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Hearts in the Balance: The Impact of Desired Versus Received Social Support Needs on Persons with Heart Failure

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HEARTS IN THE BALANCE: THE IMPACT OF DESIRED VERSUS RECEIVED SOCIAL SUPPORT NEEDS ON PERSONS WITH HEART FAILURE

DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Nursing at the University of Kentucky

By

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Lexington, Kentucky

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Lexington, Kentucky

2016

ABSTRACT OF DISSERTATION

HEARTS IN THE BALANCE: THE IMPACT OF DESIRED AND RECEIVED SOCIAL SUPPORT NEEDS ON PERSONS WITH HEART FAILURE

Social support is the collection of tangible and intangible experiences that surround people as they cope with daily stressors. High quality social support is important among patients with cardiovascular disease (CVD) because it has positive effects on social, psychological and physical well-being, and those with good social support cope better with the travails of CVD. Although there are many studies of social support in CVD, little work has been done on the topic of discrepancies between desired and received social support in the context of gender.

The purpose of this dissertation was to determine if there are gender differences in the discrepancies between CVD patients' desired and received social support. If gender differences exist in desired and received needs for social support, it is necessary to identify how these differences might affect rehospitalization and mortality rates. Three manuscripts are included in this dissertation: 1) a comprehensive review of the literature to examine gender differences in CVD patients' perception of the concordance between desired and received social support and if gender differences in patients' perception of concordance are associated with differences in health outcomes; 2) a secondary analysis of a cross-sectional observational study to determine whether there is a differential relationship between perceived social support and depression in African American and Caucasian patients with heart failure (HF), and 3) a longitudinal observational study to determine if the discrepancy between desired and received support for individuals hospitalized with an exacerbation of HF is associated all-cause event-free survival.

I identified a gap in the literature regarding the differences in received and desired levels of social support between genders that warrants further investigation. In the secondary analysis, I found that race moderates the relationship between perceived social support and depressive symptoms. Higher levels of perceived social support were associated with lower levels of depressive symptoms among Caucasians who had higher levels of depression. Among African Americans, depression levels were lower and were unaffected by level of social support. In the longitudinal observational study, 157 participants identified desired and received support upon enrollment. The participants had follow-up at one- and three-month post discharge intervals to determine if they had experienced rehospitalization or mortality during the period. In unadjusted and adjusted analyses neither gender nor social support congruency score group were predictive of all-cause event-free survival. This finding belies the common belief that too much support will smother the patient, causing cardiac invalidism. Despite this, further research is needed to continue to evaluate ongoing discrepancies between genders of desired and received support and their impact on health outcomes. Further research is also needed to establish accuracy in more appropriately matching social support received with the social support desired.

KEYWORDS: cardiovascular, social support, social support need(s), coping, and perception

Melanie Pfohl Schrader

May 6, 2016

Date

HEARTS IN THE BALANCE: THE IMPACT OF DESIRED VERSUS RECEIVED SUPPORTNEEDS ON PERSONS WITH HEART FAILURE

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To Willie

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I also extend my deep gratitude to my husband Bill for his willingness to sacrifice our time together for the pursuit of this goal and his unwavering belief in my ability to complete this level of my education. And, deep thanks to God who has allowed me the strength to continue to pursue this tumultuous journey even when I doubted my ability to reach the end.

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Social support--Life support for individuals with cardiovascular disease?

Cardiovascular Disease

Individuals diagnosed with cardiovascular disease (CVD) today have access to medications and innovative treatments that have reduced symptoms and prolonged life expectancy. Despite this, annual deaths from CVD in the United States remain high with approximately 788,000 deaths (or 235.5 per 100,000 persons) occurring in 2010.[1] Almost 1 out of 3 deaths each day are due to CVD.[1]

Cardiovascular disease risk is not uniform. Yearly, approximately 278.4 deaths per 100,000 Caucasian male deaths are attributed to CVD while fewer Caucasian female deaths (192.2 per 100,000) are ascribed to CVD.[1] African Americans of both sexes have higher death rates than their Caucasian counterparts with African American men facing a death rate of 369.2 per 100,000 and African American females suffering losses of 260.5 per 100,000.[1]

In addition to the mortality attributed to CVD, the economic and physical toll on the United States (US) is overwhelming. In 2010, CVD cost the U.S. about $109 trillion for healthcare, medication, and lost productivity. [2] Although more than 50% of CVD deaths in 2008 were men, greater than one-third of deaths among American women are attributed to heart disease with five times more women dying annually from myocardial infarctions (MI) than from breast cancer.[2]

Some of the most common risk factors for CVD include obesity, diabetes, hypertension, elevated cholesterol, and smoking.[2] Despite vigilant work by health care professionals to encourage those at risk to reduce the likelihood of CVD by working to prevent or eliminate modifiable risk factors, CVD continues to strike hundreds of thousands of Americans with debilitating symptoms and disorder such as angina, MI, heart failure, and arrhythmias.[2, 3]

As researchers and clinicians focus on reducing the physical symptoms of illnesses, individuals with CVD also are faced with emotional and social challenges. [4, 5] One aspect of individual health seldom evaluated in clinical practice that is clinically significant and of increasing importance in research is the effect of interpersonal relationships on outcomes. These relationships produce what is called social support.

Social Support: Defined

Social support is defined as the various types of assistance or help that people receive from others. Frequently identified as a process for vulnerable persons to receive assistance during times of need, social support is not only provided in times of crisis.[6, 7] It has been described as "beginning in utero, is best recognized at the maternal breast, and communicated in a variety of ways, but especially in the way the baby is held (supported)".[6] Social support is a collection of intangible and tangible interpersonal experiences that surround us as we cope with daily stresses and adjust to change.[6, 7] Supporters can be diverse and include close and extended family members, friends, co-workers, healthcare providers who share in both life's joys and sorrows.[6]

For patients with CVD, social support functions as a "social fund" from which they can draw when handling stressors.[8] In this context, social support is the summation of actions and resources provided in a time of need. Stressors can be environmental, interpersonal, or physical demands that create physiologic or emotional changes resulting in the perception of distress. [8] To resolve or reduce distress, social support may be acquired from supporters.[8, 9] Reported to have positive health effects, these social connections help an individual attain essential information and tangible resources and foster belonging and empowerment.[10]

Social Support: Positive versus Negative

Regardless of the positive health effects received from social support, not all relationships established or volunteered, provide a positive impact.[8] In fact, social support from those (including spouses, relatives, and health care professionals) who feel obligated and who resent the need to provide support may serve as a stressor to the patient who perceives the provider's ambivalence. Such social support may overshadow the positive impact of any assistance provided.[8] Support, however, rendered by those who want to provide support and who feel they have the resources to provide support, is seen in a positive light by the recipient and produces benefits.[8]

Another factor that can alter the effectiveness of social support is the chronicity of the recipient's stressor. Individuals who experience acute, short-term periods of crisis often experience an outpouring of assistance and encouragement that effectively helps them cope with the crisis.[8] Additionally, satisfaction with received support with social support may change over time.[11]

Needed and desired social support for chronic stressors may evolve as the stressor becomes prolonged. As evolution from acute to chronic needs occurs, the recipient may perceive previously-received acceptable support as inadequate and the quest for additional support may lead to increased stress, distorted judgement of available support resources, and supporter fatigue.[11] As a result, patients with chronic conditions may find long-term support more difficult to obtain.[8, 9] The need for support over extended periods can result in tension among support providers with resulting conflict, bitterness, and deterioration of the relationship.[8, 9, 12]

Social Support: Types

There are three types of assistance that are associated with good social support—emotional support, instrumental support, and informational support.[13-15] Support of all three types can come from healthcare providers, others with the same condition, family, friends, co-workers, and from media sources.

Types of emotional support include listening to concerns, conveying approval, supporting and encouraging healthy behaviors, and displaying caring behaviors.[16] For example, supporters provide emotional support when they listen to individuals' worries and concerns. Such support helps meet the recipients' needs for affection, attention, and companionship.[9] Additionally, emotional support can enhance self-esteem, reduce anxiety, lower depressive symptoms, provide motivation, and enhance coping during stress.[9]

Instrumental support occurs when supporters supply useful, concrete assistance for routine or unexpected problems.[9] Examples of instrumental support include delivery of tangible goods or services including money, transportation, child care, household maintenance, and food.[9, 16] Instrumental support provides recipients with respite from routine, but sometimes overwhelming, everyday worries.[9]

Informational support is advice or counseling from supporters who provide knowledge or expertise in order to help the recipient solve problems, gain access to available resources, or learn about potential solutions for current concerns.[9] Informational support assists an individual gain knowledge and experience, provides increased access to useful information and needed services, and increases capacity to cope with stressors more effectively.[9, 16]

Social Support: Theoretical Framework

One of the most prominent theories used to explain the positive effects of social support is the stress-buffering theory of social support.[12] Stress-buffering theory describes the interaction between current or future stressors and influences that minimize or eliminate their impact on the affected individual.[17] Theorists postulate that under the stress-buffering theory social support has the ability to reduce or prevent physical or emotional damage ensuing from the individual's contact with the present or impending threat.[9, 18] Through its capacity to promote positive outcomes and insulate the individual, social support provided kindles a constructive stress that can enhance self-worth and sense of purpose.[19] Additionally, social support increases social interaction and the potential for subsequent socialization, which augments access to additional community resources and health-promotion activities.[19]

Appropriate social support during a time of physical or emotional stress is thought to have a buffering effect that protects the recipient from the full impact of a stressor.[12] The buffering effect is produced by the recipient's perception that supporters (including healthcare providers, family members, friends, and co-workers) will provide the emotional support, goods and services, and information necessary to outlast the current crisis.[9] This perception mitigates the loss of recipient reserves, reduces perception of the severity of the event, and lessens maladaptive responses to stressors.[12, 20, 21]

In 1985, after reviewing more than 40 studies in which the relationship between social support and the impact of negative life stressors was examined, Sheldon Cohen and Thomas Willis noted the occurrence of stress buffering when the perception of available social support needed was "matched" to the needs created by the stressor.[16] Cohen and Willis found that stress-buffering does not occur from "confounding" of stress and social support.[22] Rather stress-buffering was found to emerge from perceptions of available support and quality of available support.[22] They also concluded that there are differences in individual and group support needs and that there is little evidence of negative effect of social support on symptomology.[22]

In Cohen's and Willis's stress-buffering theory (Figure 1), social support can intervene at two different times in the evolution of the stressful event (e.g., illness) and minimize the actual or potential effects of the stressor. In the model, the first area where social support can influence the stress response occurs prior to (or shortly after) the occurrence of the stressor.[22] At this time, the individual "appraises" his available resources, enumerates those who can provide additional assistance, and evaluates potential for actual harm.[9, 18, 22] Thus the perception of the presence of social support helps the individual interpret the severity of the event, and increases ability to cope with the upcoming threat.[22]

The second area of influence occurs when the individual experiences the effects of the stressor or stressors. At this point, ongoing social support reduces the emotional impact of the stressor and the likelihood of an adverse physiological or psychological reaction.[18] As the effects of the stressor continue, so does the ability of received social support to reduce negative reactions.[18] Thus social support disrupts the connection between the stress of the event and onset of physical symptoms reducing reaction to the perception of stress and its negative impact of individual health.[22]

An assumption of this theory is that social support is appropriate and perceived as effective by the patient, and that it is congruent with that desired by the patient. There is, however, a dark side to social support.

The Dark Side of Social Support

Although social support commonly is viewed as being positive, there is a dark side to social support. Social support that is more than desired may be viewed as smothering or belittling, thus leading to more and not less distress during an illness.[23] On the other hand, social support that is less than desired may lead to feelings of isolation, again leading to increased distress.[23] Although researchers have acknowledged that emotional support is regarded as most desired support with instrumental support least desired, the amount and type of support desired is often associated with the identity of the available supporters.[23]

Emotional support is usually welcomed from any source. However, some types including unyielding optimism regarding prognosis, minimizing problems, and false reassurance, can lead to increased distress.[23, 24] Particularly damaging to the recipient is the absence of emotional support from a spouse or significant other.[23] Despite the importance of contact from family and other friends, both excessive telephone contact and intense emotional responses by supporters also enhance distress.[24]

Instrumental support provided by family is usually preferred by patients to that provided by friends or health care professionals.[23, 24] The desire for instrumental support often varies based on current level of disability.[23] Distress, however, is increased when conflicts develop between supporters willing to meet support needs or when supporters are perceived as “taking control” of the recipient’s independence.[24]

Conversely, patients prefer to receive informational support from healthcare professionals.[23, 24] If, however, adequate information is not provided for the patient to take action, informational support becomes a source of distress.[23] Additionally, informational support in the form of unsolicited advice, despite the good intentions of the supporter, increases recipient distress.[23, 24] Further compounding the complexity in conceptualizing social support, is the finding that multiple personal variables influence perceptions of social support.

Factors Influencing Perceptions of Social Support

Although support has been characterized as emotional, instrumental, and informational, it is important to recognize that these forms of support are seldom “prescribed” and that many social support deficits may be related to the support structure of the patient.[22] The patient who can identify many sources of social support usually perceives greater access to emotional and tangible support. The patient also has the potential for easier access to informational support, which reduces emotional distress.[22]

Patients Willingness to Receive Social Support. Social support is not simply the provision of assistance to a vulnerable individual when needed. Social support also involves the willingness of the patient to receive tangible or intangible assistance from the supporter.[25] Social support transactions cannot be successful without the patient's willingness to accept the assistance.[25] If the recipient is not able or willing to receive the support offered, outcomes may not be improved even when social support is provided.[25]

Match of Support Type and Type Desired. Even if the patient is willing to accept assistance from supporters, buffering can only occur if the types of support offered are a match to the support needed.[26] Offers of tangible support when emotional support is needed or providing informational support in the face of a tangible need will not be useful in stress reduction.[26] Additionally, as improvement in self-esteem can reduce perception of the impact of many stressors, receipt of emotional support (known to enhance self-esteem) is notably beneficial in buffering stress.[26]

Other factors identified as effecting the quality and the receipt of desired amounts of social support include the interconnectedness of the group (or density) of people available to the patient for support, the direct contacts between members (or degree), and the proximity to the patient (or dispersion.).[910 ,12,23,28-34] Density describes the characteristics of the support group and includes attachment and shared religion, occupation, or socioeconomic class.[27] Being married, having many friends, and being a member of a religious group or organization are identified as variables promoting health.[27] Patients who identify robust group interconnectedness (high density) are acknowledged as experiencing a level of protection from strong group ties.[27]

Characteristics of the Support Structure. Degree of contacts is reported to be predictive of the quality of social support. While physical contact with individuals needing support can increase as their activities of daily living (ADL) demands escalate, many supporters intensify contact with the patient not only from necessity but also related to affection and concern.[28] Because instrumental needs often increase as the patient's status changes, contacts of well supported individuals also increase related to intimacy and the desire to provide assistance forged from close friendships.[28] While women are more likely to report greater contact with family and other friends, older men with few economic resources acknowledge fewer supportive contacts and decreased levels of emotional support despite having access to male friends.[28, 29].

