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THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS: THE SOCIAL SUPPORT EXCHANGE PROCESS

by

RIFKY TKATCH

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

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MAJOR: PSYCHOLOGY (Cognitive, Developmental, and Social Psychology)

Approved by:

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Advisor Date

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DEDICATION

My father died when I was 8 years old. Most of what I know about him is from the stories I hear from others. His greatest pride was his four daughters and he had many hopes and dreams for us. I know that physically he is not here to see this momentous event but I do believe that he is here in spirit. For that reason, *Tatty* this accomplishment is dedicated to you. I thank you for *davening* for me at the *Kisei Hakovod* every time that I have needed it. I know that my success is, in part, because of these *tefillos.*

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CHAPTER 1

Introduction

After decades of research, social support is well known as a health-benefiting advantage of dyadic relationships (Abbey, Andrews, & Halman, 1995; Brown, Nesse, Vinokur, & Smith, 2003; Franks et al., 2006; Schulz & Schwarzer, 2004). Although many investigators have examined it from the recipient's perspective, there is much less known about the support exchange process. Few studies have examined these exchanges as support is sought, provided and received. The extent to which individuals believe they have received the type of support they need should be a consequence of what type of support they sought and what their partner provided. Exchanges with a high level of concordance should produce better psychological and physiological well-being. The current study investigates the support exchange process among African American cardiac rehabilitation patients and their self-selected support partners. This chapter reviews the relevant literature and then describes the study's hypotheses.

Health Disparities and Cardiovascular Disease

Cardiovascular disease (CVD) is the leading cause of death among all Americans (Centers for Disease Control and Prevention [CDC], 2009). CVD refers to a multitude of heart conditions, and it is estimated that approximately 80 million Americans have at least one form of CVD (American Heart Association [AHA], 2009). According to the CDC (2009), 630,000 Americans die from some form of CVD every year, which translates into 1 in every 4 American deaths each year. Approximately one third of American adults have at least 2 major risk factors for heart disease. Some of these risk factors include high blood pressure, high cholesterol, diabetes, and

behavioral factors such as smoking, inactivity, obesity and diet. Many Americans have the ability to reduce their risk for major cardiac events, including second events, by modifying their health behaviors (AHA, 2009). This includes maintaining a healthy diet, being physically active and quitting smoking. The economic costs of CVD strain the American health care system and economy, with an estimated cost of over 300 billion dollars in health care services, medications and lost productivity for 2009 (CDC, 2009).

There are large disparities in CVD and mortality between African Americans and Caucasians (AHA, 2009). According to the AHA, CVD prevalence is 46% for African American males and females, 38% for Caucasian males, and 33% for Caucasian females. Similarly, African Americans are 33% more likely to die from CVD than those of other racial and ethnic groups. This is largely attributed to higher rates of hypertension, high cholesterol, diabetes and obesity, as well as lower rates of physical activity. For example, over 40% of African American adults have high blood pressure. The AHA (2009) reports that African Americans are not only more likely than Caucasians to have high blood pressure, African Americans also develop high blood pressure at younger ages and are more likely to have more severe cases than Caucasians. The AHA (2009) estimates that the death rates related to high blood pressure were 52% for African American males and 40% for African American females as compared with 16% for Caucasian males and 15% for Caucasian females.

The Benefits of Cardiac Rehabilitation and Social Support

Diagnosis of cardiovascular disease often leads to a recommendation of cardiac rehabilitation for patients by their health care providers. The AHA (2009) describes cardiac rehabilitation as a partnership between patients and various health care

providers (ie. physicians, nurses, nutritionists and exercise physiologists) in which the patient takes an active role in making health behavior changes to combat their heart disease. Cardiac rehabilitation is considered ideal to promote recovery, reduce future cardiac events and improve quality of life among patients with cardiovascular disease (Evans, Probert & Shuldham, 2009).

Research has also demonstrated that African Americans are less likely than Caucasians to be referred to cardiac rehabilitation and even if referred, less likely than Caucasians to enroll in cardiac rehabilitation (Allen, Scott, Stewart,& Young, 2004; Cortés & Allen, 2006). This study focuses on the role of social support as a psychosocial resource that can enhance African American cardiac patients' recovery and long-term health.

Cardiac rehabilitation patients are an ideal population in which to study the support exchange process and to measure its subsequent health benefits. Cardiac rehabilitation is a structured program of education and physical activity geared toward lifestyle modification, increasing functional capabilities and providing peer support for patients with cardiovascular disease, including patients that have recently had a myocardial infarction, undergone bypass surgery, or are in varying stages of congestive heart failure (Wenger, Sivarajan Froelicher, & Smith, 1999). Patients in cardiac rehabilitation typically must make major changes in their lives in order to reduce the likelihood of recurrent cardiac events and death. Cardiac rehabilitation patients are often surrounded by well-meaning friends and family who want to be supportive but do not always know the best ways to provide support and avoid sounding critical. Therefore, research is needed that examines the support exchange process and

determines which elements produce the best psychological and physiological outcomes for cardiac rehabilitation patients.

The health benefits of social support have been studied within the context of cardiac rehabilitation (Franks et al., 2006; Hong et al., 2005; Luszczynska & Cieslak, 2009; Woodgate, Brawley, & Shields, 2007). These benefits have included better patient mental health, greater patient self efficacy and improved patient health behaviors. Although, some studies have used dyadic measures to study social support exchanges among cardiac rehabilitation patients (Franks et al., 2006; Hong et al., 2005), the vast majority have not. Consequently, investigating social support among African American cardiac rehabilitation patients may elucidate psychosocial mechanisms that can ultimately reduce the health disparities in cardiovascular disease outcomes.

Dimensions of Social Support

Social support is one of the most well-examined constructs within health psychology (Burleson, 1994; Cohen & Wills, 1985; Dunkel-Shetter & Bennett, 1990; House & Kahn, 1985; Uchino, 2004). Social support is an important resource provided by members of one's social network and conveys the information that one is loved and will receive care in times of need (House, Umberson, & Landis, 1988; Kahn & Antonucci, 1980). Three important functions of social support have been identified: emotional, informational and instrumental (House & Kahn, 1985). Emotional support is empathetic caring and concern as well as reassurance. Informational support is the provision of guidance via knowledge and advice that assists the recipient. Instrumental support provides tangible resources such as time, money and transportation.

Social support is typically measured from one of two perspectives: perceived or enacted (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Helgeson, 1993; Lakey & Cassady, 1990; Uchino, 2009). Perceived support is defined as the amount of support individuals believe would be available from close social network members if needed. In contrast, enacted support is defined as individuals' perception of the amount of support received, usually in relation to a specific experience, such as an illness or hospitalization.

The relationship between perceived support and enacted support is only moderate (Haber, Cohen, Lucas, & Baltes, 2007; Helgeson, 1993), suggesting that they measure different dimensions of social support. Many researchers have found stronger associations between perceived support and outcome measures than enacted support and outcome measures (Cohen & Wills, 1985; Kaul & Lakey, 2005; Sarason, Sarason & Pierce, 1994). Perceived support appears to be a relatively stable aspect of personality, a function of attachment style and similarity to the support provider, rather than an assessment of specific support exchanges (Branje, van Lieshout, & van Aken, 2005; Collins & Feeney, 2004; Crocker & Canavello, 2008; Lakey et al, 2002). Individuals often feel disappointed when others do not live up to their expectations during times of need. Enacted support is the recipient's perception of the support provided during a specific time frame (Collins et al., 1993; Norris & Kaniasty, 1996). The health benefits of enacted support are more likely to occur when the support is needed, and when what is provided matches what the recipient needs (Gleason, Iida, Shrout, & Bolger, 2008). In this study, enacted support was measured in order to assess patients' perceptions of the extent to which they received the types and amount of support they desired.

Social support can also be examined as either *received* support or *provided* support. Social support is most often studied from the perspective of the recipient; however, the perspective of the provider is also an important dimension. Received support is the amount of support one believes one has been given, usually from a social network member. Conversely, provided support is the amount of support one believes one has given to another. Both dimensions of support yield psychological and physiological health benefits (Brown, Brown, House, & Smith, 2008; Brown et al., 2003; Franks et al., 2006; Reblin & Uchino, 2008; Schwarzer, Luszczynska, Boehmer, Taubert, & Knoll, 2006). Although these two dimensions are related to one another, they are conceptually and empirically distinct (Abbey et al., 1995; Franks et al., 2004; Piferi & Lawler, 2006). Less commonly studied is support seeking by one individual prior to support provision by a support partner or one's actual support receipt. Seeking support is often considered to be a form of positive coping and a component of psychologically healthy dyadic interactions (Barbee, Derlega, Sherburne, & Grimshaw, 1998; Collins & Feeney, 2000; Winkeler, Filipp, & Aymanns, 2006).

Research Documenting the Health Benefits of Received Social Support

The health benefits of received social support have been of great interest to researchers and has been shown to have many psychological and physical health benefits (Boehmer, Luszczynska, & Schwarzer, 2007; Cutrona & Russell, 1990; DiMatteo, 2004; Luszczynska & Roman, 2009; Molloy, Perkins-Porras, Bhattacharyya, Strike, & Steptoe, 2008; Scholz, Knoll, Roigas, & Gralla, 2008; Uchino, 2004). In a meta-analysis of 122 studies examining the relationship between social support and patient adherence to medical treatment, DiMatteo (2004) found that receiving emotional

and practical (instrumental) support was significantly associated with patient adherence. Strine, Chapman, Balluz and Mokdad (2008) found that low levels of emotional support were related to increased pain, activity limitations, depressive symptoms and anxiety symptoms in a large community sample of adults across the United States. In a longitudinal study of newly diagnosed cancer patients, higher initial levels of informational support predicted higher levels of quality of life and self-efficacy five months later (Arora, Rutten, Gustafson, Moser, & Hawkins, 2007).

Received support is also important for patients recovering from a cardiac event. For example, in a sample of 279 patients who had recently undergone a coronary artery bypass surgery, patients who reported higher levels of received social support from family members had better subjective health, fewer depressive symptoms, less anxiety, and less hopelessness than those patients reporting low levels of support (Okkonen & Vanhanen, 2006). Similarly, in a study of 262 cardiac rehabilitation patients, Molloy et al. (2008) found that patients who received higher levels of practical (instrumental) support had better medication adherence and had better cardiac rehabilitation attendance as compared to those who received little or no support. In a study of 1,072 coronary artery bypass surgery patients, higher levels of instrumental support were predictive of greater levels of mental health six months after surgery (Barry, Kasl, Lichtman, Vaccarino, & Krumholz, 2006).

Although many of these studies found specific health benefits, such as better adherence or reductions in pain, they can also be summarized as demonstrating that receiving social support is related to better psychological well-being and better physical well-being (or conversely receiving low levels of social support is related to worse

psychological well-being and worse physical well-being). The vast literature on receiving social support provides this study with a general classification of psychological well-being and physical well-being outcomes. Psychological well-being is defined as a general feeling of positive mood, feeling mentally capable of dealing with one's daily routine and social interactions. Physical well-being is defined as the general ability to engage in required activities of daily living without limitations of pain (Ware, Kosinski, & Keller, 1995). Cardiac rehabilitation patients show significant decreases in both psychological and physical well-being, thus it is important to examine how social support can improve these outcomes (Jette & Downing, 1994).

Research Documenting the Health Benefits of Provided Social Support

Provided support is health benefitting to both the provider and the recipient (Brown et al., 2003; Brown et al., 2008; Franks et al., 2006; Piferi & Lawler, 2006). Several studies have documented the positive effects of giving support for the provider. For example, in a study of 289 older adults, Brown et al. (2008) found that widows and widowers who provided support to others during the bereavement process had fewer depressive symptoms one year later. In a daily diary study of 96 undergraduate students, Piferi and Lawler (2006) found that the more support students provided to others, the lower their blood pressure. Structural equation modeling analyses of this dataset demonstrated that the effects of providing support on blood pressure were mediated by self-efficacy and stress. Provided support led to greater self-efficacy and lower stress, which in turn, related to lower blood pressure that same day. Researchers have suggested that providing support to others may work as a stress buffer for those providing the support (Brown et al., 2009; Martire et al., 2006; Pilferi & Lawler, 2006).

