700 female participants on anti-hypertensive medications. The mean age was 60.7 years with 28.1% born in the U.S., African (71%), European (17.4%), and Hispanic (11.6%). There was a negative correlation between Index of Self-Regulation of Emotion and sleep disturbance. However, there was no correlation found between stress and sleep disturbance scores. This effect was the stronger for the African participants. The results indicated that individuals with higher levels of resiliency displayed fewer sleep disturbances.

Resiliency can be strengthened through spirituality by channeling positivity. Curcio et al. (2022) studied 396 participants that underwent cardiac surgery. The mean age was 65 years, 65% were male, and 76% were married or in a relationship. 44% of the participants had low resilience and 56% had high resilience. 30 days post-surgery, the high individuals displayed higher self-health ratings than individuals with low resilience. The result was maintained at the 12-month mark post-surgery assessment

Individuals with Meaning/Peace and Faith values displayed an increase in resilience. The results indicated that high resilience patients were also less anxious and less depressed, had higher rates of self-efficacy, and had a better quality of life. Such results indicate that spirituality can promote resiliency.

Biblical Foundations of the Study

The practice of self-care is a spiritual journey where the individual is honoring God. Humans are meant to live in a healthy manner even when they receive a chronic health diagnosis. While individuals are experiencing symptoms, they must remember that God created their bodies, so they must care for themselves. “Or do you not know that your body is a temple of the Holy Spirit within you, whom you have from God? You are not your own, for you were bought with a price. So glorify God in your body” (ESV, 1 Corinthians 6:19–20). Practicing healthier behaviors means that the individual is taking care of their body and serving God simultaneously.

Patients may feel weak mentally or physically when they have cardiac disease. The Bible provides motivation to build resiliency. “He gives power to the faint, and to him who has no might he increases strength” (ESV, Isaiah 40:29). This encourages individuals that they are able to overcome challenges.

Patients may struggle with self-efficacy because they may not have the motivation to implement and maintain healthy behaviors. “So do not throw away your confidence; it will be richly rewarded. You need to persevere so that when you have done the will of God, you will receive what he has promised” (ESV, Hebrews 10:35–36). Ephesians 4:22–24 explains that individuals must replace their former habits with new habits. Former attitudes should also be replaced with healthier attitudes in order to maintain changed behaviors.

I believe that these passages are beneficial to promote physical health. The body was created very pure, so the individual is responsible to take care of it. While resiliency can be difficult to achieve, the patient is putting in a lot of time and effort to achieve a healthier lifestyle. The healthier changes will assist with fewer negative symptoms from cardiac disease.

Patients may struggle to find the motivation for treatment adherence, but the mental outlook should be different. Even with cardiac disease, they still have an opportunity to treat the disease. The patient may see greater results when they maintain healthier behaviors over longer periods of time.

Summary

Self-efficacy and resiliency are important factors for treatment adherence for patients with cardiac disease. Self-efficacy and resiliency indicate whether individuals are prepared to make necessary changes to improve their quality of life. These factors indicate whether patients will continue treatment over a longer period of time. Therefore, it is important that patients are motivated enough to meet their treatment goals.

Treatment adherence extends into spirituality, as everyone must treat their bodies as a sanctuary. God created the physical body, meaning that it is precious and should be cared for. Treatment adherence is beneficial, as it promotes a healthy lifestyle and decreases negative symptoms.

CHAPTER 3: RESEARCH METHOD

Overview

The purpose of Chapter 3 is to introduce the methodology for this qualitative study regarding the motivational factors of treatment adherence in patients with cardiac disease. The qualitative approach will allow for deeper understanding of factors that may contribute to or prevent treatment adherence. This chapter includes the research questions, design, study procedures, instruments, and limitations.

Research Questions

RQ1: What techniques do cardiac patients use to successfully address the problems they encounter when implementing physician-recommended health behavior changes (exercise and heart-healthy diet)?

RQ2: What resilience-related techniques do cardiac patients use to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes?