Many researchers have also observed that the proximity of the supporters to the patient is another variable which alters the effectiveness of social support and health outcomes.[30] While closeness of supporters can provide comfort to the individual, proximity can be a detriment in communities where both the individual and supporters have poor access to healthcare, are exposed to environmental hazards, and are habituated to stress.[27] For most individuals, however, proximity is identified as protective. Individuals who have strong supporters in close proximity are more resilient to periodic negative interactions, including disagreements or inability to receive a desired resource than those with supporters not in close proximity.[31]

Marital Status. Individual support needs and emotional distress can be altered by marital status. Increased financial resources, assistance with care needs, symptom management, and aiding in adherence with treatment regimen are all potential advantages for married individuals.[32] However, the social support benefit received from marriage varies related to the quality of the marital relationship, the duration of care needs, and the ability of the supporter to meet spousal needs.[32]

Sex. Regardless of marital status, supporters enlisted may vary related to the patient's sex.[33] Men are less willing to openly receive emotional support from other men, preferring the emotional support offered by women.[34] Conversely, when participating in online support groups, men are more likely to seek out other men whose online posts are characterized as authoritative.[33] Men whose messaging acknowledges and encourages articulation of feelings in online support groups are often evaluated by their peers as unrealistic and unlikable.[33]

Women are more open to discussing their feelings and receive emotional support from either men or women.[20] When women utilize online social support, they tend to write freely about emotions and their postings contain more sympathetic content.[33] Women are more likely to include personal information and write about family, specific concerns and positive sentiments.[33] They are also reported to display more warmth in their signatures.[33]

Aside from online support groups, men desire social support elicited from a variety of modalities including the following: receipt of health-related instructions from a health-care provider, the presence of a spouse, and social interactions that occur in the workplace.[34] Men most commonly identify supporters to include the small social circles often associated with employment or a group activity.[34] Therefore, those men who are single or are no longer employed (related to retirement or disability) are at increased risk of isolation and, subsequently, mortality as health declines.[15, 35]

Women with large social circles and frequent supporter contact have a lower likelihood of mortality than women with moderate or small amounts of contacts.[34, 36] Married women, however, do not always identify their husbands as integral members of their social circles.[37] Instead, married women are less likely to identify their spouses as providing adequate support and have been reported to have a greater risk of death than married men with CVD.[37]

Congruence Between Desired and Received Social Support

Effective social support provides the patient with a sense of feeling important, loved, and appreciated when partnered with a group of supporters invested in the common goal of improving health outcomes.[6] Concern for wellbeing and identification of individual needs are also identified as essential in achieving an effective balance between received and desired social support.[38] Although researchers have noted that some patients develop dependence and self-identify numerous needs (albeit adequate levels of social support), supporters should anticipate that feeling “overprotected” can be the catalyst for the self-reliant patient to embrace or reject offers of social support.[39, 40] While rejection of offered support can be a patient’s declaration of independence, embracing social support when not needed may be a method to expresses gratitude for supporters' interest and means to moderates the supporters' anxiety and guilt.[39, 40]

Congruence between desired and received support is also assessed by examining cultural influences on support requirements.[7] Most patients in the United States are perceived as independent individuals (individualistic) who make their own decisions regarding healthcare treatment and goals.[7] Patients from collectivistic cultures, however, view themselves as one member of an interdependent group and that their personal goals are secondary to group goals.[7] Since patients from collectivistic cultures do not want to inconvenience supporters with their individual needs, they are less likely to identify desired social support than those from individualistic cultures.[7] Therefore, congruence of social support is most likely to occur when the balance of amount, timing, source, structure and function of the support provided is agreed upon by the patient and supporters.[39]

Despite its significance for patients with CVD, there is a dearth of research regarding the impact of the difference in the desired and received social support in men and women. Determining if the types of social support desired and received vary between men and women with CVD is vital to move the study of social support forward.[41] Evaluation of gender-related differences in the perception of desired versus received social support is important to the comprehensive study of factors that affect health outcomes of persons with CVD. [14, 34, 42-48]

If gender is associated with differences in the way patients appraise any discrepancies between desired and received social support, it is then important to identify differences in the support requirements of men and women. Additionally, once gender-related support requirements are identified, it is also necessary to determine how these differences may affect the health-outcomes of individuals with CVD.[40]

The central hypothesis of this dissertation is that there are gender-related differences in desired and received social support among patients with CVD. This dissertation employs a model to describe the outcomes of men and women with CVD related to received and desired social support (Chapter 4) and perceived social support and depression (Chapter 3). The conceptual model (Figure 2) is adapted from Cohen's and Willis's model for stress-buffering and social support.[22] The stress-buffering process begins with the support.[22] The stress-buffering process begins with the occurrence, presence, or threat of stressors,(emotional, financial, and physical).[22] Once these stressors have occurred the individual enters a period of stress appraisal.[22] After stress appraisal, a physiological or behavioral response occurs. The outcome of interest—mortality or rehospitalization—is the result of the stress response. While gender may have not had an impact on some stressors, it has an impact in stress appraisal, the response generated by that appraisal, and subsequently, on the outcomes. Therefore, the influence of the mismatch between received and desired social support between sexes has an impact on both rehospitalization and mortality.

The following chapters include a comprehensive review of the literature, a secondary analysis, and results of a descriptive study identifying discrepancies in outcomes for patients with HF by sex related to perceptions of desired and received social support.

Summary of Subsequent Chapters

Chapter Two, *Are men really from Mars*? is a comprehensive review of the literature. There has been limited research about the impact of gender-related differences in the congruence of social support desired and received on health outcomes for patients with CVD. Despite the scarcity of research, researchers have demonstrated that gender-related differences in desire for social support may influence the understanding of how social support effects the health outcomes of individuals with CVD[10, 15, 20, 36, 44, 45, 48, 49]. The purpose of this literature review was to examine differences in perceived social support needs between men and women with CVD.

Throughout the dissertation, the term "gender differences" was used to refer to the differences between men and women. Although many researchers whose references are cited in this dissertation interchange the terms "sex" and "gender", the dissertation will identify sex as referring to "physical characteristics that differ in males and females, such as chromosomes, hormones and reproductive anatomy".[50] Gender will be used to identify individuals related to their masculine or feminine traits or behaviors.[50] Researchers have identified that the terminology has evolved with changing society. In 1960, the sex-to-gender terminology ratio determined by researchers searching PsychINFO was 211.13.[50] A sex-to-gender assessment of PsychINFO articles published between 2000 and 2011found that the ratio was 0.62.[50] Thus, the dissertation will use the term "gender" in its chapters.

I reviewed six published research articles and determined the following: 1) few investigators have examined the influence of gender differences on patient's identification of needed social support; 2) men were more vulnerable than women to poor outcomes if they live alone, were experiencing financial distress, or had a high level of disease severity 3) women were more likely to desire more support than they received. From this work, I determined that men and women with CVD benefit from different types of support and that it is important to evaluate if the gender-associated support provided to these individuals varies from the traditional support offered. Therefore, I did the next study.

In Chapter Three, a secondary analysis, I examined the differences in the clinical and sociodemographic profiles between African American and Caucasian men and women with heart failure (HF) and their relationship to depression.[51] Regardless of profile, the development of depressive symptoms is common both groups.[52] Depressive symptoms can impact the ability of individuals to adjust to their illness and these symptoms can have a negative impact on health outcomes.[52] The quality and quantity of social support provided to chronically ill African Americans and Caucasians varies.[53] Individuals who perceive greater social support report fewer depressive symptoms. Therefore, the objective of this secondary analysis was to determine if there was a differential relationship between social support and depression in African American and Caucasian patients with HF.

I used baseline data of 323 individuals from the RICH Heart HF registry who had all of the variables of interest and determined the following:1) there were no differences between the two racial groups in education level, NYHA class, living alone, depressive symptoms, or perceived social support, 2) younger age, lower education level, worse NYHA class and lower levels of perceived social support were associated with higher levels of depressive symptoms and 3) higher levels of perceived social support were associated with lower levels of depressive symptoms. From this work, I have concluded that although higher levels of depressive symptoms were indicated by both African Americans and Caucasians who report low levels of social support and lower levels reported by those who reported greater levels of social support, this relationship was substantially steeper among Caucasians than among African Americans Therefore, I performed the next study.

Chapter Four is an observational study. Gender, race, age, and genetics are the basis of cardiovascular disease (CVD) for many individuals.[54] Although these unmodifiable risk factors may create a trajectory to heart disease, more commonly does an individual develop heart disease related to lifestyle choices including smoking, poor dietary habits, and sedentary lifestyle.[54] Additionally, individuals diagnosed with CVD often experience physical, social, and economic challenges and consequences. Some of these challenges and consequences can be reduced through the “buffering” effect of social support. This “buffering” effect of social support can shield the individual with CVD from the full physical and psychological impact of the current stressor and improve health outcomes[12] .

Because not all individuals diagnosed with CVD desire or need the same types of social support, it is also likely that social support needs vary between the sexes. Researchers have validated that recognizing gender differences for desired social support may be vital in understanding how social support alters health outcomes of individuals with CVD[21, 34, 42-44, 46-49]. The objective of this observational study was to determine if the discrepancy between received and desired support for individuals hospitalized with an exacerbation of heart failure (HF) is associated with readmission rates and mortality.

Chapter Five integrates the evidence presented in the chapters of this dissertation. Additionally, the implications of the impact differences in the concordance of desired and received social support between sexes with CVD acknowledged in the first four chapters and the state of the science of social support for CVD patients are reviewed. Lastly, implications for future evaluation for CVD patients are defined.

Figure 1.1: The stress-buffering theory of social support

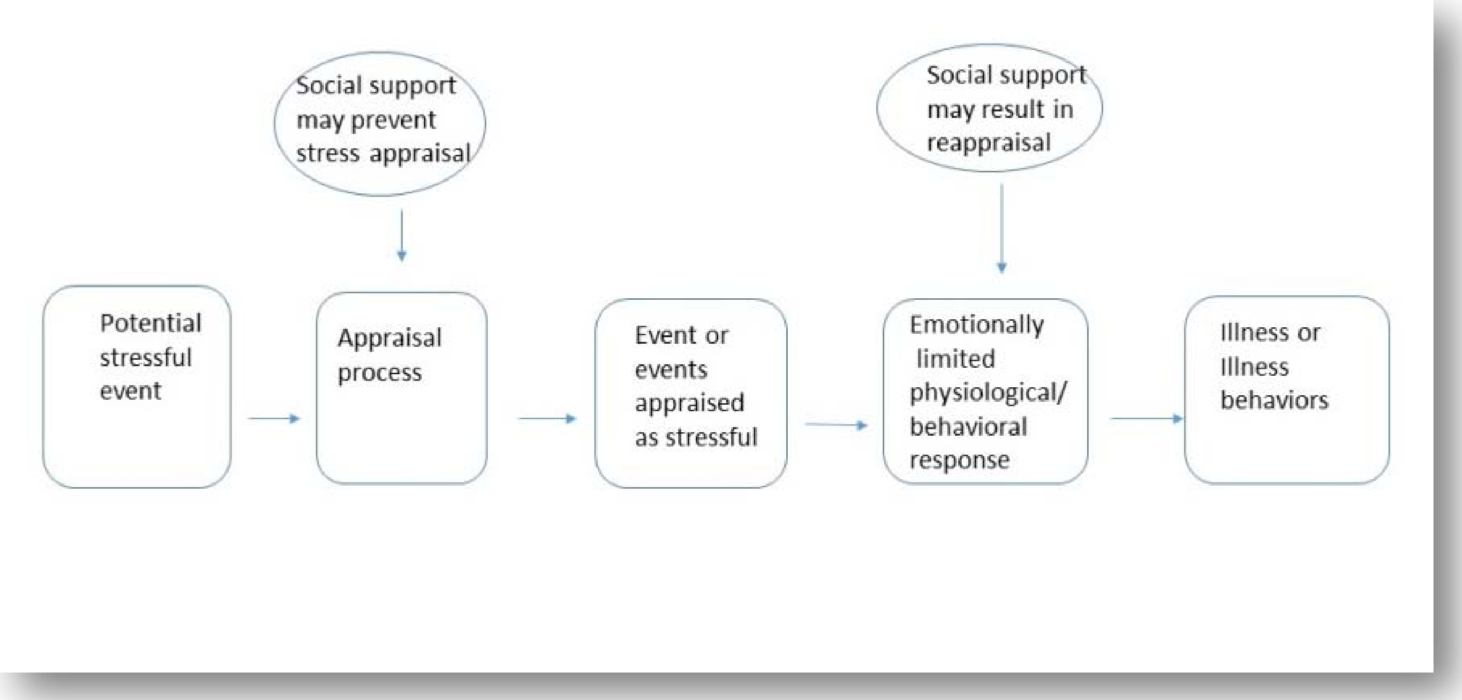
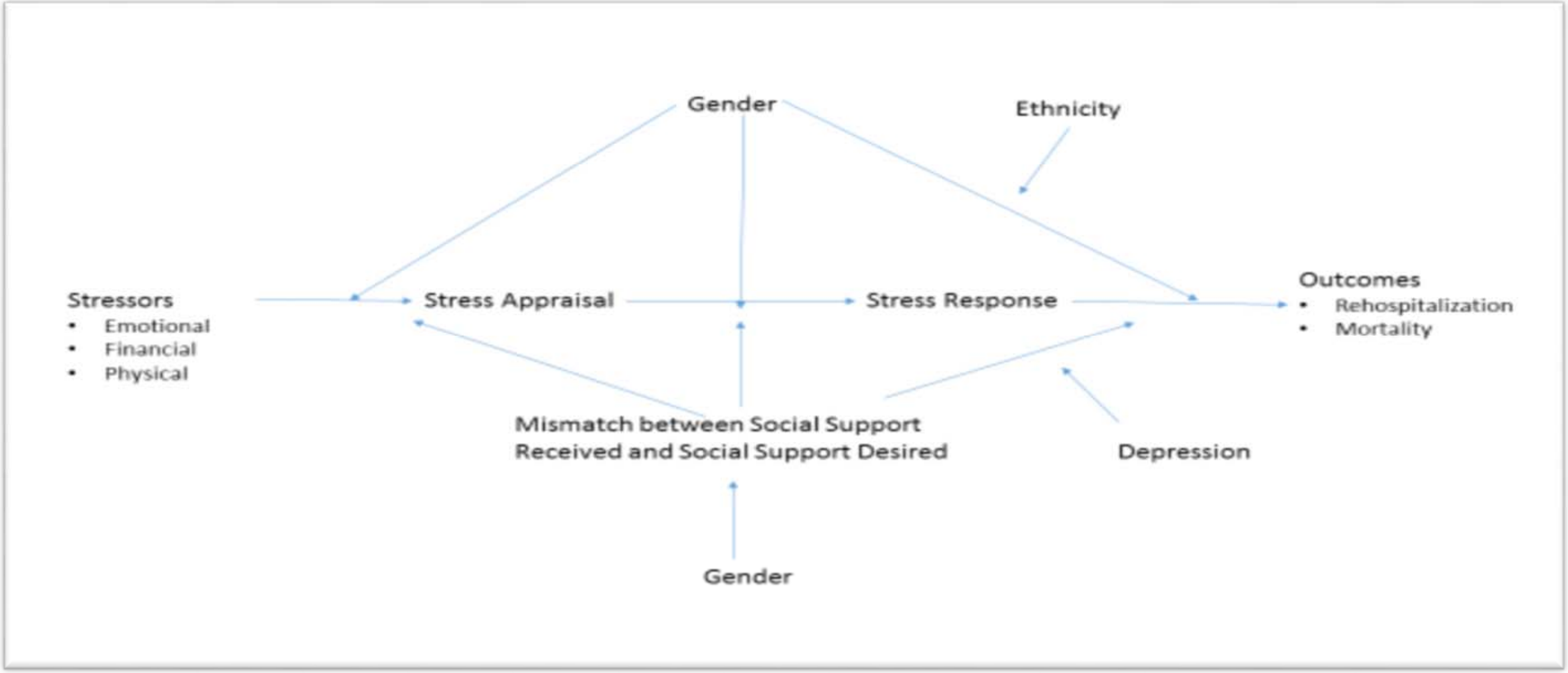


Figure 1.2: Conceptual Framework for the Dissertation



CHAPTER TWO:

Are men really from Mars? Gender differences in perceptions of social support needs by individuals with cardiovascular disease

Besides physical symptoms, individuals with cardiovascular disease (CVD) are at risk of developing social isolation because of the inadequacy or absence of social support.[1, 2] Social support, influential in enhancing the outcomes of individuals with various chronic diseases, is associated with lower levels of anxiety and depressive symptoms, fewer cardiac symptoms, slowed progression of illness, decreased frequency of hospitalization, and reduced mortality for among those with CVD.[3] Adequate social support has also been associated with improved health behavior (including decreased likelihood of smoking and increased likelihood of increased physical activity), increased adherence to medication, and improved blood pressure.[4] Conversely, social isolation or inadequate social support is linked to poor outcomes.[2]

Social support is identified as the provision of resources (emotional, instrumental, or informational) offered to those in need of assistance. Individuals can be identified as in need of assistance when experiencing illness, misfortune or disaster, or occurrence of other stressors.[5] A major characteristic affecting the success of social support is patients' perceptions of a discrepancy between desired and received social support.[3, 6-10] Those who want self-sufficiency after a period of illness may not desire home health care providers, frequent phone calls from concerned family (or other friends), solicitousness from a spouse or children, and assistance with transportation or other services. In fact, social support given that is greater than desired can cause the client to develop health concerns disproportionate to severity of illness and establish a sense of invalidsm that fosters heightened distress and increased dependence.[11] Conversely, individuals who receive less support then desired are likely to report feelings of isolation, identify anxiety and depressive symptoms, and experience a decline in physical health and increased potential for self-harm.[1, 4]

Another variable fundamental to understanding the effects of social support is gender.[12-15] Although research is limited about the effects of gender, some scientists have demonstrated that gender differences in desire for quantity and types of social support could be important to understanding how social support affects outcomes of persons with CVD.[9, 13-16]

Since John Gray's 1992 publication of his best-seller, the title "*Men are from Mars; Women are from Venus"* has frequently been used as a catchphrase to describe differences in men and women, large and small. Gender differences in social support are one such difference. If gender contributes to differences in individuals' need for social support, it is important to determine if health-related outcomes are related to these differences.[11] The purpose of this comprehensive review of the literature is to examine gender differences in the concordance between desired and received social support needs between men and women with CVD.