Partners' provision of support also influences recipients' health. For example, in a study of 84 cigarette smokers, Thomas et al. (2009) found that participants whose spouses reported a higher level of support in assisting smoking cessation were more likely to report readiness to quit smoking. In a study of 77 surgical patients and their spouses, Schulz, Knoll, Roigas and Gralla (2008) found that spouses' reports of providing support to the patients predicted patients' health-related quality of life six months after surgery. In a study of 94 couples in which one spouse was in cardiac rehabilitation, Franks et al. (2006) found that partners' reports of provided support predicted patients' healthier behaviors and positive psychological well-being six months later. It is likely that when the support provided matches the recipient's needs, it increases self-efficacy for the provider and may decrease the animosity or anger that the recipient may have when the support was not needed or wanted.

Research Documenting the Health Benefits of Seeking Social Support

Only a handful of studies have examined the benefits of seeking support. On some level, it is understood that support is often provided or received as a result of an expressed need for it (Barbee et al., 1993). Seeking support is hypothesized to be health-benefiting because it is a positive coping skill, which demonstrates self-efficacy and self-awareness. Also, individuals are more likely to obtain what they want if they ask for it directly (Barbee et al., 1993; Winkeler et al., 2006; Yankeelov, Barbee, Cunningham, & Druen, 1995). For example, in a study of 357 women at risk for breast cancer, Pieterse et al. (2007) found that seeking social support was related to less anxiety and lower levels of depressive symptoms. Similarly, in a study of 542 older adults, seeking social support in stressful situations was related to lower cortisol levels

even after controlling for age, gender, body mass index, depressive symptoms, and self-rated health (O'Donnell, Badrick, Kumari, & Steptoe, 2008).

The Interplay of Seeking, Providing, and Receiving Support

Social support is more than just the sum of its parts. When what is provided is not recognized or wanted, it is not helpful. There has been a substantial amount of work on the interplay of provided and received support, also known as agreements or concordance of support (Abbey et al., 1995; Franks, Wendorf, Gonzalez, & Ketterer, 2004; Norton & Manne, 2007; Vinokur, Schul, & Caplan, 1987). Research has consistently found that partners' reports of providing support are related to recipients' reports of receiving support, such that, the more support partners report providing, the more support recipients report receiving. In a study of 61 married couples in which the husbands were cardiac rehabilitation patients, Franks et al. (2004), found that wives' provision of support was related to husbands' receipt of support so that the more support wives provided, the more support husbands received. The same relationships were found between husbands' provision of support and wives' receipt of support. Vinokur et al. (1987) investigated the extent to which 486 unemployed Vietnam veterans and their support partners, mostly spouses, agreed on social support exchanges. Although stable personality characteristics and poor mental health influenced perceptions of received support, actual support provision was the best predictor of received support.

In addition to examining the relationship between provided support and received support, some researchers have also evaluated their effects on well-being (Abbey et al., 1995; Berg & Upchurch, 2007; Schulz & Schwarzer, 2004). In a study of fertile and

infertile married couples, Abbey et al. (1995) followed 248 couples (80 fertile couples and 168 infertile) over a two year period measuring support exchanges, disregard, marital quality, and stress. In structural equation analysis, baseline partner provided support was related to baseline recipient received support. Also, one's own received support was positively related to one's own marital satisfaction. Thus, the more support one's spouse provided, the more support one reported receiving, which in turn led to greater levels of marital satisfaction. In addition, baseline levels of received support were predictive of one's own reports of providing support to one's spouse at the two-year follow up. The two-year follow-up led to a similar pattern of support exchanges, such that spousal support provision at that time point was associated with the recipient receiving support, which in turn was associated with greater levels of marital satisfaction for the recipient.

Schulz and Schwarzer (2004) measured support exchanges and coping one and six months after tumor surgery in a sample of 108 cancer patients and their spouses. Although the sample consisted of both male and female patients, effects of social support were only found for female patients. Husbands' level of provided support at baseline predicted their wives' level of received support and active coping six months after surgery. This study demonstrates that there are positive health benefits for women when there are agreements regarding what is provided and received. The lack of findings for male patients suggests that gender may influence the support exchange process, an issue discussed in more detail in a later section.

Most studies that examine provided and received support do not specifically consider the relationships between health, well being, and level of agreement. An

exception is a study by Norton and Manne (2007) which followed 239 couples in which one spouse was being treated for cancer, over a 3 month period. In bivariate analyses, higher levels of agreement regarding supportive and unsupportive behaviors (e.g. criticizing) were related to better marital quality and lower psychological distress for both patients and their spouses. Further, low agreement on unsupportive exchanges was related to worse patient physical pain at the second time point in this study. The multivariate analysis indicated that higher levels of marital quality were predictive of overall high agreement on supportive and unsupportive behaviors. Higher levels of patients' physical impairment predicted low agreement of unsupportive behaviors. This study provides evidence that support agreements affect psychological and physical well-being.

Many researchers have noted that the association between partner's provision of support and patients' receipt of support is usually moderate, leaving much of the dyadic exchange unexplained (Abbey et al., 1995; Berg & Upchurch, 2007; Franks et al., 2004; Lichtenthal, Cruess, Schuchter, & Ming, 2003). In a review of the dyadic literature, Berg and Upchurch discussed the importance of dyadic coping and how other variables such as relationship satisfaction or the stress of the situation may influence the extent to which couples can cope successfully together. In a small study of eighteen dyads in which one was a patient dealing with melanoma, Lichtenthal et al. (2003) discussed why their study found limited associations between partners' provision of support and patients' receipt of support. Specifically, these authors contend that relationship satisfaction was potentially a significant influence. Further, subanalysis of these data suggested that greater agreement was found among patients who engaged

in positive coping skills; this is similar to the previous discussion regarding the origins of seeking support. The authors propose that for patients who directly expressed their need for support, support providers were more likely to provide the support, and patients subsequently received that support.

As noted above, support seeking has received limited attention among social support researchers, although a few attachment researchers have examined this concept (Collins & Feeney, 2000; Feeney, 2004). In a laboratory study of 93 dating couples, Collins and Feeney (2000) found that when support seekers clearly verbalized their support seeking requests, support providers were more likely to provide support, and in turn the support seekers reported receiving more support. This exchange process resulted in better mood among support seekers. An important predictor of support providing and receiving was relationship satisfaction. Individuals who had greater levels of relationship satisfaction with their partner were more likely to provide the support needed, and individuals who had greater levels of relationship satisfaction were more likely to report receiving the support needed. The path analysis for this study examined a sequential relationship between one individual seeking, partner providing, and that individual receiving. However, bivariate correlations were highest between individual seeking and individual receiving. Further analysis demonstrated that the sequence of seeking, providing, and receiving was moderated by attachment style. Therefore, the extent to which seeking support, partner providing support, and receiving support are sequential is questionable. In addition to the indirect link through partner provision, there is likely to be a direct link between what people seek and what they feel have received which reflects personality and general response to others.

There is limited data on support exchanges among African Americans. Much of the support exchange research reviewed in this proposal relied on primarily Caucasian samples (Franks et al., 2004; Norton & Manne, 2007) or did not report the racial makeup of their sample (Collins & Feeney, 2000; Schulz & Schwarzer, 2004). Information about psychosocial factors that might reduce health disparities among patients with heart disease, such as social support exchanges, is needed to fill this significant gap in the literature.

Gender and Social Support Processes

Gender is an important factor in the support exchange process (Barbee, Cunningham, Winstead, & Derlega, 1993; House et al., 1988; Neff & Karney, 2005; Schulz & Schwarzer, 2004). Researchers have suggested that traditional gender roles allow women to activate the support process more easily than men (Barbee et al., 1993; House et al., 1988). For example, in a sample of 69 older married couples, Acitelli and Antonucci (1994) found that marital social support was more strongly related to well-being for wives than for husbands. The authors argue that women focus more on relationships than men, hence spousal support is more important to them. Similarly, in a study of 79 same-sex and opposite-sex friend dyads, Fritz, Nagurney, and Helgeson (2003) found that the women reported more relationship closeness and were more likely to provide emotional support than were men.

Another reason for gender differences in the support exchange process is the motivation for providing support. In a longitudinal study of 194 couples, Feeney and Collins (2003) examined caregiving motivations in order to better understand the quality and functioning of relationships. The authors found that the men in their study were

more likely than women to provide support for obligatory or self-benefiting reasons. They were also less likely to provide support if they felt their partner was independent and strong. Coupling societal roles and motivation together elucidate the gender differences in support exchanges. In a series of studies on support provision by men, Burleson, Holmstrom, and Gilstrap (2005) found that men provide lower quality emotional support, especially to other men. They also found that men prefer female support providers. Burleson et al. (2005) explain this as being due to men's need to maintain masculine identity; although they suggested that with high goal motivation men are more likely to provide the emotional support needed by their partner.

Gender differences in social support are somewhat accepted and expected within the literature, with many studies examining each gender separately and finding differences (Acitelli & Antonucci, Gurung, Taylor, & Seeman, 2003; Schulz & Schwarzer, 2004). However, some research found that gender differences are not clear cut (Neff & Karney, 2005; Luszczynska, Boehmer, Knoll, Schulz, & Schwarzer, 2007). In a daily diary study of 146 couples, Neff and Karney (2005) found that overall in day to day events, husbands and wives did not differ in their ability to provide or receive support from one another. During stressful experiences, however, gender differences emerged. Wives in this study provided more positive support when their husbands reported severe stress; however, this association was not significant for husbands providing support to their wives. During these severe stressors, husbands were more likely to demonstrate negativity toward their wives. In addition, husbands who reported more stress also reported receiving more positive support. The authors' findings

suggest that husbands and wives do not differ in their ability to provide support; however they differ in when they are likely to provide support.

The stability of support may also vary by gender (Luszczynska et al., 2007). In a study of 173 dyads in which one member of the dyad was a surgical cancer patient, Luszczynska et al. (2007) found that the initial high levels of received and provided support did not vary by gender. At six months after surgery, male patients still reported receiving high levels of support; whereas, female patients reported a significant decline in their received support from their partners. In addition, the male and female partners' reports of provided support did not differ at baseline. However, at six months after surgery, male partners reported a significant decline in provided support; whereas, female partners still reported providing high levels of support to the patients.

Women often report having more sources of support and receiving more benefits from support than do men (McLaughlin, Vagenas, Pachana, Begum, & Dobson, 2010; Antonucci, Lansford, & Akiyama, 2001). For example, in a large study of 5,741 older adults, McLaughlin et al. (2010) found that women reported significantly more sources of support than did men. In a study of 128 older adults, Antonucci, Lansford, and Akiyama (2001) found that women who reported having a best friend or confidante were less depressed than those who did not. Having a best friend or confidante did not appear to matter for men in this study.

The study described in this dissertation investigates support exchanges after a cardiac event, and therefore the support resources that exist likely vary by gender. Based on the literature reviewed there are many gaps that exist regarding support exchanges and gender, particularly as studies have generally examined dyadic

exchanges among married partners. One unique aspect of the current study is that dyads were not necessarily married couples. Patients were allowed to select whomever they wanted to participate in the study with them. Thus, there are same-sex and opposite-sex dyads and patients are of both genders. This provides the opportunity to examine gender in each dimension. This should be an important addition to the literature on gender and support exchanges, elucidating if one gender may benefit more than the other.