Research Design

The qualitative design is the most appropriate design for this study. I used this design to gain a deeper understanding of factors that can contribute/prevent treatment adherence. This understanding is needed as heart health is important in maintaining overall health. Therefore, exploring self-efficacy and resiliency may help address barriers to following medical treatment.

Cardiac disease is a sensitive topic since it may affect individuals mentally, physically, and emotionally. The qualitative method is most appropriate for this study because it allows the participants to address their personal experiences without

restrictions. This method allowed the researcher to ask follow-up questions, whereas the quantitative method does not allow that. In this study, the mixed method is less appropriate in that the quantitative scales may influence answers in the semi-structured interviews and vice versa.

I explored techniques heart patients use to adhere to and overcome challenges when implementing health behavior changes through semi-structured interviews to facilitate an open conversation. To follow a qualitative method, I adapted the questions for each interview.

Phenomenology

The phenomenological approach is appropriate in that it explores the experiences of the individual (Creswell, 2007). Phenomenology is the process where researchers study individual behaviors and group the behaviors based on similar experiences of others. These experiences can be interpreted in different ways as the individual's consciousness varies. Therefore, the levels of interpretation may vary by individual experiences by their recollection of event(s).

The phenomenological approach is beneficial in that participants are not guided toward a specific answer. Giorgi and Giorgi (2003) found that "the participants know neither the specific purpose of the research nor the specific mode of analysis, they would not know which way to slant their descriptions" (p. 248). This can be even more beneficial when interviews are held separately because the participant does not have other

factors to influence their answers. I was able to draw conclusions based on the common themes that are presented.

I was held accountable for the approach, as it must not conflict with the study. I took the approach where I recognized and specified the philosophical assumptions of phenomenology (Creswell, 2007). This included creating boundaries between the researchers' perceptions and their life experiences. The boundaries included identifying any biases and not taking them into consideration in the study. I asked follow-up questions during the study so the participants did not make assumptions.

The phenomenology process explores the essence of the phenomenon that cannot be seen by observation. This means that research is important to recognize if the experiences contain significant meaning. "The object that triggers off the essential search can be a real object or state of affairs or else something fictional" (Giorgi & Giorgi, 2003). So that I could decipher whether the data is valid for the study, I was sure to filter out the data based on the participants' interpretations of the experience(s).

The phenomenological process seeks to find the essence within participants' experiences. This can take place in an environment where the researcher explores answers and determines the validity of data. The qualitative nature supports the approach where researchers can ask participants to clarify their perceptions. The researchers are then able to discover whether there is significant meaning in their study.

Participants

The eligibility criteria required individuals to be over 18 and under 65 with heart disease. This age range is broad to limit confounding factors by studying one age range. I would have chosen a small sample of 20 participants because of the qualitative research

method being used. I would have recruited the participants online through Liberty University through Doctoral Commons. The population that was targeted was students enrolled in PhD psychology classes. The recruitment email (Appendix A) will highlight the study, risks, and benefits. I also recruited through social media (Facebook) using the social media posting (Appendix A).

Study Procedures

I emailed participants the informed consent document (Appendix B) and explained the form to them over Zoom or phone to provide access to all participants. I explained the study and informed the participants that their answers will be used for dissertation purposes. They were able to ask any questions that they may have about the study. The participants were informed that their participation is voluntary. They were also informed that they may drop out of the study at any time and that their personal information will be confidential.

The participants will need an electronic device for the study. The participants will engage in semi-structured interviews where they will provide their demographic information as well as their cardiac history. The interviews were audio recorded and participants were asked verbally if they consented to being recorded. The participants will also be asked questions where the focus will be techniques to address challenges to implementing diet and exercise changes. I transcribed participant responses, then stored and analyzed the data in Excel. I identified and coded common themes of the interviews. I compared and highlighted the common themes through tables created using Excel.

Instrumentation and Measurement

Demographic Data

Participants will be asked to provide their age, race, gender, highest education level, marital status, work status, specific cardiac diagnosis, and year diagnosed with this illness.

Overcoming Obstacles

Interview questions 1-9 were adapted from a similar study by Meyers et al. (2020) that was designed to tap self-efficacy beliefs for adhering to physician-recommended health behavior changes, even when facing obstacles (see Appendix C).