Background

Lower levels of support have a negative impact on the prognosis of men and women diagnosed with CVD and have been implicated as a risk factor in the development of CVD in previously healthy individuals.[3, 4, 9, 17, 18] Men and women both identify CVD as imposing physical, mental and social challenges on their lifestyles.[19]

Facing similar obstacles, it is not surprising that there are several parallels in the perceptions of needed social support for both men and women.

Both men and women with CVD distinguish family support as the primary source of their social support although some welcome professional caregivers.[3, 17, 19, 20] Many individuals diagnosed with CVD describe the involvement of their families as enhancing enthusiasm, aiding in the reinforcement of changing health regimens, and increasing overall life satisfaction.[10, 21] The welcoming of such assistance by the support recipient is identified as desired support. The receipt of goods or services by a patient experiencing a resource deficit enhances the development of trust, reduces stress and thus, benefits the recipient.[5, 8, 22]

Marriage is described as protective for men with CVD and married men report feeling supported by their wives during illness.[9, 23] Women often report not feeling adequately supported by their husbands during an illness even when husbands offer support.[23] Seemingly less likely to be affected by the emotional support provided by or the loss of a spouse, married women have been reported to have a risk of death up to three times greater than married men with CVD.[23] Characterized as more nurturing and supportive then men, women may be the Venus of social support to the husbands' roles of Mars.[9]

Women do rely on emotional attachment. Commonly forming intimate relationships with persons other than their spouses, women often identify someone other than their spouse as their confidante.[7, 9] Women also report larger numbers of supportive individuals and much more frequent contacts with supporters than men.[7, 9]

Men are more likely to acknowledge receipt of social support than women.[9, 23] Men report having intimate relationships yet these relationships tend to be a smaller than those of women. These relationships tend to emphasize independence by incorporating socialization with activity or task completion.[9] Among men who are working, it is likely that these small groups of men are their core groups and are seen as providing social support.[9, 17] In addition to these alliances, men routinely identify their spouses when labeling those with whom they experience close relationships.[3, 9]

For men who receive much of their social support in the work place, they may find that many of their work place supporters disengage once they are no longer present in the work place, whether through retirement or disability.[19] The absence of these individuals leads to increased hopelessness and feelings of isolation as health declines.[19] The health-related decline and loss of support may be the catalyst for some men to enlist social support provided through caregivers and health-care professionals to supplement waning support.[19]

Single men are also identified as a vulnerable group for increased mortality related to diminished number of social supporters.[12] This smaller size of the social structure of male relationships may represent the masculine, or Mars, orientation of male friendships. Experiencing fewer close relationships, men may unconsciously reduce their contact with the emotional aspects of loss that are more commonplace in the larger social circles of women.[9] Women with larger social circles, despite marital status, receive a protective effect for the large number of supporters.[7, 9] As researchers have identified, women with only moderate or small numbers of social contacts have increased risk of mortality when compared to those who identified greater numbers of contacts and frequent involvement with their supporters.[7, 9]

Men with CVD focus on tangible complications such as financial hardship or unemployment because of their illness; women with CVD verbalize feelings of fear about the progression of their illness and its impact on her roles of wife, mother, and employee.[12] Reporting that they prefer to focus on others to provide a diversion from their own illnesses, women with CVD describe having a reluctance to worry family or other friends about their symptoms.[12, 24]

Women also report feelings of disappointment with their ability to participate in their own care from hospital admission through hospital discharge than do men.[12, 13] Women describe inadequate instruction on lifestyle changes (including diet, exercise and sexual counseling) and recount a desire to speak with others women experiencing CVD.[12, 13] Counseling regarding post-hospital lifestyle changes was less likely to be identified as a deficit by men whose foci were reported as receipt of information regarding ability to return to work and maintenance of level of physical fitness.[12, 13]

Although men frequently deny the need for counseling post-hospital and decry need for additional emotional support, citing only a desire to resume normal activity, the lack of interest in counseling and other methods of interactive support may be related to masculine social norms that are prevalent in the United States (US).[12, 13, 25] Men in the US are expected to be stoic, disciplined, independent; are rarely urged to admit feelings of vulnerability; and are seldom encouraged to seek help.[25] Subsequently, men view receipt of help as a sign of weakness and are more likely to avoid it and view it negatively.[25] Although individual norms evolve throughout their lives, memories of such early admonishments as “boys’ don’t cry” mold self-perceptions and social roles which may follow them throughout their lives.[26]

Therefore, men, being Mars, and women, Venus, with CVD often described differing physical, emotional and social needs.[12] Thus, the specific aims of this review are to (1) determine if there are gender differences in cardiovascular disease (CVD) patients’ perceptions of concordance between desired and received social support, and (2) determine if gender differences in patients’ perceptions of concordance between desired and received social support are associated with differences in health outcomes between men and women with CVD.

Methods

Research articles used in this review were identified from the Cumulative Index to Nursing and Allied Health Literature, the Cochrane Database of Systematic Review, PubMed, and PsychInfo. Gender (or sex) differences, cardiac, cardiovascular, myocardial, heart, coronary, social support, social support need(s), coping, perceive, and perception were used as key words in multiple combinations. A total of 1050 research articles and books were obtained. Of these, articles were excluded from this review if they were not research articles or meta-analyses, did not include and compare social support needs of both genders with CVD, were not published in English or the participants were younger than 18 years. Related to the dearth of articles meeting the criteria for inclusion, one article, whose authors identified social support discrepancies for men and women diagnosed with cancer was included in the review.

Using these criteria, six journal articles are included in the review (Figure 1). Of the six, five (83%) articles are primary research studies and one (17%) is a secondary analysis. Four (66%) of the writings are from nursing journals, one article (17%) was obtained from a journal of women's health, and one (17%) from an informatics journal. The themes included by the researchers are the following: social support and cardiovascular disease, gender differences in cardiovascular disease, and social support and gender differences.

Sample

The research articles in this review were diverse (Table 1). The number of participants in the six studies ranged from 16 to 387 with two (33%) of the studies including only participants age 65 or greater. Four (66%) of the studies occurred in the United States, one (17%) in the United Kingdom and one (17%) in Sweden. The method of the studies varied with three (50%) qualitative studies, two (33%) studies with cross-sectional designs, and one (17%) secondary analysis. Two (33%) studies used semi structured interviews to gather data, two (33%) used instruments, one (17%) analyzed on-line posts, and one (17%) evaluated responses to the question "who would you rely on in time of trouble?"[2]

Results

In the literature reviewed, women preferred support through friendly relationships with staff and other patients, receipt of emotional support from staff, and membership in formal support groups.[27-29] In two studies, many women reported dissatisfaction in social support received from staff interactions, describing it as ineffective.[29, 30] They also voiced distress when needing to rely on family as primary sources of support and reported desiring more social support than they received.[29, 30] The participants identified in one study, however, acknowledged their nurses as primary providers of emotional, instrumental, and informational support.[2] Therefore, the majority of women participants of the studies reviewed reported a deficit of social support desiring more support than received.

Men, however, identified the effectiveness of social support provided by healthcare staff differently. Men labeled such simple actions as daily conversation and provision of refreshments by staff as emotional support.[29] Even when the topic of discussion was illness related, men identified the cognitive support as emotional support.[29] Men frequently expressed concerns regarding loss of autonomy, and changing lifestyle habits. Despite their willingness to discuss health and health-related matters, men remained less likely than women to discuss intimate concerns, and possible tangible losses related (i.e. financial and employment) with healthcare personnel.[29, 30] Instead, men acknowledged that they preferred to share these thoughts with their spouses.[29] Thus, the majority of the men participants in the studies reviewed expressed satisfaction in the balance between social support desired and social support received.

Researchers of one study evaluated postoperative status in CVD patients.[2] No statistically significant relationship was observed between the perception of the adequacy of social support between men and women patients and postoperative recovery.[2] Authors of a second study (which explored HF in older adults) determined that women rated the social support received from close affectionate relationships higher than that of men.[27] However, rather than gender, the most important factor established by the researchers to determine social support requirements was disease severity.[27] Authors of a third study evaluated social and emotional support (primarily low income individuals with heart failure).[10] They identified no statistically significantly relationship between the perception of social support adequacy between men and women and adherence to self-care.[10]

Quality of Studies Reviewed

Studies were evaluated (see Table 1) using the Newcastle-Ottawa Quality Assessment Scale (NOS).[31] This scale uses a rating system of stars to evaluate the selection, comparability, and outcome of the study. Selection, including adequacy of definition of the case, representativeness of the cases, selection of controls, and definition of controls, is assigned a maximum value of four stars. Comparability of the cases and controls on the basis of design or analysis receives a maximum of two stars. Exposure, including ascertainment of exposure, similarity of ascertainment, and non-response rate, receives a maximum of three stars. Studies receive a maximum rating of nine stars if all criteria are met.

Of the six studies reviewed, comparability, ranging from one to three stars, was the measure least commonly met with only four studies recognized as meeting its criteria.[2, 10, 27, 30] All of the studies met criteria for rating the measures of selection and outcome. A maximum rating of seven stars was received by two (33%) of the assessed [2, 27] with the minimum score of three was achieved by one (17%) study.[28]

Discussion

Few studies have directly examined discrepancies in desired versus received social support or any gender differences in such discrepancies. Fewer still examined the impact of these discrepancies on health outcomes. Researchers instead, have concentrated on using instruments that measure perceived quality of social support without attention to whether that support is more or less than desired.

From the few studies available, it is clear that there are gender differences in desired and received social support needs between men and women with CVD. However, there is a limited amount of research which has examined gender differences in CVD patients' perceptions of concordance between desired and received social support. According to the literature reviewed, gender is integral to the identification and evaluation of received and desired social support for individuals with CVD.

Some of the literature depicted women as nurturing care providers whose husbands were dependent on them to return to health.[29, 30] One of the same studies, however, described women as failing to need, or desire, spousal care to obtain positive health outcomes.[30] Also portrayed as under-educated with little emotional resilience[29, 30], it is important to identify that women are equally diverse in desire of and need for social support as men.[12, 30] And, as most women are well educated and many are employed outside the home, some of the concerns identified as conventionally masculine, such as enhanced concern of physical fitness and interest in post-diagnosis employment should not only be attributed to men.[29, 30]

Despite their ability to advance the knowledge related to social support, several areas of concern were found in the studies reviewed. The use of self-reported health-status questionnaires was a weakness in three (50%) of the research studies.[10, 27, 30] The possibility of poor health literacy, inadequate reading comprehension, and deficient knowledge of health status among participants are some of the factors that can reduce the reliability of self-reports. Subsequently, relying solely on client memory and subjectivity of self-assessment risks threatens the validity of the data collected. Another inadequacy was the small sample size in two (33%) of the quantitative studies.[2, 10] These small sample sizes were acknowledged by their authors as posing a risk for type II error.

Additional weakness noted were the failure to use standardized instruments when assessing the level of social support in four (66%) of the research studies.[2, 28-30] Despite the diversity of responses obtained from the semi structured interviews[29], focus groups[30], and content analysis[28] in the three (50%) qualitative analyses reviewed, the use of a standardized social support instrument would have been valuable in establishing an objective measure of social support . Lastly, the researchers of one study measured level of social support through the use of a single question—"who would you rely on in times of trouble?"[2] The author described this question as "reducing measurement burden" in the participants and acknowledged that with this "sample of somewhat frail older adults, our use of a single question to assess social support may have lacked sensitivity".[2] This measure also seemed ill-advised as quantifying presence of a potentially supportive individual does not necessarily reflect their effectiveness.

Anonymity being standard in research studies, one researcher found that anonymity had benefits and disadvantages.[28] This study involved the use of an online support group for clients with CVD and their supporters. While anonymity provided the ability for individuals to converse freely without the constraints of open disclosure, the inability to accurately discern the gender of some of the respondents in this forum thwarted detection of discrepancies in received and desired support between the male and female participants. Despite the anonymity of the 22 participants, 9 (41%) of patients identified their gender.[28] Of the nine participants who indicated their gender, 7 (78%) were men and 2 (22%) were women.[28]

Limitations

There are several limitations to this review. Although the research articles evaluated gender differences in social support provided to CVD patients, only two examined the actual types of social support desired by the client.[29, 30] Another concern is the homogeneity of three of the studies.[2, 27, 29] Despite the homogeneity of individual studies, the diversity of the group of studies reviewed allows for generalizability when viewing the entire collection of articles. Other limitation is the finding that (33%) of the research studies[27, 29] were conducted in other countries, namely the Netherlands[27] and Western Europe[29], where gender spousal roles may differ from those in the United States.