The Importance of Self-Efficacy on Recovery and its Relationship to Social Support

Adhering to medical recommendations is often difficult (Pronk et al., 2004). This is especially true regarding lifestyle changes that many people have to make after a life-threatening illness or procedure. Self-efficacy helps people maintain their motivation to adhere to the diet and exercise recommendations given to them after a cardiac event (Millen & Bray, 2008; Schwarzer, Luszczynksa, Ziegelmann, Scholz, & Lippke, 2008; Woodgate et al., 2007). In a longitudinal study of 50 cardiac rehabilitation patients, Millen and Bray (2008) found that patients with higher levels of self-efficacy had higher levels of physical activity at the end of the rehabilitation program and were more likely to have continued exercising twelve weeks after cardiac rehabilitation. Similarly, research by Schwarzer et al. (2008) examined self-efficacy and its longitudinal effects on physical exercise in studies with multiple populations including cardiac rehabilitation patients. In one study with 353 cardiac rehabilitation patients, Schwarzer et al. (2008) found that greater self-efficacy in recovery was predictive of higher levels of physical exercise four months after discharge. In another study of 114 cardiac rehabilitation patients,

Schwarzer et al. (2008) found that greater self-efficacy in recovery was predictive of higher levels of physical exercise eight months after patients' myocardial infarction.

The effects of social support on self-efficacy have particular relevance to the management of chronic diseases such as cardiovascular disease because of the necessary healthy lifestyle changes that must be made (Luszczynska & Cieslak, 2009; Woodgate et al., 2007). In a study of 130 cardiac rehabilitation patients, Luszczynska and Cieslak (2009) found that receiving social support from family members for eating a healthy diet predicted patients' self-efficacy and healthier diet six months after cardiac rehabilitation. Similarly, in a study of 64 cardiac rehabilitation patients, Woodgate et al. (2007) found that social support predicted patients' self-efficacy in cardiac rehabilitation activities and physical functioning, thus influencing patients' cardiac rehabilitation maintenance. Therefore, the extent to which support exchanges successfully enhance self-efficacy is an important part of the current study, as it demonstrates that patients are adjusting to their disease management with the help of their support system. The interplay of gender, seeking, providing, and receiving support on self-efficacy should clarify the health-benefitting pathways.

Depression, Cardiac Rehabilitation Patients, and the Influence of Social Support

The impact of depression on quality of life and mortality has been well-documented (Barefoot et al, 2000; Smith & Ruiz, 2002). Thus, the effects of social support on depression and well-being have been explored by various researchers (Brummett, Barefoot, Siegler, & Steffens, 2000; Sacco & Yanover, 2006; Shen, Myers, & McCreary, 2006). For example, Sacco and Yanover (2006) examined the relationships between diabetes symptoms, depressive symptoms, and social support in

a study of 86 diabetes patients. They found that depression mediated the relationship between social support and diabetes symptoms bidirectionally. Low levels of social support negatively affected diabetes symptoms by increasing depressive symptoms. In addition, greater physical symptoms of diabetes increased depressive symptoms which, in turn, lowered levels of received social support.

The relationship between depression and well-being is especially important for patients dealing with various forms of cardiovascular disease (Barth, Schumacher, & Herrmann-Lingen, 2004; Blumenthal et al., 2003; Carney & Freedland, 2003; Casey, Hughes, Waechter, Josephson, & Rosneck, 2008). In a study with 817 patients who had undergone a coronary artery bypass graft, Blumenthal et al. (2003) found that depressed patients were less likely to survive over a five-year follow-up. Research by Casey et al. (2008) found that cardiac rehabilitation patients with higher levels of depressive symptoms were less likely to complete cardiac rehabilitation. Previous research discussed by Molloy et al. (2008) found that the positive relationship between receiving social support and cardiac rehabilitation attendance was no longer significant when depression was taken into account. A study with 194 African American hypertensive patients found that low levels of social support predicted greater levels of depressive symptoms (Dennis, Markey, Johnston, Wal, & Artinian, 2008).

Depression has often been examined as a mediator between support exchanges and other variables (Dennis et al., 2008; Shen, McCreary, Myers, 2004). In a study investigating the psychosocial influences on depression and quality of life among a diverse sample of 138 cardiac rehabilitation patients, Shen et al. (2006) found that depression mediated the relationship between social support and quality of life. Their

final structural equation model demonstrated that higher levels of social support predicted lower levels of depression, and lower levels of depression predicted better quality of life at both baseline and six-week follow-up. Previous research by these authors with 142 cardiac rehabilitation patients had similar findings, with higher levels of social support predicting better positive coping, less depression, and better physical functioning six weeks later (Shen et al., 2004). In the context of cardiac rehabilitation patients and outcomes of support exchanges, depression is an ideal outcome variable to investigate as it has many implications for recovery of cardiac rehabilitation patients. Therefore, insight into the significance on the dyadic support exchanges on depressive symptoms should provide new information on the recovery process of cardiac rehabilitation patients.

Relationship Satisfaction and Social Support

Social support is considered to be a healthy component of a dyadic relationship (Berg & Upchurch, 2007). Many studies examining the social support process have included relationship satisfaction in their analysis (Abbey et al., 1995; Acitelli & Antonucci, 1994; Cutrona & Suhr, 1994; Franks et al., 2006). These researchers have consistently found that the more support that an individual reports receiving, the greater the amount of satisfaction that the support recipient has with that relationship. For example, in longitudinal study of 90 couples over two years, Bodenmann, Pihet, and Kayser (2006) found that greater levels of social support with one's spouse, termed as dyadic coping, was predictive of greater marital quality at each time point in the study. Conversely, less social support was related to worse marital quality. Relationship satisfaction has important implications for the recovery on cardiac rehabilitation patients.

In general, relationship satisfaction demonstrates the stability of a relationship (Karney & Bradbury, 1995). Therefore, the relationship between receiving social support and relationship satisfaction should be included in the analysis to better understand the effects of social support on the relationship satisfaction of cardiac rehabilitation patients.

Blood Pressure and Social Support

There are many physiological benefits to social support including cardiovascular, neuroendocrine, and immune functioning (Uchino et al., 1999). In addition, greater satisfaction with support is predictive of better physiological responses (Heffner, Kiecolt-Glaser, Loving, Glaser, & Malarkey, 2004). A physiological outcome frequently measured among patients with cardiovascular disease is blood pressure. High blood pressure, also known as hypertension, is associated with increased risk of cardiac events among patients with cardiovascular disease (Cohen, 2009; Malone et al., 2009). Researchers have examined the relationship between social support and blood pressure demonstrating the health benefits of social support (Baker, Szalai, Paquette, & Tobe, 2003; Schultz et al., 2008; Uchino, 2006). In a longitudinal study of 103 married hypertension patients, Baker et al. (2003) found that patients who reported a higher level of marital support and satisfaction at baseline had lower diastolic blood pressure at baseline and three years later. Marital support and satisfaction at the three-year follow-up was associated with lower diastolic pressure at that same time point. In a study of social support group attendance of 440 patients with coronary heart disease, Schultz et al. (2008) found that patients who attended more than 78% of their group support sessions had significant reductions in their systolic blood pressure as compared with those who attended fewer sessions over the course of the year. This relationship

remained significant even after the authors controlled for changes in health behaviors, including diet and exercise.

The relationship between social support and lower levels of hypertension is hypothesized to occur through multiple pathways. Social support may reduce stress, thereby reducing blood pressure (Baker et al., 2003; Grant, Hamer, & Steptoe, 2009; Phillips, Gallagher, & Carroll, 2009; Schultz et al., 2008). Social support also may increase adherence to medical recommendations (Bosworth et al., 2008). In a randomized support intervention study of 636 patients with hypertension, half of whom were African Americans, Bosworth et al. (2008) found that patients receiving social support from their study nurse had better adherence regarding their blood pressure medication. Blood pressure maintenance is an important component of recovery and management in cardiovascular disease, thus it is included as an outcome in the current study.

Summary and Hypotheses

In summary, there is a large body of research which demonstrates that social support during times of stress is associated with positive psychological and physical health outcomes (Cohen & Wills, 1985; House et al., 1988). Many of these studies have been conducted with medical patients and have linked social support to improved medical status (Franks et al., 2006; Schulz & Schwarzer, 2004). Many dimensions of social support have been evaluated in past research including seeking support, providing support, and receiving support. These dyadic social support interactions have been demonstrated to be related to overall better psychological and physical well-being,

fewer depressive symptoms, lower blood pressure, greater relationship satisfaction, and better coping efficacy.

The current study aims to examine the effects of these dyadic support exchanges on the health outcomes described above among a sample of male and female African American cardiac rehabilitation patients. Patients in this study were recruited from local cardiac rehabilitation sites as they were beginning cardiac rehabilitation. Thus, this study can identify important social support factors that may influence patients in the early stages of cardiac rehabilitation. Although the current study is cross-sectional, it should provide insight into the psychological and physiological benefits of the social support process as patients begin their recovery.

This study extends past research in several ways. First, it simultaneously considers the role of patients' support seeking, partners' support provision, and patients' received support in the health domain. Some studies have examined two of these dimensions (Abbey et al., 1995, Franks et al., 2004; Vinokur et al., 1987); however, the author is not aware of any studies that simultaneously considered all three. Second, the range of health outcomes included in most past research is limited. In this study, the effects of these three dimensions of support will be examined on psychological well-being, physical well-being, depressive symptoms, blood pressure, relationship satisfaction, and coping efficacy. Third, this study focuses on urban African American cardiac rehabilitation patients, who bear a disproportionately high risk of mortality due to CVD. Thus, these findings have the potential to aid in the development of future social support interventions for African American patients. Fourth, dyadic studies have often focused on married couples (Franks et al., 2004; Norton & Manne, 2007). This study

examines support exchanges between patients and their self-selected support partner, thereby providing insight into patients' perceived supportive relationships.

Objective 1: Gender and Social Support and Health Outcomes

This study has three primary objectives. The first objective is to examine the role of patients' gender as it relates to each social support dimension and health outcome. Previous research has found that gender can influence seeking support, providing support, and receiving support, with women reporting that they seek and provide support more frequently than men do, and men reporting that they receive support more frequently than women do (Barbee et al., 1993; Franks et al., 2004; Luszcynksa et al., 2007; Neff & Karney, 2005). Therefore, it is hypothesized that female patients are more likely to seek support from their support partners than are male patients. It is also expected that male patients' reports of receiving support from their providers are greater than the female patients' reports of receiving support. The third hypothesis of this objective relates to the partner's perspective. Although the focus of this study is primarily on the patient's perspective, it is expected that female support providers are more likely to provide support than male support providers.

Another area of interest related to gender is its effects on each of the health-related outcome variables: psychological well-being, physical well-being, depressive symptoms, blood pressure, relationship satisfaction, and coping efficacy. Although some of the hypotheses are phrased in terms of causal direction, this study is cross-sectional and therefore hypotheses predicting causality cannot be assessed. Recent research by Hunt-Shanks, Blanchard, and Reid (2009) found that female cardiac rehabilitation patients had higher rates of depressive symptoms than male patients.

Therefore, it is expected that female patients have higher levels of depressive symptoms and lower levels of psychological well being than male patients.

According to the AHA (2010), before the age of 45 men have higher levels of hypertension than women. However, between the ages of 45-65 there are no gender differences in hypertension but at older ages women have higher levels of hypertension than men. Therefore, because of the sizeable age range of this sample (19-85), it is unlikely that a gender difference in blood pressure will be found.

The research discussed previously on the relationship between receiving social support and self-efficacy did not identify gender differences in self-efficacy (Luszcynska & Cieslak, 2009; Woodgate et al., 2007). Therefore, no gender differences are expected in coping efficacy. In the current sample, participants are all patients in cardiac rehabilitation and are limited in some capacity. Therefore, no gender differences are expected in physical well-being. Gender differences are also not expected for relationship satisfaction.