Resiliency from Mental Health Issues

Interview questions 10-14 and 16 were adapted from Meyers et al. (2020) and assess mental health issues experienced and how to overcome them. Interview question 17 was adapted from a study by Thongkhum et al. (2022) about maintaining resilience when faced with heart disease. Items 15 and 18 were developed for this study and tap resilience concepts of boosting self-efficacy beliefs and meaning making.

Data Analysis

Descriptive demographic data will be presented as means with standard deviations (age) or percentages (all other variables). Once the data has been collected, I reviewed the data to ensure that each participant has answered all of the questions. I transcribed the data by hand and code it based on emerging themes. The coding occurred in the order of the interviews, one at a time, to allow me to understand the participants' treatment perspectives.

Delimitations, Assumptions, and Limitations

The delimitation is the age range of the sample. The age range is broad so there are varied life stages represented. This broad age range helped me understand the barriers present at certain life stages. An assumption is that individuals may not have full knowledge of their treatment, which could influence the data. One limitation is that the researcher is replicating interview questions from a previous study and altering them. Another limitation is that individuals may not have access to an electronic device or have challenges/frustrations using them.

Summary

The objective of Chapter 3 is to outline the research questions, design, study procedures, instruments, and limitations included in the study. I measured motivational factors of treatment adherence by analyzing self-efficacy and resilience. I used the phenomenological approach to conduct unstructured interviews. I did not guide the participants on how to answer the questions. This ensured that the essence of the participants is explored.

CHAPTER 4: RESULTS

Overview

The objective of this study was to explore techniques used to make doctor-recommended changes to diet and exercise in patients with cardiac disease. This study focused on the phenomenological approach in that it explored the experiences of the individual (Creswell, 2007) through semi-structured interviews. In order to assess the experiences, interview questions were adapted from Meyers et al. (2020) and Thongkhum et al. (2022); see Appendix C.

The research questions were asked in order to explore the motivational factors of treatment adherence in patients with cardiac disease. The research questions for this study were: RQ1: What techniques do cardiac patients use to successfully address the problems they encounter when implementing physician-recommended health behavior changes (exercise and heart-healthy diet)? RQ2: What resilience-related techniques do cardiac patients use to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes?

The participants were recruited through social media (Facebook). I was hoping to recruit participants who were resilient and were doing well with implementing doctor-recommended diet and exercise changes to glean from them. However, the sample of participants from the study were the opposite, where they were not adhering to diet and exercise recommendations. They were discouraged by their lack of adherence.

Descriptive Results

A total of four people participated in the study and they were over 18 years of age and under 65 years of age. They were recruited through social media using the Social Recruitment post (Appendix A) and all of the participants have heart disease. The participants completed the consent, and the study was explained over Zoom. The participants' interviews were reviewed and transcribed by the researcher.

All of the participants were diagnosed with heart disease ranging 3-14 years. All participants were male and only one participant had two diagnoses (myocardial infraction and coronary heart disease). See Table 1 for the participants' characteristics.

Table 1

Characteristics of Participants

Gender	Age	Diagnosis	Years Diagnosed with Heart Disease
Male	44	Hypertension	4
Male	61	Myocardial Infraction Coronary Heart Disease	14
Male	38	Hypertension	6
Male	42	Hypertension	3

Study Findings

Common themes emerged through findings based on techniques that participants used in order to adhere to treatment.

RQ1: What techniques do cardiac patients use to successfully address the problems they encounter when implementing physician-recommended health behavior changes (exercise and heart-healthy diet)?

Each participant has an understanding that they should follow the doctor's recommendations, however, they had to modify the treatment according to their lifestyle. There were parts of their lives that they couldn't change (work and family) so that was more of a priority rather than treatment adherence.

One participant reported that even though he wanted to go to the gym, he could not leave his kids home by themselves. Therefore, he focused more on dieting in order to lose weight. Another participant reported that he was exposed to cultural food through his family which contained salty and spicy foods. He couldn't make dietary changes until his sister changed her way of cooking so he could eat foods that were less spicy and less salty. Another participant reported that it was difficult for him to adhere to dietary restrictions when he was with his friends because he wanted to eat the same foods as the others were eating. Therefore, he would make exercise a priority even though he wasn't following the recommended exercise treatment.