Implications

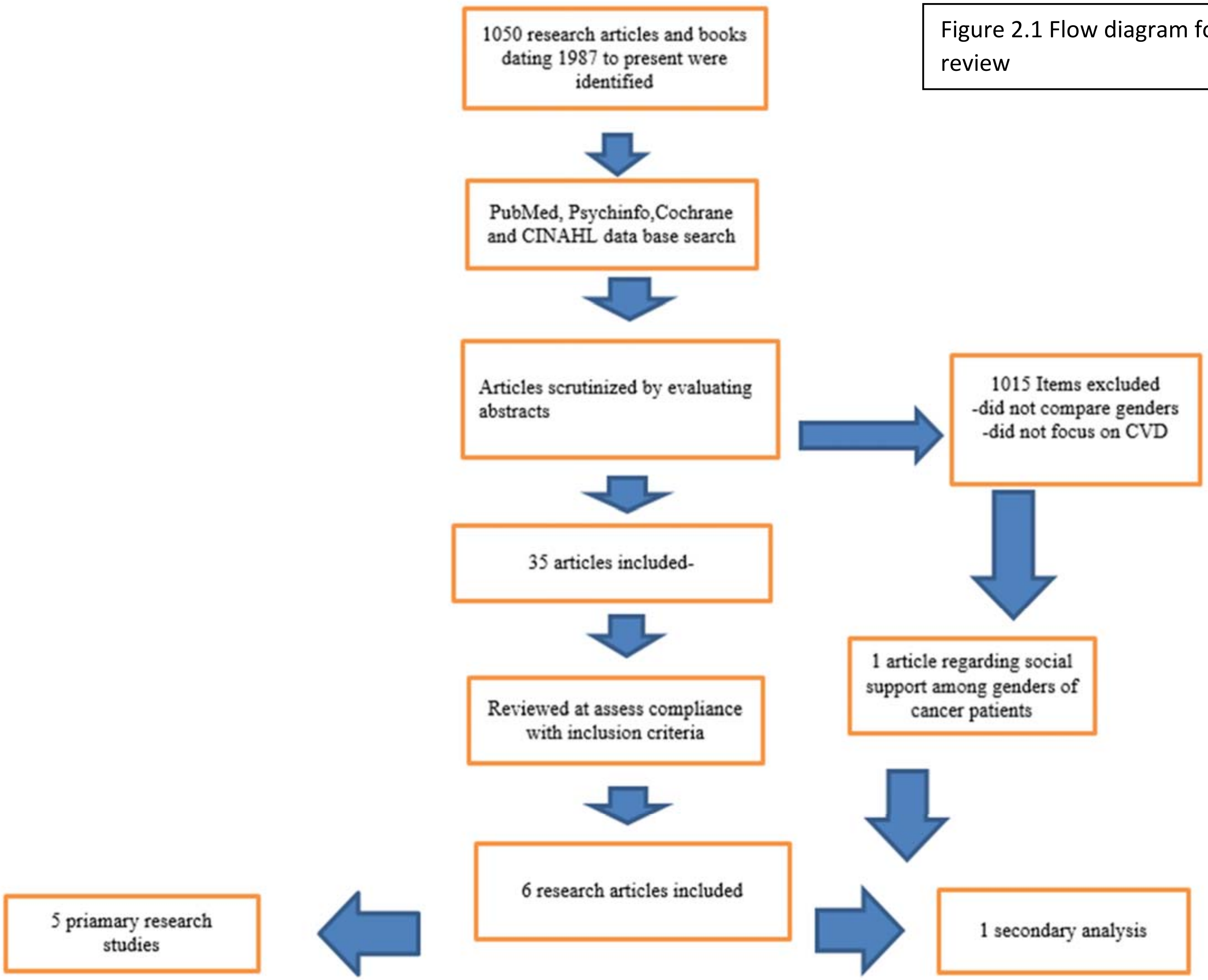
Social support is fundamental to positive outcomes in individuals diagnosed with CVD. Men and women benefit from and desire different sources of and types of social support. Although Mars, men's, social support desired may not be vastly different from that of Venus, women's, additional research is necessary to continue to evaluate whether gender differences in patients' perceptions of concordance between desired and received social support are associated with differences in health outcomes between men and women with CVD. For many individuals with CVD, like those with other chronic ailments, social support may foster individual empowerment aiding in the promotion of positive outcomes.

Table 2.1: Summary of included studies

Author (year) and method	Country	Participants	Measure(s) used	Method	Newcastle-Ottawa Assessment Scale
Arestedt, K. *et al*. (2012)	Sweden	349 patients (65 years or older) diagnosed with chronic heart failure—186 men, 163 women	Minnesota Living with Heart Failure Questionnaire, Short Form-12 Health Survey Questionnaire, Interview Schedule for Social Interaction	Cross-sectional design	Selection: *** Comparability: ** Outcome **
Bjornsdottir, G. (1999)	United States	30 individuals—7 males, 2 females, 13 unknown gender	Analysis of each posted message	Qualitative methodology—content analysis	Selection: ** Comparability: Outcome: *
Clarke, S. *et al.* (2006)	United Kingdom	11 individuals diagnosed with melanoma—6 men and 5 women—and 5 individuals	Semi-structured interview	Qualitative methodology—thematic analysis	Selection: **** Comparability: Outcome: *

		diagnosed with breast cancer			
Macabasco-O'Connell, A. *et al.* (2010)	United States	65 individuals diagnosed with heart failure –29 males, 36 females	ENRICHD Social Support Instrument (ESSI)	Descriptive, cross-sectional study using 1 time interviews	Selection: *** Comparability: ** Outcome: *
Mead, H. *et al.* (2010)	United States	387 participants from 10 US communities—184 males, 198 females	Focus groups with open-ended interview guide	Qualitative methodology—inductive approach	Selection: ** Comparability: * Outcome: *
Sorenson, E. and Wang, F. (2009)	United States	70 individuals aged 65 or older who were preparing for non-emergency coronary artery bypass graft surgery (CABG)	Question: Who would you rely on in time of trouble?	Secondary analysis	Selection: *** Comparability: ** Outcome: **
Legend: Selection=evaluation of definition adequacy, representativeness, selection, definition; Comparability= comparability of cases; Exposure=ascertainment of exposure, same method of ascertainment, non-response rate					

Figure 2.1 Flow diagram for literature review



CHAPTER THREE:

Lonely hearts: The relationship between perceived social support and depression in African American and Caucasian patients with heart failure

The number of heart failure (HF) diagnoses continues to swell in African Americans and Caucasians age 45 and older. According to the American Heart Association [1], approximately 5.1 million Americans over age 20 have HF, with rates for the development of new HF symptoms varying among races and sexes. Approximately 1.7% of African American men aged 65 to 74 experience new symptoms annually along with 1.4% of African American women, 1.5% of Caucasian men, and 0.8% of Caucasian women.[1] For individuals 75 to 84 years, the number of new HF events among these races and genders increase to 2.6%, 2.6%, 3.2%,and 2.0%, respectively.[1] Regardless of the incidence of HF, the sociodemographic and clinical profiles of African American men and women with HF are different from that of Caucasian men and women. African Americans with HF are younger at diagnosis, have a higher percentage of modifiable HF risk factors than Caucasians, and greater likelihood of comorbidities such as hypertension, obesity, and systolic dysfunction.[1]

Notwithstanding these differences, patients with HF share similar symptoms regardless of race. The development of depressive symptoms is common in both African American and Caucasian patients. Depressive symptoms are associated with poor adjustment to illness and negative health outcomes in patients with HF.[2] Therefore, it is essential to understand which factors influence depression.[2, 3]

Social support has been identified as an asset to patient adjustment to a HF diagnosis.[4] It occurs in many forms and may be manifest as emotional, tangible, or informational support.[5] Despite its benefits, however, social support for patients with HF is often underdeveloped.[3, 6, 7] Lack of adequate social support is linked to mortality and re-hospitalization among patients with HF.[8]

The quantity and quality of emotional support provided to chronically-ill African Americans and Caucasians varies. African Americans reportedly provide a great deal of emotional and material support to their extended family members, a phenomenon known as homophily, helping reduce financial strain and enhancing access to health care.[9] Caucasians, however, are described as more likely to receive skilled care or assistance from friends, co-workers, or other individuals rather than family.[10]

Because depressive symptoms alter patients' abilities to cope with illness by enhancing negative thoughts, decreasing autonomy, and heightening a sense of dependency, it is important to determine factors that influence depressive symptoms in HF patients.[11] Because individuals who perceive greater social support report fewer depressive symptoms, the purpose of this study was to determine whether race moderates the relationship of perceived social support with depression in African American and Caucasian patients with HF. We hypothesized that African Americans with HF and high levels of perceived social support would have lower levels of depression than Caucasian patients with HF who reported similar social support levels.

Methods

Design. This study was a secondary analysis from the RICH (Research and Interventions for Cardiovascular Health) Heart HF registry. The current study was a cross-sectional, observational study using baseline data only from the registry. Data from 323 individuals from the original study who had data on all the variables of interest was used in this analysis. Institutional review board approval was received for the original studies and for analyses from the registry.

Sample and Setting. Adults age 18 or older diagnosed with HF were enrolled in the study. Study inclusion criteria included ability to speak, read and write in English; confirmation of HF by a cardiologist; living independently (that is, not institutionalized); absence of life-threatening co-morbidity; and not currently participating in a HF disease management program.

Measurement. Demographic data collected, using a standardized instrument, included age, gender, ethnicity, educational level, lived alone, New York Heart Association (NYHA) functional class.

Social Support. Having been identified as an integral aspect of the health and wellness of both physical and mental illness, researchers have described social support as formal and informal interactions that buffer the negative effects of threatening situations. [9, 12] In this study, perceived social support was measured with the Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS is a 12-item instrument that is used to assess individuals' perceptions of social support provided by family members, other friends, and significant others. The 12 items are evaluated on a 7-point Likert scale with a response of 1 indicating strong disagreement and a response of 7 denoting strong agreement. The responses are totaled and the higher total score indicates perceptions of better received social support. The MSPSS has Cronbach's alphas ranging from 0.85 to 0.91,test-test reliability of 0.75 to 0.85, and validity established through negative correlation with instruments assessing depression.[13] Cronbach's alpha in this study was 0.95.

Depression. Depression was measured using the Beck Depression Inventory II (BDI-II). The BDI-II is a 21 item self-report survey, which contains questions related to depressive symptoms experienced in the last 2 weeks. The depressive symptoms assessed are both psychological and physical including the following: mood, pessimism, sense of failure, self-dissatisfaction, guilt, suicidal ideas, crying, irritability, social withdrawal, insomnia, fatigue, appetite, weight loss, self-accusation.[14] Each response is scored using a scale of 0 to 3, where 0 indicates minimal effect and 3 severe effect. Total scores of 0 to 13 indicate minimal, 14 to 19 mild, 20 to 28 moderate, and 29 to 63 severe depressive symptoms. The BDI-II has a coefficient alpha of 0.92, concurrent validity—established with the Hamilton Rating Scale for Depression- Revised-- of 0.71 to 0.83, and test-test reliability of 0.93.[15, 16] Cronbach's alpha in this study was 0.89.

Data Analysis. Using SPSS 21 with an a priori significance level of 0.05, baseline demographic characteristics between African American and Caucasian participants were compared using chi-square, independent tests or Mann-Whitney U tests as appropriate. Subsequently, multiple regression was conducted to determine whether perceived social support was associated with depressive symptoms while controlling for race

(African-American and Caucasian), age, gender, whether the individual lives alone, NYHA class, and educational level. Variables were all entered into the regression equation in order to produce simultaneous control. Next, in order to determine whether race moderated the association of perceived social support with depressive symptoms, race, perceived social support and their interaction was regressed on depressive symptoms. The sobel statistic was used to test the significance of the slopes of the interaction term.

The assumptions of multiple regression including independence of errors, linearity of the relationship between the predictor and dependent variables, homoscedasticity of residuals, no multicollinearity, no significant outliers or influential points and normal distribution of errors were tested. There was independence of errors as determined by Durbin Watson statistic of 2.04. There were no significant outliers or influential points as assessed by examination of Leverage values and Cook's distances. Linearity, homoscedasticity of residuals and normal distribution of errors was evident after log transformation of the dependent variable. There was no multicollinearity in the model without the interaction term.

Results

Patient Characteristics. Data were analyzed for 323 participants (Table 1). Of these 58 (18%) were African American. African American and Caucasian patients differed on gender and age (Table 1). African American patients were younger than Caucasians, and there were more women in the African-American group than in the Caucasian group. There were no differences between the two racial groups in education level, NYHA class, living alone, depressive symptoms, or perceived social support.

Test of moderation. In the first multiple regression, 26% of the variance in depressive symptoms was explained by the model that included race, age, gender, whether the individual lives alone, NYHA class, educational level, and perceived social support (F [7,898] =16.4, $p < 0.001$). Age, education level, NYHA class and perceived social support were the only significant variables in this regression (Table 2). Younger age, lower education level, worse NYHA class and lower levels of perceived social support were associated with higher levels of depressive symptoms.

In the second model, unadjusted for other covariates in order to directly test moderation, 15% of the variance in depressive symptoms was explained by race, perceived social support and their interaction. All of variables in the equation were significant predictors of depressive symptoms demonstrating moderation by race of the association between perceived social support and depressive symptoms (Table 3). Higher levels of perceived social support were associated with lower levels of depressive symptoms, although the slope of this relationship was substantially steeper among Caucasians than among African Americans (Figure 1, Sobel test for slopes < 0.001 for Caucasians and 0.414 for African Americans).

Discussion

In this study, we demonstrated that race moderated the relationship between social support and depressive symptoms in patients with HF. Depressive symptoms among Caucasians are reduced substantially by higher levels of social support. Among African Americans an ameliorating effect on depressive symptoms from social support is considerably smaller.

This differential effect is seen because African Americans are more likely than Caucasians to experience ongoing exposure to health hazards, poor access to healthcare, and lower socioeconomic status.[9, 17]The earlier introduction and more frequent contact with adversity often experienced by African Americans creates familiarity when enduring stressful experiences.[17] Therefore, the occurrence of additional stressors has less of an impact on African Americans who may have faced more life-long stressors than Caucasians.[17] African Americans are attributed to managing stress with "greater emotional flexibility" than Caucasians which aides remission or recovery.[17] This "emotional flexibility", however, has not been demonstrated in patients who are Caucasian or have high socio-economic status.[17]

Despite this, African Americans have higher rates of many chronic diseases and experience a greater rate of functional impairment than Caucasians.[9, 10, 17] Researchers, however, have not determined a relationship between increased health impairment, stress and depressive symptoms.[9, 10, 17] While older African Americans have reported thinking about death more often than their Caucasian counterparts, their thoughts of death were not definitively depressive but very likely cultural and experiential.[18] African Americans are more likely than Caucasians to utilize the protective environment of their faith communities to aid in coping with stress.[10] Furthermore, in contrast to the professional support sources often utilized to assist supporters of Caucasian patients, African American patients often receive support from both their extended family and their church members.[10] As most African American receive the influence of homophily from these church-based interactions, the racial composition of the church community helps the patient feel connected.[10]

Regardless of race, depressive symptoms have been most commonly identified in females.[11] Although sex differences did not reach the level of significance in our analysis (p=0.228), researchers have identified that up to 25% of women aged 14 to 26 with HF have reported moderate to severe depressive symptoms but the presence of depressive symptoms noted in women 65 or greater has been termed minimal.[11]

In the study population the mean age was 61, the mean age for African Americans was 55and 62 for Caucasians. As age was a significant variable in the regression (p=0.002), many researchers have identified a greater prevalence of depression in young patients with HF.[11] HF patients less than age 60 have the almost twice the likelihood of developing depressive symptoms while patients greater than age 64 have been found to have a reduced risk of depressive symptoms.[11]

Living alone has been identified by some researchers as a point of vulnerability for patients with HF. Increased financial resources, assistance with care needs, and companionship are all benefits of living with another person.[19] However, the social support benefit of living with another person varies greatly based in the relationship quality, the patient's care needs, and the ability of the individual the patient live with to assist with those needs.[19] Although 71.5% of the participants in this analysis lived with another person, living with another person did not meet the level of significance (p=0.269).