Objective 2: Relationship Characteristics and Social Support

The second objective is to examine the association between the patient's and support partner's relationship and each of the support dimensions. Little is known about these pathways because the dyadic social support literature frequently investigates married couples or does not identify the types of relationships between patients and support providers (Berg & Upchurch, 2007; Franks et al., 2004; 2006). One study that did identify and examine multiple supportive relationships among cancer patients found the spousal relationship was the most calming and supportive but did not actually test whether the type of relationship had significant health outcomes (Dakof &Taylor, 1990).

The current study examines the relationship between patients and support partners using three categories: spouses, adult children, and other close relationships. Spouses have often been studied within the social support literature as crucial providers of support (Abbey et al., 1995; Franks et al., 1994) and therefore they are a distinct category. Dakof and Taylor (1990) combined adult children with other close relationships. However, other analysis of the data for the current study specifically identified adult children as being a unique category in these support interactions and relationship satisfaction (Tkatch, Cuff, & Artinian, 2006). Patients with adult children support partners reported receiving less support and reported lower relationship satisfaction than those with a spousal support partner. The other close relationship category combines friends, mothers, sisters, and cousins. Although it is possible that each of these is a unique category on its own, there were not enough participants in each of these subgroups to make separate categories. In addition, patients in this study chose support partners with whom they shared their health-related issues. Therefore, friends and other close relatives grouped in the other close relationship category are a unique group of nonspousal and nonchild social network members. It is likely that these support interactions may represent fewer obligations or responsibilities and may represent a completely different form of social support. Thus, the dimensions of support are likely to vary by relationship type. Findings related to this group of support providers may provide insight into dyadic support exchanges that commonly occur in real world settings but are not often investigated by researchers.

The hypotheses in this objective relate to the support dimensions and not the health outcomes. It is expected that patients with the support provider of an adult child

will report seeking less support and receiving less support than patients with a support partner of a spouse or other close family member. It is expected that spouses and other close relationship partners yield more seeking, providing, and receiving health-related support as the context of the situation may make this process more predictable. Among spouses there is often a belief "in sickness and in health, till death do us part." Therefore, there may be a higher expectation on the global support exchanges between spouses. Also, patients may feel more comfortable disclosing their health-related concerns with close friends and other family members as they may have fewer obligations to the patient and have the ability to be more objective in sharing health concerns. The relationship between parents and their adult children may make it more difficult for patients to seek and receive more health-related support. Parents often do not want to be a burden for their children and may not ask for the support that is needed or may not view the support that is provided as appropriate or helpful. Adult children may be less comfortable than other support providers giving health-related support because they feel awkward telling their parents what to do.

An additional way of examining the relationship between the patients and their support providers is whether or not they are living together. Studies that have emphasized married partners have implicitly assumed that the partners live together as well. The current study allowed for patients, regardless of their relationship with their support partners, to live or not live with their support partners. Sharing day to day health-related interactions such as making a healthy breakfast or going for a walk after lunch may be more natural when one lives with a support partner. In addition, it is likely that living with one's support partner may also provide a patient with greater ability to

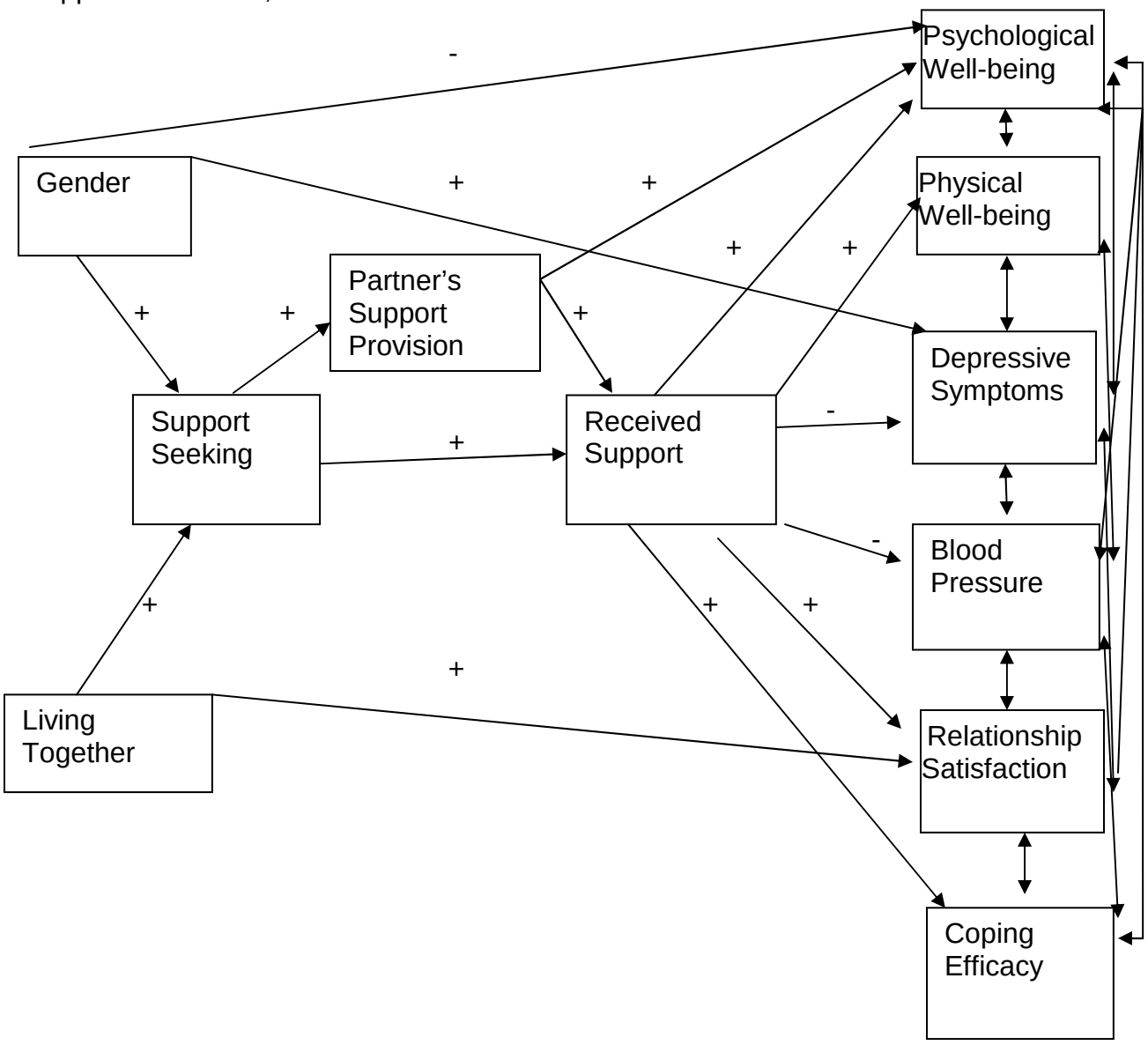
seek health-related support as they share the daily routine with this partner. Specific hypotheses relating to this variable are discussed in the next section.

Objective 3: Path Model Depicting the Associations between Gender, Living Together, Social Support Processes and Health Outcomes

The third objective of this study is to examine the path model depicted in Figure 1. This path model is a theoretical model that elucidates the actual support exchange process and links this process to health outcomes based on the literature reviewed in the previous sections. As can be seen in Figure 1, patients' gender and living together are hypothesized to be associated with patients' support seeking. As mentioned above, women are expected to be more likely than men to seek health-related support (Barbee et al., 1993). It is also expected that patients who live with their support providers are more likely to seek health-related support and have greater relationship satisfaction than those who do not live with their support partners. Patients' support seeking is hypothesized to be positively associated with partners' provided support and patients' receiving support (Collins & Feeney, 2000). It is also expected that partners' support provision will be positively associated with patients' support receipt (Abbey et al., 1995; Franks et al., 2004). Comparable to the findings of Franks et al., (2006) among a similar patient population, a direct positive relationship is expected between partners' support provision and psychological well being. Next, it is expected that higher levels of patients' health-related received support will be associated with greater psychological well-being, greater physical well-being, fewer depressive symptoms, lower blood pressure, greater relationship satisfaction, and greater coping efficacy (Abbey et al., 1995; Barry et al., 2006; Franks et al., 2006; Woodgate et al., 2007). It is also expected

Figure 1

Theoretical Model Depicting the Associations Between Gender, Living Together, Social Support Processes, and Health Outcomes



Note: All constructs represent patient's perspective unless otherwise noted
Gender:
0=Male, 1=Female
Living Together:
0=No, 1=Yes

that the dependent variables of psychological well-being, physical well-being, depressive symptoms, blood pressure, relationship satisfaction, and coping efficacy will all be related to one another. The focus of this dissertation is on the social support variables and their relationships to health outcomes not on the intercorrelations between the health outcomes.

Chapter 2

Method

Participants

The data used in the current study come from a randomized clinical trial designed to test the effectiveness of a social support intervention among African American cardiac rehabilitation patients and their self-selected support partners. Participants were interviewed at four time-points throughout one year: baseline, 6 weeks later, 6 months later, and one year later. Baseline visits were within the first month of cardiac rehabilitation. Participants were then randomized to an educational workshop designed to teach participants how to effectively seek, provide, and receive support within the health behavior domain. Only baseline data were used for the current study. This study was funded by the National Institute of Environmental Sciences (P50 ES012395) and was approved by the Wayne State University Human Investigation Committee.

Participants were recruited from five cardiac rehabilitation sites in the local Detroit area. In order to be eligible for this study, participants had to be African American, 18 years of age or older, and to have a support partner also 18 years or older available to do the study visits with the patient. In addition, participants could not be in Stage 4 of congestive heart failure. Participants were recruited from March of 2004 until November of 2007. Recruitment was done in person at the rehabilitation sessions or over the phone after patients were given recruitment materials by the cardiac rehabilitation staff.

The procedures approved by the Institutional Review Board did not allow study staff to contact patients unless they first gave permission to cardiac rehabilitation staff to do so. These staff did not keep accurate records of how many people were eligible or were approached, thus it was not possible to keep count of all potential participants for this study. There were 341 cardiac rehabilitation patients screened for the study. Thirteen percent (*n* = 46) were ineligible, primarily because no support partner was available. Among the 295 eligible patients, 68% (*n* = 200) were successfully recruited with a partner. One dyad had to be deleted from all analysis because they were deemed ineligible by the WSU Institute Review Board. Thus, 199 patients and 199 support partners (*N* = 398) were included in the baseline sample.

Procedures

After eligibility was determined, participants were called to schedule their baseline interview. Participants had the choice of being interviewed at their rehabilitation site, their home, or at the Center for Urban and African American Health clinic at Harper Professional Building. Both members of the dyad were interviewed at the same time but separately by different interviewers in different interview rooms. Therefore, neither partner could hear or be influenced by their partner's interview. Baseline interviews took approximately 2 hours. This time frame included reviewing and signing the consent form, taking physiological measurements, and completing a variety of psychological interviews including those described below. Patients and support partners were each compensated $15 (total of $30 per dyad) for the interview. Dyads were also provided with valet parking or $5 compensation for travel if they completed their interviews at the clinic.

Measures

Demographics. A demographic questionnaire provided information on age, gender, and marital status. This measure has been used in previous data analysis of this dataset (Artinian et al., 2009). Measures are included in the Appendix.

Relationship between patient and support provider. Patients reported their relationship to the support provider with whom they participated in the study. A variety of relationships were reported including, spouse, adult child, friend, mother, sister, cousin, sister-in-law, niece, and nephew. For analysis purposes, these relationships were coded into three relationship types: spouse, adult child, and other close relationship. Living together was obtained by asking support partners if they lived with the patients. This variable was coded into one variable with two levels: no, not living with support partner and yes, is living with support partner.