Most of the participants stated that their exercise regimen consisted of walking or exercising on their own. They were not able to follow a regime since they lacked enough time to do so. While this caused them to be frustrated, they still felt that they were still following the doctor's recommendations.

One of the participants reported that if he was not able to follow the exercise program, he would try to walk more at work. Another participant reported that it was difficult for him to exercise at first, however he kept trying. The combination of dietary and exercise changes caused him to stay motivated because he maintained this lifestyle for 6 years.

While the participants reported that they were not consistent with following recommended diet and exercise plans, they changed the plans to fit their lifestyle. All participants reported that they would be able to follow treatment if they had enough time during the day.

One participant did follow the diet and exercise regimen as recommended. The participant had a heart attack, so his outlook was a bit different than the rest of the participants. He was consistent with treatment adherence because he saw positive results from exercise and dietary changes. He followed the doctors' recommendations because he did not want to experience another heart attack.

The participants felt hopeful following their diet and exercise even when they had lapses in adherence. Most of the participants reported that they were pleased that they were following because they felt that any small change was important for them. They believed that the small changes helped manage their symptoms.

All of the participants stated that the advice that they would give patients to stay out of the hospital is to follow all doctor's recommendations. The participants recommended that the doctor's orders should be followed in order to manage the symptoms and keep the disease from getting worse. One of the participants said that the family history should be looked into. If there is no history of cardiac disease, the patient should still follow a heart healthy diet and exercise.

Table 2 presents common themes based on significant responses from the participants and formulated meaning of the techniques that participants used in order to adhere to treatment.

Table 2*Themes from Significant Statements and Formulated Meaning*

Significant Statements	Formulated Meaning
<p>I have not been able to follow the exercise regimen.</p> <p>I just try to walk around as much as I can.</p>	<p>Improvising exercise regimen.</p>
<p>I had to lose weight to start so I started to pay attention to high calorie foods.</p>	<p>Using diet instead of exercise weight.</p>
<p>Cutting out salty foods reduced blood pressure from 200 to 185.</p> <p>The EKG was good, sodium and cholesterol were good.</p> <p>Potassium was normal.</p>	<p>Managing disease through knowledge.</p>
<p>I know that I have to manage my blood pressure daily because I don't want to experience other symptoms.</p>	<p>Understanding that disease can become worse.</p>

RQ2: What resilience-related techniques do cardiac patients use to address mental health issues that may serve as barriers to successfully carrying out exercise and dietary changes?

Cardiac patients use multiple techniques in order to address mental health issues. The participants were at different stages of their disease, but it was important to explore the techniques that were used. All of the participants mentioned family members and friends as their support. One participant mentioned that he felt supported by his workout partners, which is the reason that he was motivated to go to the gym.

Support came from family as their family members encouraged the participants to stay on track with their treatment adherence. The participants felt that their friends supported them through limiting their own sodium intake while they were together. The emotional support was important because the participants felt that they had someone caring for them.

Another technique that was used was internal motivation. The participants were aware that they were not always following treatment. However, they would try their best to exercise and eat a heart healthy diet. Most of the participants reported that even small changes helped them create a positive outlook for the future.

One participant reported that he motivated himself more than anyone else did. His reasoning was that he was consistent, put in hard work, and made healthier choices. He realized that these changes were effective when he had to stop his normal routine for a few days. Therefore, he is continuing the treatment that his doctor recommends.

Another motivating technique that was used experiencing symptoms from the disease. The participants reported that they experienced symptoms such as dizziness, headaches, blurred vision along with other symptoms. Management of these symptoms became a priority because the participants did not want to experience the symptoms again.

Most of the participants were satisfied with managing their symptoms because they were also afraid that their disease would progress. One of the participants reported that he was managing the disease for six years even though his adherence was not consistent with treatment. Most of the participants were afraid that their symptoms would spiral out of control, and they would end up in the hospital.