Informational support is an important component of social support which can reduce depressive symptoms. Patients with poor understanding or who appear uninformed about their disorder are at increased risk of having a reduced interaction during healthcare appointments, receiving less information about their care needs, and subsequently, reduced self-care ability. [20] Educational level in years (13.4±3.4) was found to be a variable of significance in this regression (p=0.001). In addition to the potential barriers of interaction with health care providers, educational level can also impact the depressive symptoms of the patient with HF through social and economic challenges that can accompany lower levels of education.[11]

MSPSS score (67±18) and NYHA class also were found to be variables of significance in the regression (p<0.001). Self-identification of the client's perception of the availability of emotional support in this analysis demonstrated that the higher the perception of support by the patient the lower the number of depressive symptoms.

While the MSPSS evaluated the patient's perception of supporter strength, the NYHA class assessed the physical impact of HF symptoms. As patients progress through the NYHA classes, the level of vulnerability for the patient increases.[21] Disease severity is identified as one of the most important aspects to evaluate when assessing social support for HF.[21] From no limitation from HF (class I) to unable to carry out activity without physical discomfort (class IV), the progression through the classes of HF can profoundly alter the amount and types of social support needed. Regardless of the physical changes that occur with the progression of HF, however, it is important to remember that social support is not merely provision of services for physical symptoms.

Rather, it is the collection of tangible and intangible interpersonal experiences that surround the patient assisting to cope with daily stress and adjust to change.

Limitations

There are limitations of this study. Although both African Americans and Caucasians have adequate sample sizes in the study, the smaller percentage of African American participants may have an impact on generalizability. The small percentage of African Americans also may have decreased our power to show significant differences, although our demonstration of important differences between African American and Caucasian patients suggests power was sufficient. The identification of social support by participants may not be fixed. Variations in daily social interaction and stressors may create inconsistency in reported levels of social support with fluctuating perceptions.

Conclusion

Social support has a significant role in the successful adjustment to chronic illnesses such as HF.[4] Social support reduces depression, although to a substantially greater degree in Caucasians compared to African Americans. Given the strong, negative effects of depressive symptoms on functional status, quality of life and morbidity and mortality among all patients with HF, it is essential to reduce depression symptoms. As the HF rate is increasing and the population aging, the number of families and other supporters for both African American and Caucasian patients available to provide comprehensive support may also wane. Subsequently, identification and evaluation of the factors affecting depression in the HF patient is a priority.

The impact of high-quality social support of depressive symptoms on health-related outcomes necessitates ongoing analysis of the phenomena. Technological innovation and increased access via the internet and other media modes provide opportunities for support and engagement even when physical presence is impossible. Additionally, despite the increasing number of older Americans, the swelling population of younger individuals of both races diagnosed with HF necessitate the development of support modes which are not only accessible but appeal to a younger patient population needing to connect with family and other friends for support.

Through researchers' validation of the relationship between social support, ethnicity and depressive symptoms, it may be possible to identify modes of desired social support for a wide variety of patients. These factors, upon recognition, can be used in the identification, recruitment and engagement of HF patients' supporters. Once provided with an assessment of the requested desired support to assist patients navigate the illness continuum, the supporters may reduce the patients' depressive symptoms, decrease daily struggles and increase positive health-outcomes. African Americans may be more self-sufficient, but this does not obviate the need to assess internal and external resources for all patients.

Table 3.1: Patient Characteristics for the Total Sample, and Compared Between African Americans and Caucasians

	Total N=323 Mean± SD or n (%)	African American n=58 Mean± SD or n (%)	Caucasian n=265 Mean± SD or n (%)	P value for comparison of African American and Caucasian
Age, years	61± 12	55 ± 10	62± 11	< 0.001
Male gender	230 (71.2%)	25 (43.1%)	205 (77.4%)	<0.001
Lives with someone	231 (71.5%)	40 (70.2%)	191 (72.1%)	0.75
NYHA Class I -II	178 (55.1%)	33 (56.9%)	145 (54.7%)	0.77
Class III-IV	145 (44.9%)	25 (43.1%)	120 (45.3%)	
Years of education	13.4 ± 3.4	13.3 ± 2.3	135 ± 3.6	0.73
BDI-II total score	10.2 ± 9.0	9.2 ± 8.4	10.4 ± 8.6	0.33
MSPSS total score	67 ± 18	69.1 ± 17.1	66.8 ± 17.8	0.38

Legend: BDI-II = Beck Depression Inventory-II; MSPSS = Multidimensional Scale of Perceived Social Support; NYHA = New York Heart Association Functional class

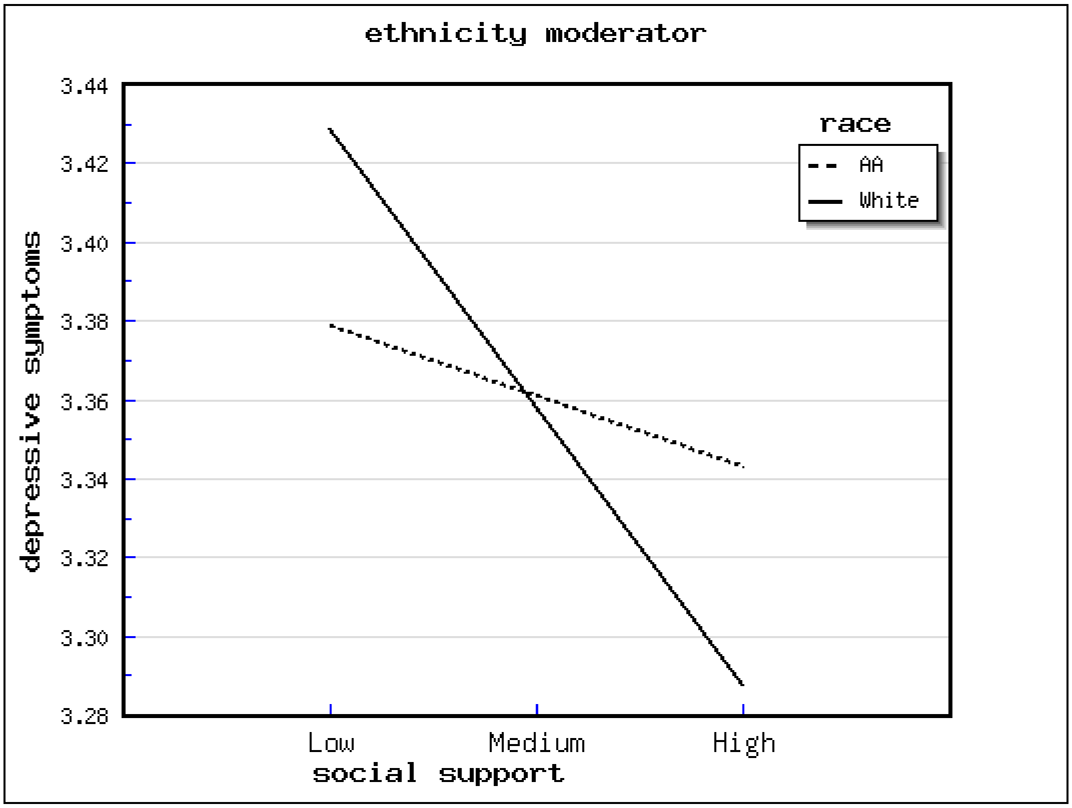
Table3.2: Multiple Regression Analysis for Prediction of Depressive Symptoms				
Variable	$\boldsymbol{B_a}$	$\mathbf{SE_b}$	$\mathbf{B_c}$	p
Gender	1.119	0.992	0.063	0.228
Age	-0.123	0.039	-0.163	0.002
Lives with another person	1.080	0. 975	0.057	0.269
Educational level in years	-0.415	0.124	-0.169	0.001
Perceived social support score	-0.164	0.025	-0.339	< 0.001
Race	-2.175	1.183	-0.098	0.067
New York Heart Association class	3.829	0.884	0.224	< 0.001
Notes: Model ANOVA F, [7,898] =16.4, p < 0.001; B_a= Unstandardized intercept coefficient, SE_b=Unstandardized error of the coefficient, B_c=Standardized coefficient				

Table 3.3: Test of Moderation by Race for the Association of Perceived Social Support with Depressive Symptoms

Variable	B_a	SE_b	B_c	p
Unadjusted Moderation Analysis, Model ANOVA F [3,3641] =19.4, p < 0.001				
Perceived social support	-0.206	0.028	-0.458	<0.001
Race	-10.15	4.78	-0.458	0.035
Perceived social support * race	0.136	0.068	0.438	0.045

Notes: B_a= Unstandardized intercept coefficient, SE_b=Unstandardized error of the coefficient, B_c=Standardized coefficient

Figure 3.1: Test of moderation by race (African American and Caucasian) of the association between perceived social support and depressive symptoms (Sobel test for slopes < 0.001 for Caucasians and 0.414 for African Americans). Legend: AA = African American; white = Caucasian



CHAPTER FOUR

First responders for hearts: Congruence in desired versus received social support and the association with hospital readmission for persons with heart failure

The incidence of cardiovascular disease (CVD) remains high in the United States (U.S.). In 2010, thirty-two percent, or more than 788,000 individuals, died from its impact. [1-3] Although many diagnosed with CVD confront unmodifiable risk factors including sex, race, age and genetics, most individuals develop these disorders because of lifestyle choices such as smoking, poor dietary habits, and a sedentary lifestyle. [4] Individuals diagnosed with CVD are also likely to experience challenges which are not only defined by their financial impact. [2, 3] Rather, they are also often affected by challenges related to the consequences imposed by both the modifiable and non-modifiable risk factors.

These challenges, described as having the potential to be mitigated through interpersonal relationships marshalled against the stressors of the individual's illness, may be reduced through the use of the "buffering" effect of social support. Effective in such diverse groups as the elderly, bereaved, and parents, social support's "buffering" effect can provide a protective relationship against both the physiologic and psychological impact of the effects of CVD, improving health outcomes for individuals diagnosed with heart failure (HF). [5]

A social support relationship between the recipient and other person (or entity) provides tangible and/or intangible resources to the recipient during a time of need. Support can be provided by a myriad of sources including family members, other friends, co-workers, healthcare providers, and media modes. The types of support provided include emotional, instrumental/tangible, and informational resources offered to sustain the recipient as needed, or desired. [6-10]

As it is unlikely that all individuals diagnosed with CVD desire the same types and amounts of support, it is also likely that social support needs vary between men and women. Researchers have demonstrated that gender differences in desire for social support may be important in understanding how social support alters the outcomes of persons with CVD.[6, 10-17] Subsequently it is it is important to identify if there are differences in both the desired and received needs of the men and women diagnosed with CVD.[6, 18]

If gender is found to contribute to differences in individuals' needs for social support, it is also necessary to determine if health outcomes are related to discrepancies in desire for and receipt of social support.[19] Therefore, the specific aims of this study were (1) to compare sociodemographic and psychosocial characteristics based on congruency between desired and received social support by gender in patients hospitalized with an exacerbation of HF, and (2) to determine if the interaction of gender differences and discrepancy between desired and received is associated with all-cause event-free survival.

Methods

Study design

This observational study is a part of a larger study with baseline data (discrepancy in social support desired and received) collected while the participant is hospitalized. Outcomes were collected at 1-month and 3-month post-discharge intervals. The Institutional Review Boards of University of Kentucky and the University of Louisville along with the Norton Healthcare Office of Research Administration approved this study.

Sample and Setting.

Participants were recruited from three metropolitan hospitals in the south-central area of the United States. A purposive sample of 157 participants of both sexes and any race was obtained by trained research assistants, including me. After having the study thoroughly explained to them, all participants provided informed consent and signed the consent form. Upon enrollment, I obtained demographic and clinical data from the participants' medical records and was involved in interviews conducted at bedside. Participants were also asked to provide contact information for a family member or other friend to be used as an alternative means of follow-up. Inclusion criteria were the following: age 18 years or greater, confirmed diagnosis of chronic HF, admitted with suspected HF diagnosis, and that it is the primary or secondary diagnosis upon discharge.

The data I collected from the participant's medical record included admitting diagnosis; in -hospital and discharge medications; admission and discharge weight, chest x-ray, and lab work; echocardiogram results; discharge instructions; and follow-up physician appointments. Information collected during interviews at bedside included onset of symptoms, home medications, and health history. The medical record was also used to identify discharge outcome for any participant lost to follow-up.

Acute exacerbation of HF is defined as worsening of symptoms related to diagnosis of HF. The diagnosis of acute exacerbation of HF signifies an alteration in the individual's status necessitating immediate medical intervention and, possibly, subsequent hospitalization. Exacerbation of HF is present with the occurrence, or presence of, two or more of the following symptoms in a person diagnosed with chronic HF: pulmonary or peripheral edema, increased weight, dyspnea, orthopnea, paroxysmal nocturnal dyspnea, increased jugular vein distention.[20]

Individuals were excluded if they were discharged to institutions, had dementia, had history of or were receiving a heart transplant, had a myocardial infarction or stroke within the last three months, or had a diagnosis of terminal illness. Only hospitalized patients were chosen to participate in this study related to the similarity of their baselines and symptoms with the occurrence of recent event requiring acute care.

Measures.

All-cause event-free survival. Health outcomes were defined as re-hospitalization from cardiac causes or death from all causes. Data on these outcomes were collected from follow-up phone calls to participants and their contact persons conducted at one-month-post discharge, review of participants' medical records, review of administrative records, and examination of death certificates.

University of California-Los Angeles Social Support Instrument (UCLA-SSI; see appendix for full instrument)

Discrepancy in social support desired and received was measured using UCLA-SSI. This Likert-scale type social support instrument is designed to evaluate needed and desired social support received from spouse, family members, and friends. Designed as an assessment to evaluate social support among college students, this 70-item self-report instrument is easily modified to assess social support in other populations. Concurrent validity of a version modified for cardiac patients has been established through other research.[19] Items identifying the participant's need for the type of support available are scored from never (1) to very often (5), items classifying satisfaction with the support provided are scored from very dissatisfied (1) to very satisfied (7).[21]

In this study, social support was defined as a protective relationship between a recipient and another person (or entity) who provided tangible and/or intangible resources to the recipient during a time of need. Social support identifies the presence, or absence, of emotional (caring, entrusting, and affectionate), instrumental (material or physical), and of informational (information and instructional) resources that influence health. The discrepancy in desired and received support was calculated by subtracting the total score of the aggregated item of the dimensional scales identified as assessing "satisfaction with support received" from the total score of items assessing "needed/wanted support". Chronbach's alpha in this study was 0.85.

Brief Symptom Inventory (BSI)

The Brief Symptom Inventory (BSI) identified anxiety.[22, 23] The BSI measures current symptom distress and the experience of the symptoms within the last 7 days.[22, 23] It is a 6-item instrument measured using a Likert scale response system. Answers are scored from not at all (0) to extremely (4).[22 22] It is reported to have high internal consistency, test-test reliability, and convergent, discriminant, and construct validity. It has been used in individuals with heart failure with and without renal dysfunction.[22] Cronbach's alpha in this study was 0.79.

Medical Outcomes Study Specific Adherence Scale (MOS-SAS)

The Medical Outcomes Study Specific Adherence Scale (MOS-SAS) was used to assess adherence to behaviors recommended for HF patients. Adherence to these recommendations such as exercising regularly, taking medication as prescribed, reduction in smoking and alcohol consumption, eating a low fat or low salt diet, weighing daily and monitoring for symptoms are evaluated on a five-point Likert-style scale. The ratings range from none of the time (0) to all of the time (5). Responses are totaled for a raw score evaluating adherence. Higher scores indicate greater adherence. Cronbach's alpha in this study was 0.67.

Multidimensional Perceived Social Support Scale (MSPSS)

The Multidimensional Perceived Social Support Scale (MSPSS) was also used to assess social support. The MSPSS assed the participant's perceived sufficiency of social support from family, other friends, and other significant individuals. The MSPSS is a 12-item. 7-point Likert scale instrument which asked participants to rate items from very strongly disagree (1) to very strongly agree (7). The sum of the responses determines the score with the higher scores indicating perception of greater support. The validity and reliability of this instrument have been demonstrated in diverse groups including undergraduate students, pregnant women, and persons diagnosed with CVD. [24, 25] Cronbach's alpha in this study was 0.92.