Seek, provide and receive social support. Health-related support seeking, support provision and support receipt were measured through a social interaction questionnaire (Franks et al., 2004). The provide and receive dimensions demonstrated good reliability and validity in previous studies that measured similar health-related dyadic exchanges among cardiac rehabilitation patients and their support providers (Franks et al., 2004; Franks et al., 2006; Hong et al., 2005). The seek support dimension was developed specifically for this study. The same basic questions were asked 3 times in order to assess the different steps in the supportive exchange process: once in terms of seeking support (e.g., “request assistance from your partner”), once in terms of providing support (e.g., “assisted your partner”), and once in terms of receiving support (e.g., “assisted you”). Each dimension was assessed with comparable items,

but at different points in the questionnaire. Patients and providers completed all three sets of questions. However, only patients' responses to seeking and receiving and partners' responses to providing are included in these analyses.

These three dimensions of the social support exchange process were each assessed with 4 items designed to assess aspects of emotional, informational and instrumental support (see Appendix for items). Participants were asked to respond in terms of the last month. Responses were made on 5-point scales with options ranging from 0 (*never*) to 4 (*every day*) and were summed to create a composite score ranging from 0 to 16. Higher numbers represent more receipt, provision and seeking. Cronbach's alpha at baseline was .78 for patient's seeking,.80 for support partner's provision and .77 for patient's receipt.

Psychological and physical well-being. Patients' psychologial well-being and physical well-being were assessed by the SF-36 psychological and physical subscales (Ware, Kosinski, & Keller, 1995). The SF-36 is a generic health survey that contains 36 questions, which assess 8 dimensions. The eight scales form two distinct higher-ordered clusters: psychological health and physical health. Participants are asked to respond about how they have been feeling over the last 4 weeks. As can be seen in the Appendix, several different response scales are used. Items scores are summed to composite scores ranging from 0-100, higher numbers indicate better health and well being. Cronbach's alpha for patient the psychological subscale was .90 and for the physical subscale was .88.

Depressive symptoms. Patients' depressive symptoms were measured using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). This

measure is a very valid and reliable measure and has been cited in PsycInfo over 6,000 times. Participants were asked to respond in terms of the last week. This scale has 20 items that are answered using 4-point scales with response options ranging from 0 (*rarely, less than 1 day*) to 3 (*most of the time, 5-7 days*). Responses were summed to create a composite score of 0-60. Higher scores indicate more depressive symptoms. Cronbach's alpha was .88.

Blood pressure. Trained researchers took patients' seated blood pressure using an auscultatory technique and a calibrated aneroid sphygmomanometer. Blood pressure was taken three times and the average of these three times was entered into the database. Systolic blood pressure was used for all analysis.

Medical records. Medical record information was obtained by the research staff at the cardiac rehabilitation site. Information obtained included blood pressure, body mass index, diagnosis for cardiac rehabilitation, and medication information. This information was used for descriptive purposes and for missing blood pressure data.

Relationship satisfaction. Patients' relationship satisfaction was assessed with a modified version of the Quality of Marriage Index (QMI, Norton, 1983). This scale is considered a valid and reliable measure of relationship satisfaction for marital and nonmarital relationships (Heyman, Sayers, & Bellack, 1994; Karney, Bradbury, Finchman, & Sullivan, 1994; Sumer & Knight, 2001). This scale has five items that are summed to create a composite score of global relationship satisfaction. Participants were asked to indicate how much they agreed or disagreed with statements regarding their relationship with their partner. Responses were made on a 4-point scale, with response options ranging from 1 (strongly disagree) to 4 (strongly agree). The total

summed score ranges from 5 to 20, with higher scores indicating more satisfaction (e.g. “Your relationship with your partner makes you happy”). Cronbach’s alpha at baseline was .93.

Patients’ coping efficacy. The Coyne and Smith (1994) Patient Self-Efficacy questionnaire was used to assess coping efficacy in cardiac rehabilitation. This measure was specifically designed to evaluate coping efficacy among cardiac patients and is considered a reliable and valid measure (Berg & Upchurch, 2007; Rohrbaugh et al., 2004). Participants are asked about their certainty in their current ability to cope with 10 issues related to recovery including healthy lifestyle changes and stress on a scale of 1 (*not at all*) to 7 (*very much so*). The item related to smoking was deleted because the baseline rate of smoking was very low (about 10%). The 9 items were then summed to create a composite score of coping efficacy ranging from 7-63 with higher numbers indicating better coping efficacy. Cronbach’s alpha was .84.

Chapter 3

Results

Preliminary Analysis

Data cleaning and scale construction occurred on two levels. The initial data cleaning and scale construction was conducted by the Biostatics Department of the Center for Urban and African American Health. Additional data cleaning and scale construction relevant to this study was conducted by the author using SPSS version 17.0.

Due to extreme missing data, 4 dyads were deleted from the analysis (final *N* = 195 dyads). These dyads were missing more than 30% of relevant variables for this study. For the remaining participants, missing data for all but one variable were minimal and mean substitution was used (Tabachnick & Fidell, 2001).

The blood pressure variable required more in depth substitutions as there was a substantial amount of missing data (*n* = 68). The available alternatives were to use the blood pressure data from a later study time point or the blood pressure data obtained from the rehabilitation site's medical records. The medical record included patients' blood pressure on the first day of cardiac rehabilitation prior to exercise. Due to the differences in apparatus and protocol between the CUAAH study clinic and the cardiac rehabilitation site, it was decided to first utilize the later clinic time point blood pressure. Later clinic time point data were available for 29 participants who were missing the baseline assessment. For the remainder of the participants, rehabilitation site medical record data were used for blood pressure. A variety of statistical analyses were conducted to ensure that the blood pressure data from other time points and sources

were valid. A matched pairs t-test was done for all participants with multiple data time points. No significant differences were found between Time 1 and Time 2 (p = .38), Time 1 and Time 3 (p = .07), or Time 1 and Time 4 (p = .39). In addition, correlations for the outcome study variables were computed with blood pressure data from Time 1 clinic visits, later clinic dates, and medical records and did not appear to change the significance level.

Inclusion of the blood pressure variable required investigation of hypertension medications, as this might influence the results. Cardiac rehabilitation medication record data were available for 120 (62%) patients. Of these 120 patients, 119 of these patients were prescribed at least one hypertension medication. Data for adherence was not available. The mean systolic blood pressure for the sample was 126mm Hg (20.63), higher than the ideal AHA (2010) guidelines of 120, but considered controlled.

All variables were checked for skewness and kurtosis. All variables were within normal range except for blood pressure, which was moderately kurtotic. However, for the size of the current sample, this moderate kurtosis for the blood pressure variable should not affect the results (Tabachnick & Fidell, 2001).

Descriptive Information about Participants

There were 195 dyads in the current study. Patients' ages ranged from 19 – 85 years with an average of 58.71 (SD = 11.68) years old. Support partners' ages ranged from 18 - 90 years and they were on average 50.91 (SD = 14.97). Overall, 67% of patients reported living with their support partner and 57% of patients reported being married (not necessarily to their support partner). Among the whole sample, 45% of patients chose spousal support partners, 24% chose an adult child support partner, and

31% chose another close friend or family member as a support partner. As can be seen in Table 1, male patients were significantly more likely to live with their support partner, be married, and have a spousal support partner. Female patients were significantly more likely to have an adult child support partner.

There were numerous cardiovascular disease diagnoses represented in the sample. Cardiovascular disease diagnosis was available for 154 (79%) participants. The primary diagnosis for the remaining 41 (21%) participants was missing. For the purpose of reporting, CVD diagnoses were coded into six categories: congestive heart failure (n=26, 13%), myocardial infarction (n=43, 22%), stent placement (n=31, 16%), coronary artery bypass surgery (n=32, 16%), angina (n=16, 8%) and other (n=6, 3%). Analysis of variance was run with these six groups on the three support dimensions (i.e. patient seeking, support partner providing, and patient receiving), and on the outcome variables (i.e. psychological health, physical health, depressive symptoms, relationship satisfaction, coping efficacy, and blood pressure). There was an overall between group effect on the patient seeking support variable (F (5, 148) = 2.52, p<.05). Tukey post hoc comparison identified a significant difference between patients that had a myocardial infarction and patients that had a stent placement. Patients who had a myocardial infarction reported seeking significantly more health-related support than patients who had a stent placement (p <.05).

Hypothesis Testing: Objective 1

To investigate gender differences among the study variables, a series of independent sample t-tests were run. As can be seen in Table 2, although it was

Table 1

Gender Differences in Patients' Relationship to Support Partners on Three Dimensions

	Male Patients (n=88)	*Female Patients (n=107)*	X^2
Married	75%	42%	4.08*
Living Together	76%	59%	21.67**
Relationship with Support Partner			
Spousal Support Partner[a]	65%	28%	8.38**
Adult Child Support Partner[a]	9%	37%	21.33**
Other Relationship Support Partner[a]	26%	35%	3.27

Note: * $p<.05$, ** $p<.01$

[a] Patients selected one support partner so these columns sum to 100% for men and women

Table 2

Gender Differences in Support and Outcome Measures

	Male Patients (N = 88)	*Female Patients (N = 107)*	*t*
Age	58.08 (10.32)	59.23 (12.72)	-.69
Patient Seeking Support	8.58 (4.40)	7.48 (3.97)	1.84
Partner Providing Support	10.73 (3.92)	11.26 (3.82)	-.96
Patient Receiving Support	11.17 (3.76)	9.91 (3.89)	2.29*
Psychological Well-being	52.09 (10.87)	49.14 (11.47)	1.83
Physical Well-being	35.52 (9.44)	32.69 (9.76)	2.05*
Depressive Symptoms	17.36 (6.48)	19.95 (7.22)	-2.62**
Relationship Satisfaction	17.75 (2.67)	17.94 (2.48)	-.51
Coping Efficacy	55.37 (6.58)	52.24 (7.87)	2.98**
Blood Pressure	129.08 (21.34)	123.47 (19.77)	1.90

Note: * $p<.05$, ** $p<.01$

hypothesized that female patients would report seeking more support than male patients, no significant difference was found in seeking support between female and male patients. As hypothesized, male patients reported receiving more support than female patients. Female patients also reported higher levels of depressive symptoms as hypothesized, however, psychological well being was only marginally lower for female patients (p<.07). Contrary to hypothesis, male patients also reported higher levels of coping efficacy than female patients. Males had marginally higher levels of blood pressure than female patients (p <.06). It had also been hypothesized that female support partners would report providing more support than male support providers. Although not shown in the table, support was not found for this hypothesis (t (58) = .356, p=.72); means were 10.96 (3.90) for female providers and 11.17 (3.80) for male providers.

Hypothesis Testing: Objective 2

The second objective tested if there were differences in the study variables by relationship type. Both analysis of variance and analysis of covariance with gender as a covariate were conducted to compare the three relationship groups of spousal support partners, adult children support partners, and other close relationship support partners. Significant relationships were the same in both the ANOVA and ANCOVA analyses. As can be seen in the ANCOVA results in Table 3, overall between group differences were found among the variables of age and patients' receiving support. Tukey post hoc comparisons found that patients with a support partner of an adult child were significantly older than patients who had a spousal support partner (p <.05) and patients with a close relationship support partner (p <.01). Patients with a spousal support

Table 3

Results of Analysis of Covariance Examining the Effects of Relationship Type on Support Processes

	Relationship Type			
	Spouse (N= 87)	Adult Child (N=48)	Other Relationship (N=60)	F
Patient's Age	58.70 (10.96)$_b$	63.83 (10.39)$_a$	54.63 (12.23)$_b$	8.95*
Patient's Seeking Support	8.34 (4.08)	7.10 (4.09)	8.13 (4.40)	1.42
Partner's Providing Support	11.18 (3.58)	10.75 (3.50)	11 (4.53)	.20
Patient's Receiving Support	11.13 (3.51)$_a$	9.23 (4.04)$_b$	10.53 (4.06)	3.83*

Note: Means and standard deviations are shown. All means are adjusted for gender. Means on the same line with different subscripts are different at $p<.05$.

*$p<.05$,

partner reported receiving more health-related support than patients with an adult child support partner (p <.05).