One participant reported that after his heart attack, he felt that he wouldn't survive. When the doctor told him that the surgery was a success, he made the doctors' appointment a priority. This motivated him to follow doctors' orders because he has the desire to live.

Table 3 presents common themes based on significant responses from the participants and formulated meaning of the techniques that participants used in order to adhere to treatment.

Table 3*Themes from Significant Statements and Formulated Meaning*

Significant Statement	Formulated Meaning
I feel supported by my family and friends. It's nice to have that emotional support	Emotional support
I know that I have to manage my blood pressure daily because I don't want to experience other symptoms.	Managing symptoms
I thought that if I don't follow a diet and exercise plan, I may die.	Fear of disease progressing
Get the blood pressure machine or 2 so you can check the heart rate.	Following doctors' advice

Theory

The theory from this study is the importance of work-life balance. Most of the participants prioritized their work and their family over their health. This finding is important because physicians should consider different factors that may prevent a patient from adhering to their recommendations. They can give the patients specific diet or exercise plans that patients can follow from home.

The personalized treatment would be helpful in that it may help patients more than just managing the disease. Most of the participants were not completely adhering to

treatment, however they were comfortable with their progress. Perhaps an individualized treatment plans may show more progress with treatment.

Summary

Cardiac patients face many obstacles when they have to follow treatment adherence. The participants improvised their exercise and dietary recommendations based on their lifestyle. Common themes included managing symptoms through knowledge of the disease and understanding that the disease can become worse.

The participants displayed resiliency through internal and external motivation. They were able to motivate themselves to initiate changes and stay as consistent as possible. The participants remained positive about their changes and continued their treatment.

CHAPTER 5: DISCUSSION

Overview

This phenomenological investigation sought to explore techniques used to make doctor-recommended changes to diet and exercise in patients with cardiac disease. The study chose semi-structured interviews to facilitate open conversations about patient experiences in treatment disease. This chapter will summarize the findings, discussion of the findings, implications, limitations, and recommendations for future research.

Summary of Findings

While the participants described many factors regarding their experience with treatment adherence, there were many themes that were presented from the research questions. Most of the findings were consistent with previous studies such as motivation, self-efficacy and resiliency. However, there was a theme present that was not included in previous research which was improvising diet and exercise in order to fit current lifestyles. Therefore, it can be argued that an individual's lifestyle is more important than their health. Therefore, managing symptoms is more of a priority than following recommended treatment.

Discussion of Findings

As mentioned in Chapter 2, self-endorsed reasons for motivation and self-efficacy beliefs appear to play a role to inspire consistent self-care among people with a cardiac diagnosis. The techniques that are used for consistent self-care are in question due to the longevity of the disease. Motivation can play an integral role in treatment adherence because there are reasons as to why the individual wants to change their lifestyle. The results align with Karimi-Dehkordi and Clark (2020) where individuals focus on their

emotional and physical values. In this study, all of the participants had emotional support that drove them to maintain a healthier lifestyle than they had before heart disease.

Support was very crucial in treatment adherence. All of the participants had an individual/multiple individuals who motivated them to keep adhering to treatment. This aligned with the studies by Bahari et al., 2019; Vellone et al., 2019 which indicated that patients need to have familial/peer support. The current study indicates that patients managed their symptoms so they could care for others (children, mother). They also managed their symptoms so they could spend time with their friends.

Self-efficacy is important in that individuals must have the confidence to make positive changes. Contrary to the results in study by Prochota et al. (2019), the current participants were very aware about their dietary restrictions and when they were not following the recommended dietary plan. However, their reasoning behind not following the diet was mostly because of their lifestyle. If they did not have time to cook or worked long hours, they chose fast food over healthy food knowing that they were going against their dietary recommendations.

This study suggests that knowledge of the disease is important as participants realized that their disease could spiral out of control. The participants had knowledge of the disease because they mentioned that attending doctor's appointments and following guidance was important. The participant who experienced a heart attack followed the more of the doctor's advice than the other participants. Therefore, the results indicated about knowledge of the disease align with Seid et al. (2019) that knowledge is important as patients are more adherent to treatment when they have the knowledge.