Patient Health Questionnaire (PHQ-9)

Used to screen, diagnose, monitor, and measure depression, the Patient Health Questionnaire (PHQ) is a nine question instrument was used to rate the severity of depressive symptoms, screen for the presence of suicidal ideation, and assess the impact the depressive symptoms have had on level of functioning.[26] Using a Likert-type scoring of not at all (0) to nearly every day (3) to answer nine questions, total scores of five to nine indicate minimal symptoms, 10 to 14 indicate minor symptoms, 15 to 19 indicate moderately severe major depression, and scores of greater than 20 identify severe major depression.[26] Scores greater than 10 are reported to have a sensitivity and specificity for major depression greater than 88%.[26] Validity has been established in both primary care and obstetrics settings and this instrument can be repeated over time to evaluate changes in depressive symptoms.[26] Cronbach's alpha in this study was 0.74.

Characteristics

Socio-demographic characteristics collected included age, gender, if participant lived alone, race, years of education, marital status. This data was obtained during client interview and medical record review.

Data Analysis

Data analysis was conducted using SPSS for Windows (version 21.0. SPSS, Inc., Chicago, Il.) Means, standard deviations, and percentages provided a summary of social-demographic characteristics. The *a priori alpha* was 0.05. Analysis of the congruence of desired and received social support was based on scores of the UCLA-SSI. After calculating the UCLA-SSI score, the participants were divided into three groups based on tertiles of the score on discrepancies between desired and received UCLA-SSI scores. The categories of the designated tertiles were labelled under-supported (less support received than desired), adequately supported (approximately equal amounts of desired and received support) and over-protected (more support received than desired).

We conducted multifactorial ANOVA and chi-square, as appropriate, to determine differences in sociodemographic and psychosocial variables among the groups formed by the interaction of gender and social support discrepancy group. Assumptions of ANOVA (i.e., homogeneity of variance, no significant outliers, and normal distribution for the dependent variable for each level of the independent variable) were tested. There were no significant outliers. Data approximated a normal distribution for each level of the independent variable for age, years of education, BSI-A, MOS, MSPSS, and PHQ-9. There was homogeneity of variances as assessed with Levene statistics for age (p=0.474), years of education (p=0.559), and PHQ (p=0.445). Homogeneity of variances was violated for MSPSS (p=0.05) so the alternative test for determining statistical significance when this assumption is violated was used.

In order to determine whether social support discrepancy group and gender differences were associated with all-cause event-free survival we conducted Cox proportional hazards modeling. The assumption of proportional hazards was tested and was not violated. We performed unadjusted and adjusted analyses. In two separate adjusted analyses, we controlled for depression in the first, and we controlled for age, living alone, race, years of education, BSI-A score, MOS score, and PHQ-9 score in the second.

Results

Sample characteristics

The sample population of 157 participants included 80 women (51%), had a mean age of 63 (±13) years, were largely Caucasian (73%), had mean education of 13 (± 3) years. Despite the fact that 111 participants (71%) did not live alone, only 66 (42%) were married (Table 1). Based on the UCLA-SSI discrepancy score, patients were divided into the following three groups: under-supported (n = 57), adequately supported (n = 55), and over-protected (n = 46).

Specific aim 1.

Characteristics of the sample based on gender differences and social support discrepancy group are displayed in Table 2. Based on multifactorial ANOVA, there were no interaction or main effects of social support discrepancy group by gender on age, years of education, living alone or not, race, MOS score, and BSI-A score. There was no interaction, but a significant main effect of social support discrepancy group for PHQ-9 score and MSPSS score (Table 2). For depressive symptoms (PHQ-9 score) there was a dose response based on social support discrepancy score. Specifically, depression scores were highest for those in the under-supported group, lowest for those in the over-protected group, and in the middle for those who were adequately supported. For the MSPSS scores, those patients in the under-supported group had the lowest scores (indicating low level of social support), while those in the over-protected group had the highest scores indicating higher levels of social support.

Specific aim 2.

Events

During the three-month period following hospital discharge, 86 (55%) participants experienced additional hospitalization or death (Table 3). One participant was lost to telephone follow-up and was followed through review of hospital record. Eight participants (5%) died from HF, three (2%) deaths were related to other cardiovascular complications, and three participants (2%) died from causes other than cardiovascular disease. Exacerbation of HF symptoms accounted for hospital admissions for 28 participants (18%) during the study period. Forty-five participants (29%) were hospitalized during the study period for either cardiovascular complications or other illnesses. Seventy-one participants (45%) remained alive without event during the period.

Of the eight participant deaths from HF, five participants (63%) identified themselves as under-supported, one as adequately supported (13%), and two (25%) as over-protected. One participant (33%) who died from other types of cardiovascular disease self-identified as under-supported, the remaining two identified adequate support (66%). Of the 28 HF hospitalizations, 9 (32%) identified themselves as under-supported, 11 (39%) as adequately supported, and 8 (29%) as over-supported. The participants of the twenty-one other cause cardiovascular hospitalizations described themselves as follows: 5 (24%) under-supported, 8 (38%) adequately supported, and 8 (38%) over-protected.

Survival analysis.

In unadjusted and adjusted analyses neither gender nor social support congruency score group was predictive of all-cause event-free survival (Table 4). We also entered the interaction of gender differences and social support congruency score group in a second unadjusted analysis and none of the variables was a statistically significant predictor of the outcome.

In the first adjusted analysis in which we controlled for depression, only depression score (p = 0.022) was predictive of all-cause event-free survival (Table 4 and Figure 1). For each one-unit increase in PHQ-9 score there is a 4.2% increase in the risk of an event.

In the second adjusted analysis in which we controlled for age, living alone, years of education, MOS score, BSI-A score, PHQ-9, and demonstrated that only MOS-SAS (p= 0.006) score was predictive of all-cause event-free survival (Table 4 and Figure 2). For each one-unit increase in MOS-SAS score there is a 4.4% increase in the risk of an event.

Discussion

Social support has been identified for its protective effects for individuals with CVD reducing length of hospital stays, decreasing isolation, and enhancing functional outcomes.[27] Despite acknowledgement of the receipt of social support, patients with CVD often report a less than adequate amount of social support and low satisfaction with the support provided by their first responders.[27, 28] In the first adjusted analysis (controlled for depression), we were only able to identify depression as predictive when controlling for all-event survival and between all-cause hospital readmission or mortality between individuals who were identified as under-supported, adequately supported, or over-protected.

Many individuals diagnosed with CVD experience depressive symptoms, anxiousness, irritability, fatigue, and other emotional reactions.[29] Once diagnosed, some persons may develop a “denial” response and others a dependent response identified as “invalidism”.[29] While those with a denial response may refuse to accept physical limitations and fail to acknowledge the development of physical symptoms, an invalidism response is characterized by the patient displaying helpless, dependent behaviors which may be unintentionally reinforced by the supporters.[29] Regardless of the benefit derived when social support is perceived as supportive, balanced, and meets the needs of the patient, it may also be seen as detrimental when the patient develops negative feelings from uselessness, indebtedness, or loss of autonomy.[29]

In the analysis, the PHQ was found to indicate a significant difference in self-report of depressive symptoms between the tertiles. Since depressive symptoms are a common response of individuals diagnosed with CVD, it is not unlikely that those participants classified as under-supported had the symptoms. Adequately supported participants reported depressive symptoms at a level between the under-supported, who reported the most depressive symptoms, and the over-protected, who reported the fewest depressive symptoms. Despite studies in which it was found that over-protection can lead to cardiac invalidism-- in this study of patients with HF, overprotection appears to be protective.

Notwithstanding self-reports of the incongruence of the relationship between desired and received social support, the second adjusted analysis (controlled for age, living alone, years of education, MOS-SAS score, BSI-A score, PHQ-9) demonstrated that only the measure of adherence, MOS-SAS, was of predictive in all-cause event-free survival. As the congruence between desired and received support and mortality was not identified in this population of HF patients, the most important predictor identified by the analysis is the impact on all-cause, event-free survival is adherence. Assessed in the study by administration of the MOS-SAS, this assessment of exercise, medication adherence, dietary assessment (including consumption of alcohol), cigarette smoking, daily weight and symptom monitoring evaluates vital domains of health for patients with HF and is a predictor for morbidity and mortality.

Adherence scores for this population indicated those who reported better adherence had higher rates of hospitalization and mortality than those with lower scores. This finding was unexpected as better adherence is most commonly associated with lower rates of hospitalization and mortality. There are several possible reasons for this finding including the following: in the context of an acute hospitalization patients may be less realistic and over-report adherence (especially those who are least adherent), patients may have concerns about conflict with health care providers if adherence is reported accurately, and those who are extremely adherent may over-react and be hyper-responsive to symptoms increasing frequency of hospitalizations.

Men of all support levels reported equal or higher mean MOS-SAS scores than women. The lowest mean MOS-SAS scores were reported by adequately-supported and over-protected women, under-supported women with under- and adequately-supported men had the mean highest scores but differences are not statistically significant. Women report having a greater need for support during times of stress than men and those with dependent personalities are most likely to adjust to the role of invalid and relinquish daily responsibilities and decision making.[29, 30] Despite gender differences in MOS scores, however, both gender and level of support did not meet the level of significance in the analysis (p=0.234).

Adherence encompasses much of the daily regimen for the client with HF. Encouraged to eat a low sodium or low fat diet, weigh daily, monitor for edema, and consume medications which may have unpleasant side effects—adherence is challenging for patients with HF. Unlike their counterparts with CVD who are diagnosed with myocardial infarctions (MI) or experience an acute cardiac illness, the participants in our study demonstrate that that chronicity of HF requires a long-term commitment to health maintenance where social support is rarely over-supplied. Crucial to aid the patients and silence the cacophony of symptoms of HF, the protectiveness of supporters is enhanced by shared awareness of the patients' potential for depressive symptoms, level of adherence, and mentoring to maximize all-cause event-free survival.

Limitations

A limitation to the study was the potential that participants felt unable to speak freely when responding to questions on the instrument. As many participants had family or other supporters at bedside, the presence of those individuals may have altered the reliability of the participants' responses, particularly as they related to social support questions. The mean age of the participants of the study was 63 years. As many individuals are being diagnosed with HF at a younger age, the social support balance of one age-group may not be equivalent to that of those who may have different social and occupational roles.

Implications for the Future

The impact of desired versus received social support remains worthy of continued study. Many researchers have identified the paralyzing effects of invalidism in cardiovascular disease. Subsequently, as the number of individuals diagnosed with CVD is climbing, it is important to identify not only the benefits but also the risks that can occur from social support.

Although the focus of much nursing research remains on reducing the physical symptoms of disease, the delicate balance of desired, needed, and received support should remain an area of concern. The short-term period of follow-up viewed here may not display unforeseen changes in the social support equilibrium during prolonged illness. Social support may wane over time as supporters can struggle with support-fatigue, personal obligations, and possible support-related discord. Thus, it is important to continue to monitor individuals over time to see if the impact of under-support, adequate-support, and over-protectedness on re-hospitalization and mortality change as the newness of the support relationship (or the impact and commitments from the most recent exacerbation) fades.

CVD affects both men and women, young and old in our society. Although there are many individuals with an abundance of first responders available to help them transition into life after an exacerbation of their illness, many individuals are left to advocate for themselves. The future of effective social support necessitates additional appraisal of the first responders as they coordinate to meet the emergent needs, enhance self-esteem, and re-establish autonomy, for the patient, when able. Then the patient can resume life with independence, confident that first responders for the heart are available should there be the need for emergent care once more.

Table 4.1: Patient Characteristics of the Sample, N=157

	Total N=157 Mean ± SD or n (%)
Age	63 ± 13
Gender, female	80 (51)
Marital status, married	66 (42)
Living alone	46 (29)
Caucasian compared to all others	115 (73)
Years of education	13 ± 3
BSI Anxiety Score	1.10 ± 0.9
MOS-SAS	26 ± 8
MSPSS	69 ± 17
PHQ	11 ± 6
UCLA-SSI discrepancy score	2 ± 1

Legend: BSI-A=Brief Symptom Inventory- Anxiety, MOS=Medical Outcomes Study, MSPSS=Multidimensional Perceived Social Support Scale, PHQ-9= Patient Health Questionnaire-9, UCLA-SSI=University of California Los Angeles Social Support Instrument

Table 4.2: Characteristics of the total sample and among groups based on gender and discrepancies in social support desired and received, N = 157

	Women, n = 80			Men, n = 77			
Variables	Under-supported, n = 29 Mean ± SD or N (%)	Adequately supported, n = 28 Mean ± SD or N (%)	Over-protected, n = 23 Mean ± SD or N (%)	Under-supported, n = 27 Mean ± SD or N (%)	Adequately supported, n = 27 Mean ± SD or N (%)	Over-protected, n = 23 Mean ± SD or N (%)	Overall p value
Age, years	63 ± 14	63 ± 13	63 ± 15	61 ± 11	61 ± 14	66 ± 14	0.474§
Education, years	12 ± 2	13 ± 2	13 ± 3	14 ± 3	12 ± 3	12 ± 3	0.080§
Gender	29 (52)	28 (51)	23 (50)	27 (48)	27 (49)	23 (50)	0.984§
Live with another person	20 (69)	19 (68)	17 (74)	17 (63)	19 (70)	19 (83)	0.383§
Race, Caucasian	19 (36)	21 (40)	13 (25)	22 (36)	26 (42)	14 (23)	0.560§
Adherence score on MOS	25 ± 7	24 ± 7	24 ± 9	27 ±7	27 ± 8	25 ± 8	0.728§
Anxiety score on BSI	1.1 ± 0.8	1.2 ± 0.9	1.0 ± 1.0	1.3 ± 0.9	1.2 ± 1.1	0.8 ± 0.6	0.592§
Depressive symptoms, score on PHQ-9	13 ± 5	11 ± 6	9 ± 6	12 ± 6	11 ± 7	8 ± 5	0.982¥
Social support score on MSPSS	62 ± 19	70 ± 13	75 ± 13	59 ± 19	74 ± 13	72 ± 18	0.452¥