Hypothesis Testing: Objective 3

The final goal of this dissertation was to examine the theoretical model depicted in Figure 1 (page 29). First correlations were computed to examine the bivariate relationships among the variables. As can be seen in Table 4, significant bivariate relationships were found between patient gender and many of the study variables. Being a male patient was associated with living with a support partner, receiving more support, better physical well-being, fewer depressive symptoms, better coping efficacy, and higher blood pressure. Marginal associations were found for being a male patient and seeking more support (p <.07) and greater psychological well-being (p <.07). In addition, significant bivariate relationships were found among the health-related support variables. Patients' seeking support was modestly associated with support partners' providing support and strongly related to patients' receiving support. The more health-related support that patients reported seeking, the more health-related support partners reported providing and the more support patients reported receiving. The relationship of agreement between support partner providing support and patient receiving support was also significant. The more support that partners reported giving, the more health-related support patients reported receiving. It should be noted that the relationship between seeking support and receiving support was higher than the well-documented relationship of agreement (Abbey et al., 1995; Franks et al., 2004). Numerous unexpected significant relationships were found between the support variables and the

Table 4

Correlations Between Study Variables

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Patient Gender	--									
2. Living Together	-.18	--								
3. Seeking Support	-.13	.10	--							
4. Providing Support*	.07	.13	.25	--						
5. Receiving Support	-.16	.19	.63	.28	--					
6. Relationship Satisfaction	.04	-.05	.21	.15	.30	--				
7. Physical Well-being	-.15	.09	-.06	-.02	-.14	-.11	--			
8. Psychological Well-being	-.13	.14	-.01	-.09	.17	.28	.01	--		
9. Depressive Symptoms	.20	-.10	.01	.05	-.10	-.25	-.11	-.66	--	
10. Coping Efficacy	-.20	.03	.17	.02	.18	.28	.17	.31	-.39	--
11. Blood Pressure	-.14	.12	-.01	-.12	.16	.21	-.03	.87	-.55	.31

Note: $r \geq .14, p < .05$,

$r \geq .17, p < .01$

*Partner perspective of providing support. All other measures from patient perspective.

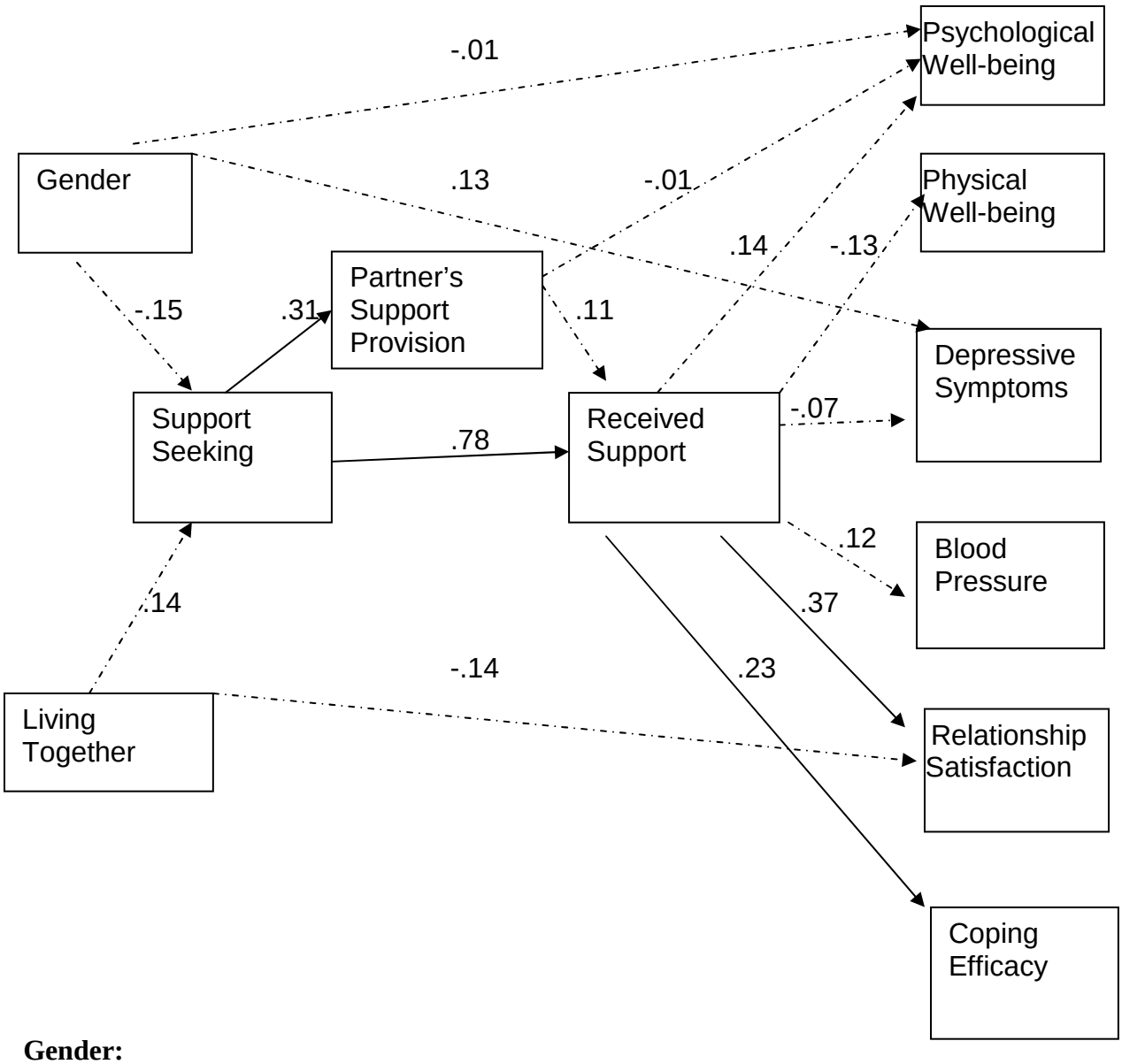
Gender: 0=Male, 1=Female
Living Together: 0=No, 1=Yes

psychological and physical health outcomes. Higher levels of patients' seeking support were associated with greater relationship satisfaction and better coping efficacy. Greater levels of partners' providing support were related to higher levels of patients' relationship satisfaction and not to psychological well-being as had been hypothesized. As expected, received support was related to most of the dependent variables but not always in the direction expected. As hypothesized, patients' received support was associated with greater relationship satisfaction, greater psychological well-being, and better coping efficacy. Contrary to the hypotheses, received support was associated with worse physical health and higher blood pressure. Surprisingly, received support was not associated with depressive symptoms. It should also be noted that the blood pressure variable yielded numerous significant bivariate relationships. Higher blood pressure was associated with greater levels of received support, higher relationship satisfaction, greater psychological well-being, and lower depressive symptoms. These relationships were all in the opposite direction of what would be expected, thus, the extent to which this variable yields valid results was questionable.

Path analysis in Lisrel 8.80 (Joreskog & Sorbom, 2006) was used to examine this model as each of these variables are single indicator variables. As can be seen in Figure 2, the hypothesized model did not fit the data as well as expected, χ^2 (25, N=195) = 54.06 (p < .01), RMSEA = .08, NFI = .92, NNFI = .90, and CFI = .95. Although these are acceptable values, they are not ideal. In addition, most of the pathways were not significant. Therefore additional models were run. Theoretical guidance, modification indices, and the correlation matrix were used to guide the

Figure 2

Initial Model Depicting the Associations Between Gender, Living Together, Social Support Processes, and Health Outcomes



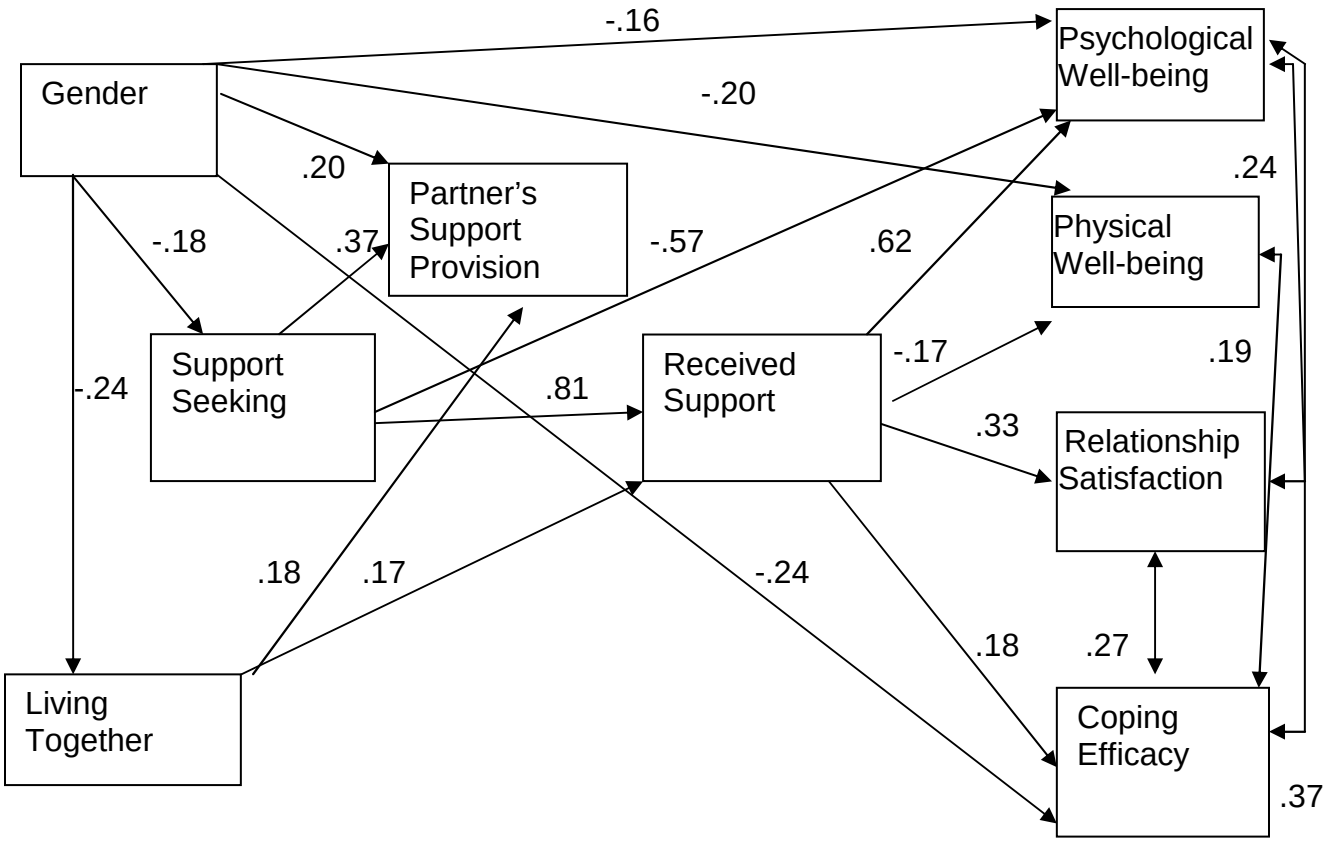
Gender:
0=Male, 1=Female
Living Together:
0=No, 1=Yes
Note: All constructs represent patient's perspective unless otherwise noted
Note: Solid lines = $p < .05$
Dotted lines = not significant

predicted pathways of additional models. The blood pressure variable was omitted as its outcomes were questionable. In addition, the depressive symptoms variable was omitted as it did not relate to received support on the bivariate level. As can be seen in Figure 3, the final model demonstrated good fit χ^2 (16, N=195) = 18.19 (p =.34), RMSEA =.03, NFI =.94, NNFI =.98, and CFI =.99. In addition, many expected relationships were significant. Standardized total effects of this model can be seen in Table 5. These total effects demonstrate that receiving support significantly predicted the four dependent variables of greater psychological well-being, worse physical well-being, greater relationship satisfaction, and better coping efficacy.