Resiliency was displayed in all of the participants because they were able to cope and recover from a stressful event. Contrary to the study by (van Rijn et al., 2020), the oldest participant seemed to display the highest level of resiliency being that he recovered from a heart attack and Covid 19. Therefore, it can be argued that resiliency can fluctuate based on age and their diagnosis. For example, a patient in their 30s with only high blood pressure may display lower levels of resiliency than a patient in their 60s who experienced a heart attack.

In this study, most of the participants were not successful in implementing dietary and exercise changes. Therefore, it can be argued that the participants are in the preparation stage of the transtheoretical model of change (Prochaska & Marcus, 1994). They are taking small steps to change their behavior; however, they are not fully committed to making necessary long-term lifestyle changes. Perhaps if participants perceived more of an urgent threat to their health, that would inspire them to make dietary and exercise changes a priority.

It is interesting that in a meta-analysis, higher levels of resilience were related to a lower incidence of adverse cardiovascular outcomes (Won Park et al., 2021). It could be that the participants in this study, due to their low resilience in implementing the dietary and exercise recommendations, are actually more at risk for a future cardiac event than they perceive. Identifying ways to help people feel a more urgent need to prioritize making the doctor-recommended changes, or trouble-shooting with them to determine techniques to accommodate their work and family lives may help.

This study fits into the biblical foundation in that patients are caring for their body in the best way possible. Even though they received an unfavorable diagnosis, they were

able to motivate themselves and even find motivation from others. They were able to look past the initial diagnosis and manage symptoms so they could keep living.

Implications

This study has many implications for cardiologists, counselors, and mental health considerations in academia. While individuals become more adaptive to their lifestyle, cardiac health concerns cause individuals to navigate their life in a certain way. This process may not be easy without the support of others whether it is personal or professional support. This process can be especially difficult if family or peers do not change their own habits while they are around the patient with cardiac disease.

This study can be beneficial in understanding that certain factors such as work, and life play heavy factors even when an individual has cardiac disease. While health is important, it's just as important to take care of family and earn a livable income. Therefore, professionals should be empathetic to patients' needs and provide individualized treatment so that the patient may be more likely to follow recommendations.

Limitations

The limitations of the study included the recruitment of participants. While I wanted to choose participants from Liberty University, I was not able to recruit due to technical difficulties. I recruited through social media. However, most of my recruitment attempts were flagged as spam because the online community felt that I wanted to collect their personal information. This also caused a barrier in recruitment because members of

the online community belonged in multiple groups. Therefore, I would recommend that social media not be used for this study.

Another limitation of the study was that the study was all male participants. Creswell (2007) indicated that participants in a study should be chosen in a way where all of them experience the same phenomenon (p.83). Therefore, it could be argued that cardiac disease could be more prominent than men based on the current study. However, there may have been different results if there were female participants in the study. Another limitation was the diagnoses received from the participants. 3 of my participants had blood pressure and were from ages 38-44 which is relatively close in age. The 4th participant was 61 and experienced a health attack and coronary heart disease and his responses to the questions were very different than the rest of the participants. Perhaps, there would have been different answers if the diagnoses were varied.

Recommendations for Future Research

The recommendation for future research is that there should be personalized programs created for each participant. Physicians should take into account different factors that affect an individual. For this research, participants would have benefited from exercise programs that worked around their work hours. They would have also benefited from flexible doctor's appointments which could have encouraged them to learn about their diet and exercise adherence on a deeper level.

Another recommendation for future research is to study participants based on their age group. This may clarify adherence and adherence techniques based on specific age groups. This way, a personalized treatment plan for a patient in their 30s is not the same as a patient in their 60s.

Another recommendation is that this study incorporates a cardiac disease support group. This may indicate the amount of significance support has on long term treatment adherence. This may help patients motivate each other because they may also have an understanding of the disease and symptoms.

Summary

The results of this study indicate that patients must have motivation, self-efficacy, and resiliency in order to manage heart disease. They must be able to keep making changes to adherence or even find the correct treatment for themselves. They must have the ability to battle any weaknesses in their mental health in order to motivate themselves to comply with treatment.