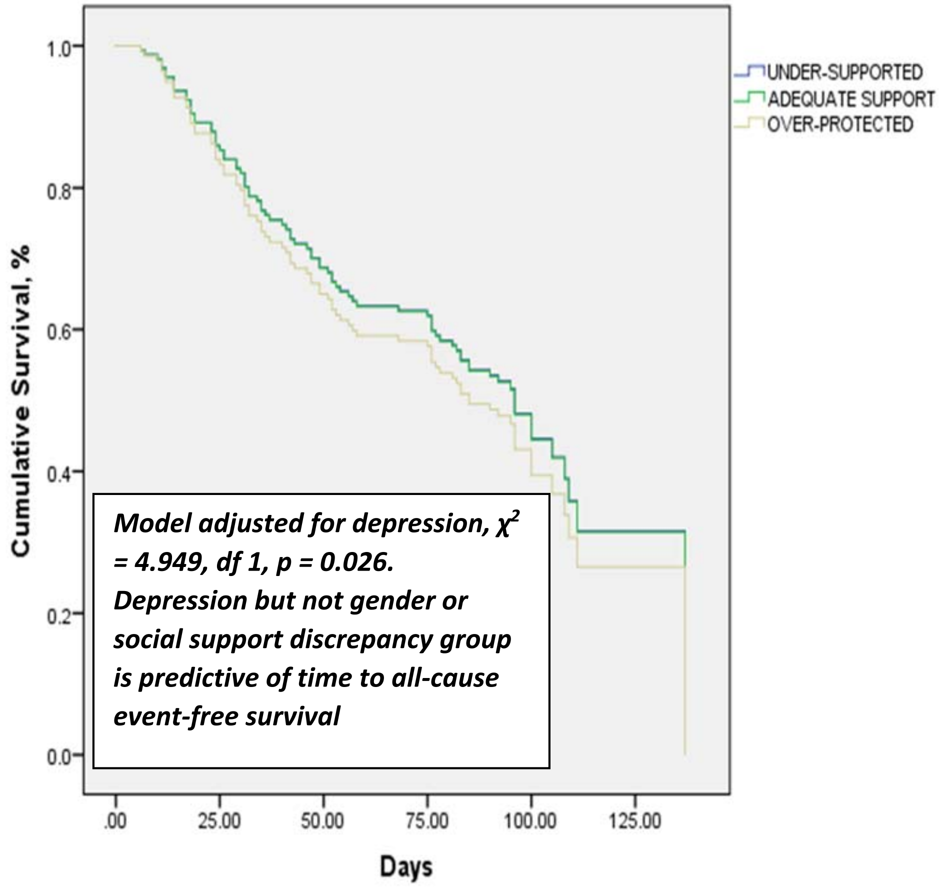
Legend: § = p value for the interaction of gender and social support discrepancy group; main effects also not significant. ¥ = p value for the interaction of gender and social support discrepancy group; main effect of gender is not significant, but the main effect of social support discrepancy group is ($p < 0.01$)
BSI-A= Brief Symptom Inventory-Anxiety, MOS= Medical Outcomes Study, MSPSS=Multidimensional Perceived Social Support Scale, PHQ-9 = Patient Health Questionnaire-9; SD = standard deviation, UCLA-SI= University of California Los Angeles Social Support Instrument

Table 4.3: Character among sample and among groups based on gender and 3-month outcomes

	Women, n = 80			Men, n = 77		
Variables	Under-supported, n = 29 N (%)	Adequately supported, n = 28 N (%)	Over-protected, n = 23 N (%)	Under-supported, n = 27 N (%)	Adequately supported, n = 27 N (%)	Over-protected, n = 23 N (%)
HF death	2 (7)	1 (4)	1 (4)	3 (11)	0 (0)	1 (4.3)
Cardiovascular death	1 (3)	0 (0)	0 (0)	0 (0)	2 (7)	0 (0)
Other death	0 (0)	1 (1)	0 (0)	2 (7)	0 (0)	0 (0)
Alive without event	14 (48)	14 (50)	11 (49)	12 (44)	11 (41)	9 (40)
HF hospitalization	5 (17)	8 (29)	2 (9)	4 (15)	3 (11)	6 (26.1)
Cardiovascular hospitalization	5 (17)	1 (4)	3 (13)	0 (0)	7 (26)	5 (22)
Oher hospitalizations	2 (7)	3 (11)	6 (26)	6 (22)	4 (15)	2 (9)

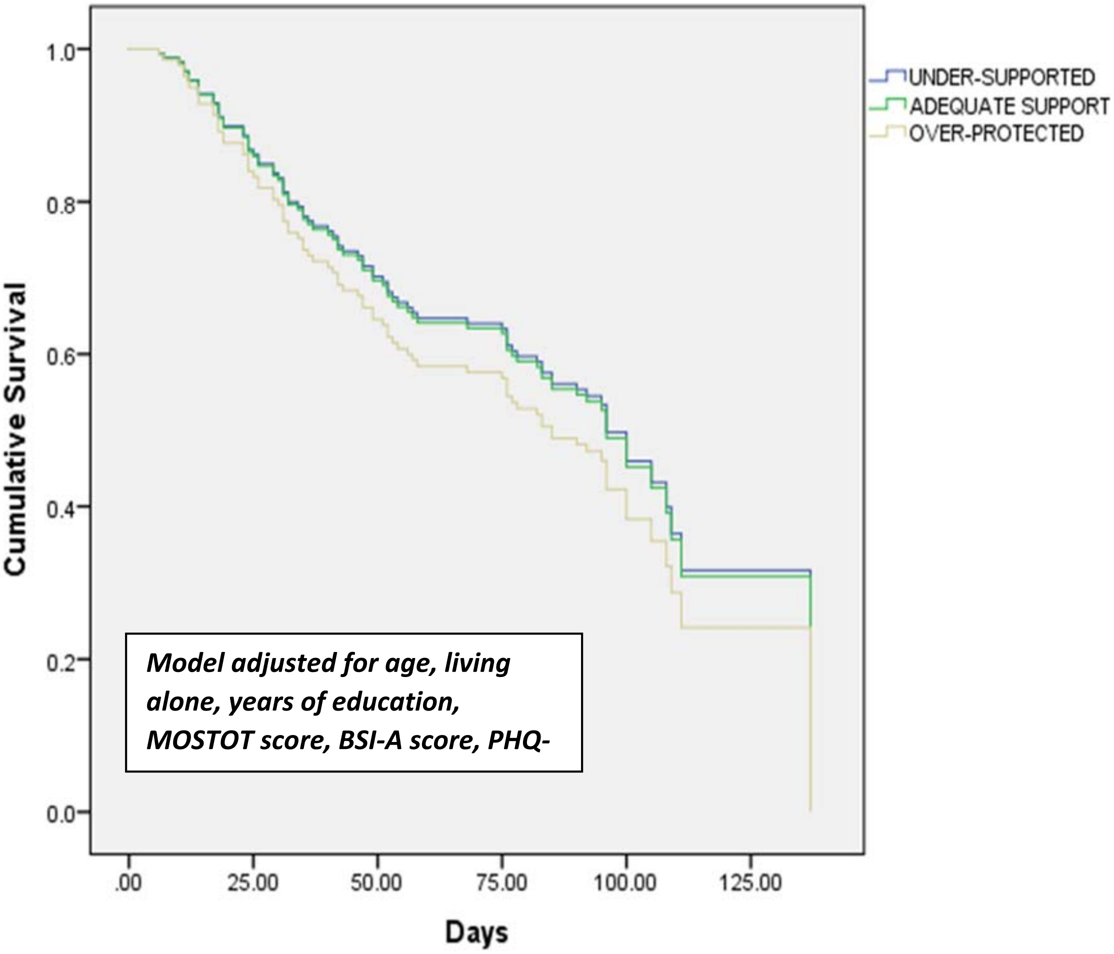
Table 4.4: Survival analysis			
Unadjusted model, χ^2 = 2.612, df 3, p = 0.455			
Variable	Odds ratio	95% confidence intervals	p value
Gender, male compared to female	1.39	0.906 – 2.137	0.131
Social support discrepancy group, under-supported and adequately supported compared to over-protected	0.96 0.87	0.560 – 1.631 0.514 – 1.477	0.869 0.609
Model adjusted for depression, χ^2 = 4.949, df 1, p = 0.026			
Gender, male compared to female	1.38	0.886-2.148	0.154
Social support discrepancy group, under-supported and adequately supported compared to over-protected	0.868 0.872	0.493-1.528 0.503-1.513	0.623 0.872
PHQ-9 score	1.041	1.006-1.007	0.022
Model adjusted for age, living alone, years of education, MOS score, BSI-A score, PHQ-9 score, χ^2 = 14.522, df 5, p = 0.013			
Gender, male compared to female	1.313	0.838-2.058	0.234
Social support discrepancy group, under-supported and adequately supported compared to over-protected	0.810 0.827	0.447-1.487 0.463-1.477	0.487 0.521
PHQ-9 score	1.024	0.985-1.065	0.227
Age	1.003	0.985-1.022	0.730
Living with someone else	1.004	0.603-1.674	0.986
Years of education	1.028	0.936-1.128	0.564
MOS-SAS	1.044	1.013-1.077	0.006
BSI-A	1.154	0.870-1.531	0.319
Legend: BSI-A=Brief Symptom Inventory- Anxiety, MOS-SAS=Medical Outcomes Study Specific Adherence Scale, PHQ-9= Patient Health Questionnaire-9			

Figure 4.1: Cumulative survival curve among the social support discrepancy score groups and by gender with adjustment for depression



Model adjusted for depression, χ^2 = 4.949, df 1, p = 0.026. Depression but not gender or social support discrepancy group is predictive of time to all-cause event-free survival

Figure 4.2: Cumulative survival curve among the social support discrepancy score groups and by gender differences with adjustment for age, living alone, MOS score, BSI-A score,



Model adjusted for age, living alone, years of education, MOSTOT score, BSI-A score, PHQ-

CHAPTER 5

They love me too much; they love me not enough: Identifying the balance of social support for patients with cardiovascular disease

Background

The studies in this dissertation focused on the phenomena of social support and extend current knowledge by examination of the commonly overlooked issue of the balance between cardiovascular disease (CVD) patients' desired and received social support. The vast majority of investigators have focused solely on the quality of social support without addressing whether the social support received was more or less than desired.

As the main study in this dissertation, I conducted an observational study to assess the association of congruence between desired and received social support upon rehospitalization and mortality and whether there were gender differences in any association. Prior to evaluating that association, two manuscripts were prepared. The first was a comprehensive review of the literature to assess the evidence of gender differences in CVD patient's perception of the concordance between desired and received social support and if gender differences in patients' perceptions of concordance are associated with differences in health outcomes. The second was a secondary analysis of a cross-sectional observational study designed to determine whether there is a differential relationship between perceived social support and depression in African American and Caucasian patients with heart failure (HF).

The economic and physical toll imposed by cardiovascular disease (CVD) on the United States is devastating. With national expenditures of more 100 trillion dollars in in healthcare and medication, (including costs from losses in productivity), CVD is responsible for the deaths of 1 out of every 3 Americans daily.[1, 2] Prior to death, however, CVD cripples its victims with debilitating symptoms and disorders including angina, myocardial infarction (MI), heart failure, and arrhythmias.[2, 3] Patients with CVD face many physical challenges as they battle their disorders. In addition to these physical challenges, they are also faced with emotional and social obstacles.[4, 5] Interpersonal relationships can help patients navigate through these obstacles, and have a positive emotional and social impact on patients and health outcomes. These interpersonal relationships generate what is termed social support.

For many years, researchers have acknowledged an association between personal relationships and mortality.[6] Social support, however, extends beyond friendships. It is a collection of tangible and intangible experiences that surround people throughout life as they cope with daily stresses and adjust to change. Supporters are unique to each individual and may include family members, friends, co-workers, healthcare providers, and others identified by the patient as sharing in life's ups and downs. Just as each person has unique supporters, it is also important to individualize the amount of social support necessary for the patient to have a sense of feeling important, loved, and appreciated while achieving an effective balance between received and desired social support. [7]

Identifying CVD as imposing medical, social, and physical challenges on their lives, individuals with lower levels of social support have been identified as at greater risk of developing CVD and of having a more negative prognosis once diagnosed.[6, 8-11] For those with CVD, social support is also associated with lower levels of anxiety, the report of fewer depressive symptoms, fewer cardiac symptoms, slowed progression of illness, delayed frequency of hospitalization, and reduced mortality.[8] In addition to the reduction of physical symptoms, adequate social support has been associated with improved health behavior, increased adherence to medication, and improved blood pressure.[9]

Despite acknowledgement of the association between personal relationships and mortality or health outcomes, little research has been done to identify patient perceived differences in desired and received social support. Even less has been done to determine if there are gender differences in such perceptions in patients with CVD. Seeking a balance between loving too much or loving not enough, research is needed to identify if the discrepancy between desired and received social support has an impact on the patients' rehospitalization and mortality. The purpose of this chapter was to review and integrate the evidence gathered for this dissertation and advance the state of the science for patients with CVD by providing recommendations for additional research to evaluate discrepancies between gender differences in desired and received support, the impact of social support discrepancies on mortality and rehospitalization and to establish accuracy in more appropriately matching support desired with support received.

Summary of findings

Chapter Two was a comprehensive review of the literature to assess the current evidence of gender differences in the concordance between desired and received social support in cardiovascular patients. As there were only six studies which met inclusion criteria, it is apparent that there is a gap in the literature regarding the differences in desired and received support between the sexes. I found, in this very limited literature base, that there are gender differences in the needs for social support and in discrepancies between desired and perceived social support. Although men and women currently share many similar social, economic and occupational stressors in life, these shared roles do not negate the need for continued study of discrepancies in desired support. Thus, it was recommended that additional research is needed to evaluate these discrepancies and, if found, how these discrepancies influence health outcomes between men and women

Chapter Three was a secondary analysis of a cross-sectional observational study to investigate the differential relationship between perceived social support and depression in African Americans and Caucasians. This study was conducted using baseline data of 323 individuals from the RICH Heart HF registry. Baseline characteristics between African American and Caucasian participants were compared using chi-square, independent tests or Mann-U Whitney tests as appropriate. Multiple regression was conducted to determine whether perceived social support was associated with depressive symptoms while controlling for race (African American and Caucasian), age, gender, whether the individual lives alone, NYHA class, and educational level. Variables were all entered into the regression equation in order to produce simultaneous control. Next, in order to determine whether race moderated the association of perceived social support with depressive symptoms, race, perceived social support and their interaction was regressed on depressive symptoms. The sobel statistic was used to test the significance of the slopes of the interaction term.

In the first multiple regression, 26% of the variance in depressive symptoms was explained by the model that included race, age, gender, whether the individual lives alone, NYHA class, and perceived social support (F [7,898] =16.4, p<0.001). Age, education level, NYHA class and perceived social support were the only significant variables in this regression. Younger age, lower education level, worse NYHA class, and lower levels of perceived social support were associated with higher levels of depressive symptoms.

In the second model, unadjusted for other covariates in order to directly test moderation, 15% of the variance in depressive symptoms was explained by race, perceived social support and their interaction. All variables in the equation were significant predictors of depressive symptoms demonstrating moderation by race of the association between perceived social support and depressive symptoms. Higher levels of perceived social support were associated with lower levels of depressive symptoms. The relationship was substantially steeper among Caucasian than African Americans.

Chapter Four was an observational study performed to evaluate the association of the discrepancy between desired and received support and subsequent rehospitalization among individuals hospitalized with an exacerbation of HF. This study was conducted using baseline data (discrepancy in support desired and received) collected from 157 inpatients at three metropolitan hospitals in the south-central area of the United States. Outcomes were collected at one and three months' post-discharge to assess for re-hospitalization or mortality during the period.

Participants were divided into tertiles determined by the difference between desired and received support dimensions of an adaptation of the University of California-Social Support instrument. The tertiles were identified as under-supported (less support received than desired), adequately supported (approximately equal amounts of desired and received support) and over-protected (more support received than desired). ANOVA was performed to determine if participants in the social support tertiles differed in depression, anxiety, or self-reported adherence, as well as sociodemographic characteristics. Lastly, Cox proportional hazards regression was performed to determine discrepancies in desired and received social support predicted hospital readmission or mortality.

Patients in the under-supported versus the over-protected social support discrepancy groups had substantially higher levels of depressive symptoms. There was no main effect of sex in this relationship. In the Cox proportional hazards model, discrepancy between desired and received social support did not predict all-cause event-free survival, although higher adherence scores predicted earlier time to event. Although no significant relationship was identified by the hazard model, the balance of desired, needed, and received support remains an area which needs further study with additional analysis of differences in outcomes between younger individuals diagnosed with HF and also differences between those with short-term versus long-term support needs.