The final model demonstrates that male patients were more likely to seek support than female patients. Although not significant on the biviariate level, partners reported providing more support to female patients than male patients. Male patients were more likely to live with their partner and have better coping efficacy. As hypothesized, female patients had lower psychological well-being. Patients who lived with their support partner reported receiving more support and their partner reported providing more support to them as well. Greater levels of seeking support was related to higher levels of partner support provision, higher levels of support receipt, and unexpectedly, lower psychological well-being. In other words, the more support patients sought, the more support the partner reported providing, and the more support the patient reported receiving, and the worse their psychological well-being. Higher levels of patients' support receipt was associated with greater psychological well-being, more relationship satisfaction, and higher levels of coping efficacy. In addition, higher levels of received support were also associated with lower levels of physical well-being. Some of the

Figure 3

Final Model Depicting the Associations Between Gender, Living Together, Social Support Processes, and Health Outcomes



Gender:
0=Male, 1=Female
Living Together:
0=No, 1=Yes
Note: All constructs represent patient's perspective unless otherwise noted

Table 5

Total Standardized Direct and Indirect Effects of Seeking and Receiving Social Support Variables on Psychological Well-being, Physical Well-being, Relationship Satisfaction, and Coping Efficacy

Construct	*Total Effect*			
	Psychological Well-being	Physical Well-being	Relationship Satisfaction	Coping Efficacy
Seeking Support	-.07	-.14*	.27*	.14*
Receiving Support	.62*	-.17*	.33*	.18*

Note. $*p < .05$.

dependent variables were related to each other. Higher levels of psychological well-being were related to greater relationship satisfaction and better coping efficacy. Greater coping efficacy was related to better physical well-being and higher relationship satisfaction. As can be seen in Table 6, the variance accounted for in received support was 68%. The variance accounted for in the dependent variables of the model was also noteworthy particularly for psychological well-being (12%), relationship satisfaction (12%) and coping efficacy (9%).

The significant pathway between patient seeking support and lower psychological well-being was unexpected as it had not been hypothesized, it had not been significant at the bivariate level and was in the opposite direction expected (higher levels of seeking was associated with lower psychological well-being). This relationship between seeking support and psychological well-being had not been hypothesized as it had been expected that receiving support would be a significant predictor of psychological well-being. In addition, seeking support has most often been examined as a predictor of positive coping and not general psychological well-being. The unpredicted pathway found indicated the occurrence of a suppressor variable. Thus, further analysis was run to identify the suppressor variable by eliminating one pathway at a time to the dependent variable. In this process, when the suppressor variable pathway to the criterion is eliminated the predictor variable pathway of seeking support to psychological well-being should drop to its expected non-significance level (Tabachnick & Fidell, 2001). This elimination process identified receiving support on psychological well-being as the suppressor variable for seeking support on psychological well-being.

Table 6

Squared Multiple Correlations for Structural Equations

Variable	*Percent of Variance Explained*
Seeking Support	3%
Partner Providing Support	14%
Receiving Support	68%
Psychological Well-being	12%
Physical Well-being	7%
Relationship Satisfaction	12%
Coping Efficacy	9%

Chapter 4

Discussion

The primary goal of this study was to examine the relationships between health-related support exchanges and health outcomes in a sample of African American cardiac rehabilitation patients. An additional goal of this study was to investigate the influence of patients' gender and patients' relationship to their support partners on the support exchange process and the resulting health outcomes. This study found ample evidence that the support exchange process is generally predictive of better health outcomes and that patients' gender and relationship to their support partner are important predictors of the support process. First results will be summarized and then implications will be discussed.

Three sets of objectives had been set forth for this study. The first objective was related to gender and its association with the health-related support variables and the health outcomes. It had been hypothesized that female patients would report seeking more support, male patients would report receiving more support, and female support providers would report providing more support. Only one of these predicted relationships were found. Contrary to the hypotheses, male patients reported seeking more support than female patients. However, evidence for the second hypothesis, of male patients receiving more support was found. There were no gender differences in partners' provision of support. In addition, it had been hypothesized that female patients would report higher levels of depressive symptoms than male patients and lower levels of psychological well-being. Support was found for this as well. Last,

although not hypothesized, male patients reported higher levels of coping efficacy than female patients.

The second set of objectives was related to the relationship between the patient and the support provider. Specifically, the study sought to examine if the type of relationship patients had with their support partner influenced the health-related support exchange process. It was hypothesized that patients whose support partner was an adult child would report seeking and receiving less health-related support than patients whose support partner was a spouse or another close relationship. Partial evidence for these associations was found. There were no differences in seeking support, but patients with a support partner of an adult child reported receiving less support than patients with a spousal support partner.

The last objective of this dissertation was to examine the theoretical path model depicted in Figure 1 which related gender, living with a support partner, and the support process, with a variety of health outcomes. This model found few associations between the variables and did not fit particularly well. Thus, multiple modifications were made and the final model is depicted in Figure 3. It was hypothesized that gender and living together would be associated with more support seeking. Partial evidence was found for these hypotheses. Being a male patient was associated with living with a support partner. On the bivariate level being a male patient was marginally related to seeking support, this relationship was significant in the path model. It was hypothesized that more seeking support would be associated with higher levels of partner support provision and patient support receipt. These associations were found. Although the correlation between partner provision of support and patient receipt of support was

significant, there was no direct path in the path model. It was expected that more partner provision of support would be related to higher levels of psychological well-being, this relationship was not significant. It was hypothesized that more received support would be related to better psychological well-being, better physical well-being, fewer depressive symptoms, lower blood pressure, greater relationship satisfaction, and better coping efficacy. Many of these expected relationships were found. Higher levels of received support were positively associated with psychological well-being, relationship satisfaction, and coping efficacy. Thus, the more received support patients' reported the better psychological well-being, relationship satisfaction, and coping efficacy they reported as well. Unexpectedly, received support was found to be negatively associated with physical well-being, meaning more received support was related to worse physical well-being. Also, unpredictably, seeking support was negatively associated with psychological well-being (this finding is discussed later in this chapter). The blood pressure variable demonstrated questionable results and was deleted from the final path analysis model. In addition, because depressive symptoms were not associated with any of the support variables, this variable was also not included in the final model. Last, some of the dependent variables were associated with one another. Greater psychological well-being was related to greater relationship satisfaction, and better coping efficacy. Higher coping efficacy was related to better psychological well-being and greater relationship satisfaction.

The first objective of this study dealt with gender differences among the health-related support and health outcome variables. Contrary to the hypothesis the opposite relationship was found for seeking support. In this study male patients were more likely

to seek support than female patients. However, male patients also had fewer depressive symptoms, better psychological functioning and greater coping efficacy in this sample. Seeking support is considered to be a positive coping mechanism (Barbee et al., 1993). Pieterse et al. (2007) had found that seeking support was related to less anxiety and lower depressive symptoms. Therefore, the gender differences that were found are consistent as male patients did report better psychological well-being and fewer depressive symptoms. The literature on the benefits of seeking support has not dealt with patients who have cardiovascular disease (Barbee et al., 1993). It is very likely in an acute crisis such as recovering from a cardiac event; male patients may seek more support than typically thought. Female patients may struggle more with juggling multiple roles and may not seek the support that they need. In addition, although heart disease is the leading cause of death for all Americans, there is a common misperception that heart disease primarily affects men. Therefore, male patients may have an easier time seeking social support to deal with their cardiovascular disease.

The other gender differences in the health-related support domain were more consistent within the literature. Although it had been hypothesized that female support providers would report providing more support, no gender differences in support partner providing health-related support was found. Neff and Karney (2005) found men and women do not always differ in the amount of support they provide. Neff and Karney discussed how on a stressful day, gender differences may emerge and men may be less likely to provide support. However, the current study examined provision of support on a more global level (i.e.. how often in the past four weeks). Therefore, on a more

global level it is likely that there were fewer gender differences in support provision. As hypothesized, male patients reported receiving more support than female patients. This finding is also consistent within the literature as other studies have also found that men report receiving more support than women especially over long periods of time (Gurung et al., 2003; Luszczynska et al., 2007).

Gender differences were also found in depressive symptoms and psychological well-being. Female patients had higher levels of depressive symptoms and worse psychological well-being than male patients. These findings are also consistent within the literature, as generally speaking women have higher rates of depression and report worse psychological well-being than men (Helgeson, 2007). In addition, this study found that men had better coping efficacy. The coping efficacy measure was developed specifically for male cardiac rehabilitation patients (Coyne & Smith, 1994) so this may reflect an implicit gender bias. The questions may reflect a more independent way of thinking often associated with societal male gender role (Helgeson, 2007). It is also possible that with the male patients reporting higher levels of receiving support and better psychological well-being, the end result was better coping efficacy.

The second objective of this study specifically dealt with the type of relationship patients had with their support partners. This study found that patients with a spousal support partner reported receiving more health-related support than those with a support partner of an adult child. Previous dyadic support literature had specifically focused on married couples (Abbey et al., 1995; Norton & Manne, 2007) even within the context of cardiac rehabilitation (Franks et al., 2004; Franks et al., 2006). Dakof and Taylor (1990) found that patients often find their spouse more comforting than other

support resources. Therefore, the higher levels of support that patients with a spousal support partner reported receiving versus the support that patients with a support partner of an adult child reported receiving is not surprising. As mentioned earlier, parents often do not want to burden their children with health issues. In addition, it is possible that support provided by the adult child was not interpreted as support. This is probable as there were no differences in the amount of support that partners in the three relationship groups reported providing. Parents may not want to be told by their children to take care of their health and may perceive these attempts as controlling or undermining.

The other close relationship category did not yield any significant relationships as compared to the other two relationship groups among the support variables. This was surprising as patients chose whom they wanted their support partner to be. However, it is likely that by grouping friends and other close family members in the same category, valuable information was lost. Nevertheless, the size of the groups necessitated these categories.

The significant relationship between patients living with support partners and the support and health outcome variables also provides insight into the day-to-day dyadic interactions between patients and support partners. Support partners living with patients reported providing more support and patients living with support partners reported receiving more support. Living with one's support partner may provide an easier and more convenient setting for this health-related support to occur. Sharing healthy meals, discussing stressful situations, keeping tabs on day-to-day health-related issues may occur more frequently when people live together. Living with a support

partner with whom one shares health-related issues is likely to provide an individual with overall better psychological well-being.

It is also important to note that the overlap between spousal relationships and living together is very high. Therefore, although not the same construct, the similarities of sharing day to day health-related issues with someone close may be a result of a combination of being married and living together.

Most of the male patients were married to their support partners and most of the female patients were not. In addition, many of the female patients reported being unmarried and male patients were more likely to live with their support partners than female patients. Therefore, some of the findings in this sample may be reflecting a gender bias. It is possible that some of the spousal relationship and living together findings really reflect the benefits that the male patients had over the female patients. There may have been interaction effects involving gender for which ANCOVA could not control. Sample sizes get very small once gender and relationship type are taken into account, so future research with larger samples is needed to disentangle gender effects from relationship to support provider effects.

The final objective of this study was to examine the theoretical path model. Due to lack of statistical fit and findings additional models were run. The final model presented in Figure 3 represents a comprehensible picture as to what may be occurring in this sample of cardiac rehabilitation patients. Gender and living with a support partner influence patients' seeking health-related support. Patient seeking health-related support was associated with both partner provision of support and patient receiving support. Receiving more health-related support was associated with better

psychological well-being, greater relationship satisfaction, and better coping efficacy. This model provides a good perspective of the psychosocial mechanisms that may predict better health outcomes among African American cardiac rehabilitation patients.

Unexpectedly, received support was related to worse physical well-being. Among the other dependent variables received support overall predicted better health outcomes and so this relationship was surprising. However, it is unlikely that high levels of received support resulted in worse physical well-being, rather it is probable that patients who had worse physical well-being received higher levels of the support that they needed.