The implication for this research is to provide understanding from patient views. Understanding a patient's lifestyle helps professionals provide support based on the patient's needs. This support may benefit the patient in the long term.

Patients should be evaluated on a personal basis so the healthcare provider can assist with helping patients become successful in implementing dietary and exercise changes. Patients should also evaluate their barriers and ways to overcome challenges in order to be successful.

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APPENDIX A: Recruitment Letter

Dear Participant:

As a doctoral candidate in the School of Psychology at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to explore techniques used to make doctor-recommended changes to diet and exercise in patients with cardiac disease, and I am writing to invite eligible participants to join my study.

Participants must be 18 years of age or older and under 65 years of age with cardiac disease. Participants, if willing, will be asked to take part in a virtual, audio-recorded interview which should take approximately one hour. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please complete the attached survey and contact me at [REDACTED] [REDACTED] for more information or to schedule an interview.

A consent document will be given to you one week before the interview. The consent document contains additional information about my research. If you choose to participate, you will need to sign and return the consent form to me prior to the interview.

Sincerely,

Amy Rechner
Ph. D Doctoral Candidate

[REDACTED]

APPENDIX A: Social Media Recruitment

ATTENTION FACEBOOK FRIENDS: As a doctoral candidate in the School of Psychology at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to explore techniques used to make doctor-recommended changes to diet and exercise in patients with cardiac disease, and I am reaching out to eligible participants to join my study.

Participants must be 18 years of age or older and under 65 years of age with cardiac disease. Participants, if willing, will be asked to take part in a virtual, audio-recorded interview which should take approximately one hour. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please complete the attached survey and contact me at [REDACTED] for more information or to schedule an interview.

A consent document will be given to you one week before the interview.

Sincerely,

Amy Rechner
Ph. D Doctoral Candidate
[REDACTED]

APPENDIX B: Informed Consent

Consent

Title of the Project: Exploring Techniques Used to Make Doctor-Recommended Changes in Diet and Exercise for Patients with Cardiac Disease

Principal Investigator: Amy Rechner, Doctoral Candidate, Psychology Department, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be over 18 years of age and under 65 years of age. You must be diagnosed with heart disease as well. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to explore techniques people with cardiac disease use to overcome challenges to making doctor-recommended changes to diet and exercise. It is common for people to experience set-backs such as forgetting, missing opportunities, or getting derailed by temptations, distractions, or unwanted internal states (e.g., mood, exhaustion) to successfully stick to their diet and exercise plan. I would like to identify what helps people overcome these obstacles with the idea that sharing this information could help other cardiac patients to be successful in making heart-healthy diet and exercise changes.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following:

1. Take part in a virtual, audio-recorded interview which should take approximately one hour.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include gainer deeper understanding of what helps cardiac patients overcome obstacles in making heart-healthy diet and exercise change.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject with. Research records will be stored securely, and only the researcher and faculty sponsor will have access to the records.

- Participant responses will be kept confidential by replacing names with pseudonyms.
- Interviews will be conducted in a location where others will not easily overhear the conversation.
- Data collected from you may be shared with other researchers. If data collected from you is reused or shared, any information that could identify you, if applicable, will be removed beforehand.
- Data will be stored on a password-locked laptop. After three years, all electronic records will be deleted.

How will you be compensated for being part of the study?

Participants will not be compensated for participating in this study.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address or phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Amy Rechner. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [REDACTED]. You may also contact the researcher's faculty sponsor, Gilbert Franco, at [REDACTED].

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

The researcher has my permission to audio-record me as part of my participation in this study.