Impact of the dissertation on the state of the science

Although social support has been acknowledged as a variable that affects health outcomes, it is surprising that the impact of gender differences on the effects of social support have not been the focus of much investigation. Despite the fact that men and women today engage in many similar roles and experience similar stressors, minimal research has been performed to identify the social support strategies most likely to identify the differences in social support needs between the sexes. They love me too much: they don't love me enough. The state of the science for patients with CVD currently does not provide evidence to support meeting the needs of the differences in desired and received social support needs between men and women.

Through my study, I have advanced the state of the science for social support needs of patients with CVD. I have advanced the state of the science through identifying differences in the concordance of desired and received social support between men and women, and identified variables of significance related to the differential relationship between perceived social support and depression scores in African American and Caucasian HF patients. Additionally, I have demonstrated the importance of continuing to investigate the impact of increased mortality and reduced health outcomes with mismatched desired and received social support for patients hospitalized with an exacerbation of HF.

Upon completing Chapter Two, the comprehensive review of the literature, I determined that there are distinct differences in the social support preferred by men and women. Women prefer friendly relationships with healthcare staff, emotional support and support group membership.[12-14] Women also verbalized distress when relying on relatives for primary support with the majority of women participants desiring more social support than received.[13, 14] While men identify illness-related support with healthcare professionals as emotional support, men preferred to share personal thoughts (including financial and employment worries) with their spouses.[14, 15] Additionally, despite acknowledging that social norms may have influenced the difference in men's responses, the majority of male participants in the studies reviewed identified satisfaction in the balance between the amounts of desired and social support received.[16]

In Chapter Three, I identified that African American participants were more likely to be younger, and to live alone. In my analysis, younger age, lower education level, worse NYHA class, and lower levels of perceived social support were associated with higher levels of depressive symptoms. Additionally, as higher levels of perceived social support were associated with fewer depressive symptoms, it was found that the relationship was substantially steeper among Caucasians than African Americans. After assessing the results of the analysis, it has been demonstrated that it is important to continue to evaluate ethnicity/racial differences in perception of social support and depression. Additionally, I also identified that the increasing younger population of individuals diagnosed with CVD may benefit from nontraditional forms of support including online and telephone support groups which more accurately replicate pre-illness modes of communication and entertainment.

In Chapter 4, I identified a significant difference in the depressive symptoms scores reported on the PHQ-9 between the under-supported and over-protected tertiles of my study. In adjusted and unadjusted analysis neither social support congruency score group was predictive of all-cause event-free survival. However, in the first adjusted analysis when controlling for depression, the depression score (p=0.022) was predictive of all-cause event-free survival. Each one-unit increase in PHQ-9 score signified a 4.2% increase in the risk of an event.

In the second adjusted analysis when controlling for age, living alone, years of education, Medical Outcomes Study (MOS), Brief Symptom Inventory-Anxiety (BSI-A), and PHQ-9, only the MOS (p=0.006) score was predictive of all-cause event-free survival. Each one-unit increase in MOS score signified a 4.4% increase in risk of an event. Nevertheless, hospital re-admission and mortality rates in this population did not vary significantly from the under-supported to the over-protected.

Are they loved too much? Are they not loved enough? This dissertation provides an important contribution to nursing literature because it examines the little-studied topic of the gender preferences and social support for persons diagnosed with cardiovascular disease. As the prevalence of individuals with CVD is high and its symptoms so dramatically impact the patient--physically, economically, and socially, it is essential to understand if we are loving them too much creating dependency or if we are not loving them thus enough magnifying their struggles. How do we love them just right?

Recommendations for nursing practice and research

As CVD continues to impact the lives of more individuals each day and many afflicted may not have the benefit of a close-knit or nuclear family to provide support in times of need, more research must be done to identify the types of support most beneficial for those with heart disease. Although no significant relationship was established between discrepancies in desired versus received social support and sex-related differences with all-cause, event-free survival this topic needs further investigation.

One aspect of further research should include use of the convoy model of social relations in the identification of discrepancies between desired versus received social support. The convoy model uses the concept of social support but employs it throughout the lifespan.[17] The convey is an energetic relationship of concentric circles of supporters, often relatives, who are identified as “close”, “closer”, and “closest” and provide multiple aspects of social support.[17, 18] Rather than identifying supporters as “family” or “friends”, convoys identify supporters based on relationship, age, sex, contact frequency and proximity.[18] As the newborn child’s convoy meets vastly different needs than it will when he has become an older adult, convoys are not stationary vehicles.[17] Rather, as people are recruited to enter an individual’s convoy, new roles are appointed and new duties are delegated.[17] The active nature of the convoy provides both personal and situational supports which impact ongoing socialization, health and welfare.[17, 18]

For those without a significant relationship, the lack of an extensive personal network does not negate the importance of identifying discrepancies in desired and received levels of social support. Approximately 5.1 million individuals over the age of 20 have HF and many of these individuals increase the severity of their disorder through the presence of modifiable risk factors and co-morbidities including hypertension, diabetes, and systolic dysfunction.[19] As the mean age of participants in these studies were 61 and 63, respectively, there are many individuals whose social and economic circumstances may vary greatly from the older adult population.

Many persons currently diagnosed with heart disease are younger than in previous years. Additionally, both modifiable and non-modifiable factors are exacting their toll on those who may not have had the opportunity to establish a comparable network of support that many older adults may have developed over their lifetime. Therefore, additional study must be done to identify preferred means of support both by gender and age. Also, re-evaluating individuals beyond a 3 -month follow-up period for rehospitalization or mortality would also be beneficial to evaluate the effectiveness of social support on CVD when it evolves from short-term to long-term needs.

The heart is a symbol of all that is important. We speak of “stolen” hearts, “broken” hearts, and “lonely” hearts. This dissertation has filled a void in the literature in the establishment of a balance between support that empowers versus support that enables. Observation and evaluation will be ongoing to continue to advance the state of the science and endeavor to answer the question, do they love me too much, not enough, or just right?

The electronic society of today emphasizes social media and the importance of “friending” individuals on Facebook or “tweeting” on Twitter. This implies that increased numbers of contacts yield increased benefit. However, social saturation may not be the social support solution for many with CVD. Rather, aiding the recipient to receive and maintain desired support may have far-reaching implications as individuals retain autonomy despite declining health.

APPENDIX

1. At certain times, we want information or advice about personal problems or our healthcare. For example, we might want information about a particular problem, or advice in making an important decision. Within the past month, how often have you desired information or advice from others?

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

2. Within the past month, how often have you desired information or advice from others concerning any personal problems or your health?

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

3. In general, how satisfied or dissatisfied have you been with all the information and advice you have received in the past month? .

1	2	3	4	5	6	7
Very dissatisfied			Neither satisfied nor dissatisfied			Very satisfied

4. At certain times, we want minor assistance, like help with a small task such as household tasks or simple errands. Within the past month, how often have you desired such assistance? .

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

5. At certain times, we want major assistance or help with a large task such as moving, financial assistance, or help getting to a doctor. Within the past month, how often have you needed such assistance?

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

6. In general, how satisfied or dissatisfied have you been with the assistance – both minor and major-- you have received from everyone in the past month? .

1	2	3	4	5	6	7
Very dissatisfied			Neither satisfied nor dissatisfied			Very satisfied

7. At certain times, we want to feel loved and cared about by others. Within the past month, how often have you desired to feel loved and cared about by others? .

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

8. At certain times, we want to feel like a good person whom others think well of. Within the past month, how often have you desired to feel respect and/or acceptance from others?

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

9. At certain times, we want encouragement and reassurance to help us manage a specific situation. For example, sometimes we want to be consoled when we're upset or encouraged in general. Within the past month, how often have you desired this?

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

10. In general, how satisfied or dissatisfied have you been with the love and caring you have received in the past month?

1	2	3	4	5	6	7
Very dissatisfied			Neither satisfied nor dissatisfied			Very satisfied

11. In general, how satisfied or dissatisfied have you been with respect, approval, and acceptance you have received in the past month?

1	2	3	4	5	6	7
Very dissatisfied			Neither satisfied nor dissatisfied			Very satisfied

12. In general, how satisfied or dissatisfied have you been with the encouragement and reassurance you have received in the past month?

1	2	3	4	5	6	7
Very dissatisfied			Neither satisfied nor dissatisfied			Very satisfied

13. At certain times, we want someone to listen to our concerns and feelings. Within the past month, how often have you desired this?

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

14. At certain times, we want someone to do more than listen to us. We want them to understand our situation and empathize with our feelings. Within the past month, how often have you desired this?

    1. Never
    2. Rarely
    3. Sometimes
    4. Often
    5. Very often

15. In general, how satisfied or dissatisfied have you been with the listening, understanding and empathy you have received in the past month? *Circle one. SHOW CARD 10.*

1	2	3	4	5	6	7
Very dissatisfied			Neither satisfied nor dissatisfied			Very satisfied

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CHAPTER FOUR

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CHAPTER FIVE

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validation of the multidimensional scale of perceived social support. *Psychosomatics.* Sep-Oct 2009;50(5):461-467.

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Curriculum Vitae

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Education

Institution	Degree	Date Conferred	Field(s) of Study
Spalding University	BSN	2008, June	Nursing
Spalding University	MSN	2010, June	Nursing
University of Kentucky	PhD		Nursing

Certifications and Licensure

Registered Nursing Licensure—Kentucky (Compact) KY 1116647
Registered Nursing Licensure—Indiana 28213710A
Adult Progressive Care Nursing—American Association of Critical Care Nurses
Certified Nurse Educator—National League for Nursing

Professional Experience

Dates	Institution and Location	Academic Position
August, 2010-present	University of Louisville College of Nursing, Owensboro, KY	Instructor
January, 2010-August, 2014	Spalding University, Louisville, KY	Adjunct Instructor
July, 2015-October, 2015	Ascend Learning, Leakwood, KS	Consultant/ATI Vendor

Dates	Institution and Location	Clinical Position
October, 1990-present	Norton Healthcare, Louisville, KY	PRN Staff Nurse
February. 2014-present	Hosparus, Louisville, KY	PRN Customer Support Nurse

Educational Presentations

Reconciling and Resuming Psychotropic Medications in the Post-operative period: A reminder for nurses—Scholarship Day. Spalding University, Louisville, KY—April, 2010

Academic Service

Teaching

Quarter or Semester, Date	Course title and number, credit hours
June, 2010	Nursing 304, Fundamental of Nursing, 3 credit hours Spalding University, Louisville, KY
Fall, 2010	Nursing 372, Psychiatric Mental Health, 6 credit hours University of Louisville, Owensboro, KY
Fall, 2010	Nursing 395, Pharmacology, 3 credit hours University of Louisville, Owensboro, KY
Spring, 2011	Nursing 372, Psychiatric Mental Health, 6credit hours University of Louisville, Owensboro, KY
Spring, 2011	Nursing 395, Pharmacology, 3 credit hours University of Louisville, Owensboro, KY
June, 2011	Nursing 507/608, Transitions, 3 credit hours Spalding University, Louisville, KY
July, 2011	Nursing 411, Leadership and Management, 3 credit hours Spalding University, Louisville, KY
Fall, 2011	Nursing 372, Psychiatric Mental Health, 6 credit hours University of Louisville, Owensboro, KY
Fall, 2011	Nursing 364, Therapeutic Nursing Interventions,4 credit hours University of Louisville, Owensboro, KY
Spring, 2012	Nursing 372, Psychiatric Mental Health, 6 credit hours University of Louisville, Owensboro, KY
Spring, 2012	Nursing 364, Therapeutic Nursing Interventions, 4credit hours University of Louisville, Owensboro, KY
June, 2012	Nursing 507, Transitions to Nursing Practice, 3 credit hours Spalding University, Louisville, KY
July, 2012	Nursing 475, Advanced Concepts Capstone, 4 credit hours Spalding University, Louisville, KY
Fall, 2012	Nursing 372, Psychiatric Mental Health, 6 credit hours University of Louisville, Owensboro, KY
Fall, 2012	Nursing 364, Therapeutic Nursing Interventions,5 credit hours University of Louisville, Owensboro, KY
August, 2012	Nursing 475, Advanced Concepts Capstone, 4 credit hours Spalding University, Louisville, KY
October, 2012	Nursing 507, Transitions to Nursing Practice, 3 credit hours Spalding University, Louisville, KY
December, 2012	Nursing 475, Advanced Concepts Capstone, 4 credit hours Spalding University, Louisville. KY
Spring, 2013	Nursing 372, Psychiatric Mental Health, 6 credit hours University of Louisville, Owensboro, KY
Spring, 2013	Nursing 364, Therapeutic Nursing Interventions, 5 credit hours University of Louisville, Owensboro, KY

January, 2013	Nursing 506/607 Transitions to Nursing Practice, 3 credit hours Spalding University, Louisville, KY
March, 2013	Nursing 475, Advanced Concepts Capstone, 4 credit hours Spalding University, Louisville, KY
May, 2013	Nursing 506, Transitions to Nursing Practice, 3 credit hours Spalding University, Louisville, KY
August, 2013	Nursing 314, Health Assessment Across the Lifespan—Clinical Instructor Spalding University, Louisville, KY
Fall,2013	Nursing 364, Therapeutic Nursing Interventions, 5 credit hours University of Louisville. Owensboro, KY
Fall, 2013	Nursing 372, Psychiatric Mental Health Nursing, 6 credit hours University of Louisville, Owensboro, KY
October, 2013-January, 2014	Nursing 325, Beginning Medical- Surgical Nursing—Clinical Instructor Spalding University, Louisville, KY
Spring, 2014	Nursing 364, Therapeutic Nursing Interventions, 5credit hours University of Louisville. Owensboro, KY
Spring, 2014	Nursing 372, Psychiatric Mental Health Nursing, 6 credit hours University of Louisville, Owensboro, KY
February, 2014-April, 2014	Nursing 425, Advanced Medical Surgical Nursing—Clinical Instructor Spalding University, Louisville, KY
April, 2014-June, 2014	Nursing 506/607 Transitions to Nursing Practice, 3 credit hours Spalding University, Louisville, KY
Summer, 2014	Nursing 304, Fundamentals of Nursing, 3 credit hours, Spalding University, Louisville, KY
Fall, 2014	Nursing 364, Therapeutic Nursing Interventions, 5 credit hours, University of Louisville, Owensboro, KY
Fall, 2014	Nursing 372, Psychiatric Mental Health Nursing, 6 credit hours, University of Louisville, Owensboro, KY
Spring, 2015	Nursing 364, Therapeutic Nursing Interventions, 5 credit hours, University of Louisville. Owensboro, KY
Spring, 2015	Nursing 372, Psychiatric Mental Health Nursing, 6 credit hours, University of Louisville, Owensboro, KY
Fall, 2015	Nursing 364, Therapeutic Nursing Interventions, 5 credit hours University of Louisville, Owensboro, KY
Fall, 2015	Nursing 372, Psychiatric Mental Health Nursing, 6 credit hours University of Louisville, Owensboro, KY
Spring, 2016	Nursing 364, Therapeutic Nursing Interventions, 5 credit hours University of Louisville, Owensboro, KY
Spring, 2016	Nursing 372, Psychiatric Mental Health Nursing, 6 credit hours University of Louisville, Owensboro, KY

Academic Service

Dates	Committee Name	Role
August, 2010- present	Faculty Organization	Member
August, 2010-May 2015	Undergraduate Program Council	Member
August, 2010-May, 2015	Admission/Progression/Graduation Committee	Member
August, 2011-May, 2015	Student Affairs Subcommittee	Member
August, 2012-August, 2013	Student Affairs Subcommittee	Co-chairperson
August, 2014-May, 2015	Student Affairs Subcommittee	Chairperson
August, 2015- present	Doctoral Academic Affairs Committee	Member

Community Service

River Valley Human Rights Council, Owensboro, KY February, 2011-present
Council on Developmental Disabilities (Nurse Advocate), Louisville, KY
October 2010-present