Printed Subject Name

Signature & Date

APPENDIX C: Eligibility and Demographic Information

Eligibility Questions:

Age: _____ (if 18-65, will be advanced to the next question)

Cardiac Diagnosis:

- a.) Hypertension
- b.) Congestive heart failure
- c.) Myocardial infarction (heart attack)
- d.) Arteriosclerosis
- e.) Coronary heart disease
- f.) Other (list)

(if selects one of the above, the consent form will be provided)

Demographic Questions:

Race:

- a.) White
- b.) African American
- c.) Asian
- d.) American Indian/ Alaskan Native
- e.) Hispanic
- f.) Other (list)

Gender:

- a.) Female

b.) Male

c.) Other (list)

Work Status:

a.) Full Time

b.) Part Time

d.) Retired

e.) Unemployed

Marital Status

a.) Married/Cohabiting

b.) Divorced

c.) Widowed

d.) Single

Highest Level of Education

a.) Less Than High School

b.) High School

c.) Bachelor's Degree

d.) Master's Degree

e.) Doctorate

Year diagnosed with heart disease: _____

APPENDIX C: Interview Questions

1. When thinking about your heart disease, what is your overall understanding of treatment adherence?
2. Thinking back, tell me about anything that someone (health care provider, family, friends) said or did that helped you to understand how important it is to take care of yourself when you have heart disease, or changed your understanding of the treatment adherence.
3. What would you say has been the biggest motivators for you to follow the heart disease care recommendations?
4. When thinking about heart disease, what things are you doing to take care of your heart disease?
5. Tell me about the things that get in the way of you following the recommendations for a low sodium diet or limit your fluids as directed.
6. Tell me about a time when you were able to follow the diet or fluid restriction when it was difficult and how you were able to do that.
7. Tell me about the things that get in the way of you following the recommendations for exercise.

8. Tell me about a time when you were able to follow the recommended exercise regimen when it was difficult and how you were able to do that.
9. If you could tell other patients with heart disease something that would help them feel better and stay out of the hospital, what would it be?
10. Tell me about times you have felt afraid about your heart disease.
11. What sorts of things have helped you feel less afraid?
12. Talk to me about the things you feel discouraged about right now in regard to your diet and exercise plan.
13. Tell me about a time you can remember when you felt hopeful about your diet and exercise plan.
14. Tell me about the things that feel out of control in regard to your diet and exercise plan.
15. Tell me about some techniques that help you to feel more confident in your ability to be consistent in your diet and exercise plan.
16. Who have you felt supported by? Who has been the most helpful in giving you the support you need? What kind of support has been most helpful for you?

17. What thoughts, feelings, or emotions did you use to overcome obstacles to sticking to your heart-healthy diet and exercise plan?

18. What has inspired you to continue following the recommended diet and exercise changes?

APPENDIX D: Permission from Previous Authors

[External] RE: Permission to Use Interview Questions for Dissertation

Guitarpsy Saku <[REDACTED]>

To: Rechner, Amy Bhupendra +1 other



Sun 10/9/2022 8:05 PM

[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

Yes. I'm glad that our interview questions benefit your study.

Nanchatsan Sakunpong

ในวันที่ อ. 9 ต.ค. 2022 22:21 Rechner, Amy Bhupendra <[REDACTED]> เขียนว่า:

My name is Amy Rechner and I am a student at Liberty University. I am working on my dissertation where I am exploring motivational factors of treatment adherence in patients with cardiac disease. I came across your study (A Mixed-Methods Study to Develop a Resilience Scale for Thai Elderly with Chronic Diseases and Depression) and would like to ask permission to use the interview questions what were used in this study. I would have to alter the questions so that they would read " heart disease" instead of "adversity." Thank you in advance.

Thank you,
Amy Rechner

From: Julie Bidwell <[REDACTED]>
Sent: Monday, September 26, 2022 11:57 AM
To: Rechner, Amy Bhupendra <[REDACTED]>
Cc: Elena O Siegel <[REDACTED]>; Dianne Hyson <[REDACTED]>; sharon.myers02 <[REDACTED]>
Subject: [External] RE: Permission to Use Interview Questions for Dissertation

[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

Hi Amy,
Thank you for reading our study and reaching out. Since the interview guide is available as a published supplement, you are welcome to use it and adapt it (if appropriate) as long as you cite the original publication. Best of luck with your dissertation work.
Warm regards,
Julie

Julie T. Bidwell PhD, RN
Assistant Professor

Betty Irene Moore School of Nursing at UC Davis
Betty Irene Moore Hall
2570 48th St.
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