The expected relationship between providing and receiving support (e.g. agreement) was found at the bivariate level but, not in the path model. However, this study offered a new perspective on dyadic support exchanges as it included seeking support. The addition of patients' seeking support was a unique component that provided a new examination of the interplay of these three important dimensions. Patients' seeking support was related to partner providing support and patient receiving support in the path analysis models. In addition 68% of the variance of received support was accounted for within the final path analysis model, with seeking support being the strongest predictor. Within the dyadic social support literature several authors have noted that the relationship between provided and received support (e.g. agreement) is not very strong (Abbey et al., 1995; Franks et al., 2004). Even within this sample, the bivariate relationships between patients' seeking support and partners' providing support and patients' seeking support and patients' receiving support were higher than the relationship of agreement between support partner provision and patient

receipt. This may be partially explained by the shared method variance between seek and receive because they were both self-reports.

Theoretically one could ponder the question: if partners try to provide support but patients do not receive it and there are positive health outcomes or if partners do not provide support but patients receive it and there are positive health outcomes, what is going on? The importance of seeking support may very well be an underused, yet key dimension of support. Seeking support was consistently associated with support partner provision of support, patient receiving support and numerous health outcomes. Some researchers have hypothesized that the most beneficial support is invisible; partners provide support that recipients do not recognize so they maintain their autonomy (Bolger, Zuckerman, & Kessler, 2000; Gleason, Iida, Bolger, & Shrout, 2003). Perhaps what has been missing from these studies is seeking support. A patient seeking and the partner providing or a patient seeking and the patient then receiving may represent what social support is: a dyadic exchange that provides an individual with the feeling that someone is there for them in their times of need.

A central variable that did not provide any meaningful results is the blood pressure variable. This was disappointing as this is a sample of cardiac rehabilitation patients. Better psychological well-being was related to higher blood pressure. It is doubtful that the better psychological well-being is causing higher blood pressure; rather it is likely that this higher blood pressure is a characteristic of this sample. This sample consisted of cardiac rehabilitation patients, most who were on some form of hypertension medication. Therefore, it is unclear as to what the support exchange process may be contributing to patients' blood pressure. Also, the large amount of

missing data for the blood pressure variable may have reduced the reliability of this measure.

A last finding that required some additional analyses is the surprising relationship between greater levels of seeking support and lower levels of psychological well-being. This was not a hypothesized relationship, it was not in the direction expected, and this was not a significant finding on the bivariate level. This pathway was significant and subsequent analysis determined that it was a suppressor effect which occurred when a direct path between received support and psychological well-being was included in the model. A typical suppressor variable is not considered to be related to the dependent variable. However, on the bivariate level, receiving support was modestly positively associated with psychological well-being. Within the path model this relationship was not as clear. When the model did not include seeking support predicting psychological well-being, the expected relationship between receiving support to greater psychological well-being was not significant and the fit was not as good as when it was in the model. When the pathway of received support to psychological well-being was not in the model, seeking support did not significantly predict psychological well-being and the fit was not as good as it was when both pathways were in the model. Further, these two pathways were in opposite directions, seeking support to lower psychological well-being and receiving support to better psychological well-being.

As discussed earlier, seeking support and receiving support were both highly correlated and are both the patients' perspective of the support process. Typically, a suppressor variable should enhance the relationship between the independent variable of seeking support to the dependent variable of psychological well-being as it should

account for the noise in the relationship between the predictor and criterion (Tabachnick & Fidell, 2001). It is possible that in this context, patients who had lower psychological well-being sought more support as a result of this circumstance. Received support may be accounting for a certain level of expectation that patients may have that if they seek support they will, of course, receive it. Or when reporting that they received support it was because they had sought the support. It could also mean that when patients received support it was because they believed to have sought support as a result of being in a lower psychological state of well-being. The extent to which these variables can be teased apart is not completely clear and future research should include multiple methods of measuring seeking support and received support as to better understand the way these two variables work together.

Limitations

First and foremost, the data presented in this study were cross-sectional and therefore neither temporal ordering nor causality can be determined. Patients' lives were likely in a state of flux due to the cardiac event and this may explain some of the unexpected direction of relationships. In addition, many of the findings in this study had not been hypothesized and were found post hoc. Therefore, these findings are tentative and need to be replicated. The cross-sectional nature of this data may explain some of the unexpected relationships including the post hoc results. The current study was also limited in the measures that were used in the larger study. It is possible that different measures and different methodology would have demonstrated different perspectives on support interactions and health outcomes. Specifically, all measures were completed with interviewers and it is possible that patients felt a certain pressure to

answer in a way that would make their partner appear in a positive way. Also, because patients were interviewed separately from the support partners no objective dyadic interactions were measured or observed. In addition, patients were somewhat restricted in whom they could choose as their support partner as the support partner needed to be someone who could participate in the study with them. It is possible that patients in this study had other close social network members with whom they shared much of their health-related issues and from whom they received much health-related support, but those individuals could not participate in this study due to other constraints such as time or transportation. Therefore, this study is also limited as it only allowed for one support partner. In addition, because patients chose their support partners the three relationship type groups were quite uneven and this may have influenced the results, especially for the spousal relationship as it consisted mostly of male patients. Along those same lines, grouping friends and all other close family relationships together may have not given an accurate perspective on these dyadic interactions. Another important limitation was the blood pressure data. The lack of findings of the blood pressure data may have been due to their inconsistent collection.

Implications for Future Research

This study offers new ways to look at the more global support exchange process. The inclusion of gender, relationship characteristics, multiple dimensions of support from a dyadic perspective, and numerous health outcomes is a detailed beginning of understanding the bigger picture. This study may provide a foundation to understand the psychosocial contributors that may help to reduce some of the health disparities within the context of cardiac rehabilitation. Understanding the influence of gender and

support provider relationship characteristics on the influence of support exchanges may provide clinicians and cardiac rehabilitation staff a framework to determine which patients may need additional support boosters. In addition, recognizing that the dyadic social support process is complex may provide researchers and clinicians with new directions in which to apply social support interventions or psychosocial therapies for patients with cardiovascular disease.

There are many real world implications for this study. First, this study provides a new understanding of the psychosocial mechanisms that may help recovery after a cardiac event. Seeking support was a key predictor of received support, which in turn was a significant predictor in the health outcomes. A big adjustment that patients have to deal with after a major medical event is their loss of independence and the need to change a lifestyle that they may have lived their whole adult lives. Therefore, patients may need assistance in seeking support as they may still think of themselves as independent with the ability to do everything on their own. In addition, patients often might not realize how difficult it is to change health habits that are necessary in their recovery process. Seeking support may be a skill that many patients may need to learn. Clinicians and cardiac rehabilitation staff may need to help educate patients in how to seek support as they struggle with asking for the help they need.

Social network resources are an important part of patients' recovery. Many researchers have highlighted the importance of support from others after a cardiac event (Coyne & Smith, 1994; Franks et al., 2006; Molloy et al., 2008), but previous research has not investigated many of the constructs examined in this study among African American cardiac rehabilitation patients. In order to reduce the health

disparities that exist among patients with cardiovascular disease, an understanding of the factors that promote health and well-being need to be identified. Previous research has found close social support networks of African Americans are smaller than those of Caucasians (Ajrouch, Antonucci, & Janevic, 2001; Barnes, de Leon, Bienias, & Evans, 2004). However, these networks also appear to be highly supportive (Ajrouch et al., 2001; Fung, Carstensen, & Lang, 2001) with African Americans reporting more contact with their support resources and more family members as a source of support than Caucasians. Clinical staff need to capitalize on the close social support providers that African American patients may have in order to help reduce the health disparities that exist among African American patients with cardiovascular disease.

A study such as this one provides new questions to ponder. Future research should examine dyadic exchanges longitudinally and evaluate the long-term benefits of relationship status or living together for cardiac rehabilitation patients. For example, a future study could examine if patients with spousal support partners continue to receive more support after the initial phases of a cardiac event and cardiac rehabilitation has passed. This would provide researchers with a greater understanding of supportive relationships within this context. In addition, including in a study the length of time that patients and partners live together and monitoring changes in that status over time could also provide researchers with answers as to whether it is the actual living with a partner that provides more support or if there are other characteristics of the relationship that provides these benefits. This would also allow researchers to examine if over time patients learn to seek support as they begin to realize cardiovascular disease requires many changes or if over time support providers begin to withdraw support. In addition,

much further examination into the influence of gender and relationship characteristics should be investigated. Future research should attempt to tease apart the contributions of gender, relationship type, and living together with a support partner. Larger samples with more specific relationship type groups such as friends, siblings and parents, and a more even distribution of gender within these groups could also provide clarity on some of the findings of this dissertation.

Another important direction for future research is a more wide-ranging measure of social support interactions. Daily diary studies or objective observations such as videotaping should be used to better examine this important dyadic exchange. For example, a study could have patients and partners record their daily support interactions of seeking, providing, and receiving support. This would allow researchers to examine support exchanges more specifically rather than global self-report measures that rely on memory. Such a study could be done by asking patients if they sought support and received support from their partners and asking partners if they provided support on that very day. Matching up those responses to see if there is agreement on these dimensions of support could demonstrate a more sequential form of the social support process or at the very least confirm the findings of this study that seeking support is crucial to receiving support. Another direction is to ask patients to record a specific example of seeking or receiving support that day and for partners to do the same with providing support. Researchers could then match up if similar examples are given between patients and partners. Such a study could help explain miscommunication between partners and provide a new perspective on seeking, providing, and receiving support. In addition, a study could specifically focus on support

exchanges recorded on cardiac rehabilitation days (often three days a week) versus non-cardiac rehabilitation days to see if patients seek or receive more support on rehabilitation days and if partners provision is in concordance with patients' needs.

An additional way of measuring support more objectively is through videotaping interactions. Patients and partners could be interviewed together in a laboratory setting. Researchers could prompt the dyad about a challenge that many patients in cardiac rehabilitation face, such as eating healthier or exercising. The interaction could then be videotaped and coded to explore patients seeking, partners providing, and patients receiving support. Research done in this context can provide researchers with an understanding of what may be lacking in support exchanges in order to develop effective interactions aimed to educate patients and partners on a healthy supportive exchange.

Future research should also examine the interplay of gender, living together, the support dimensions, and health outcomes in other populations. Although cardiovascular disease is the leading cause of death among all Americans, the connections between these variables should be examined in other disease populations as well as healthy individuals. This may explicate more of the psychosocial mechanisms that not only contribute to reducing disease but also promote healthy living.

Clinical Implications

Clinicians and cardiac rehabilitation staff must understand the importance of social support and the support processes in the recovery from a cardiac event, the successful implementation of cardiac rehabilitation and a healthy new lifestyle.

Assessment of sufficient and competent social support providers that patients have can provide useful knowledge to clinicians and rehabilitation staff in the treatment of patients dealing with cardiovascular disease. Patients who are lacking social support resources may need additional attention and assistance in the recovery process. Additional consideration may be imperative for patients who do not live with a support provider, thus clinical staff need to be aware of the support resources available. Clinicians and staff need to try and actively engage family and friends in the cardiac rehabilitation process. In addition, cardiac rehabilitation should include workshops that teach patients about positive and healthy ways in which to seek support. This can be a good addition to the workshops that cardiac rehabilitation already provides. These workshops should include support providers so the dyadic social support processes can be improved. Utilizing support providers in the rehabilitation process can give patients greater psychological well-being and better coping efficacy that can help improve overall health and well-being. Although these clinical implications are important, one caveat is that pushing support may backfire as it can make social support feel coercive and produce negative effects. Therefore, clinicians should also focus on what patients need or want and evaluate the dyad's style of interaction.

This study provided a new examination of the support exchange process and health outcomes among a sample of African American cardiac rehabilitation patients. The findings of this study provide a new pathway to explore in the realm of social support. Seeking support may begin to uncover and explain more about this dyadic exchange and the process that results in better health outcomes. In addition, the interplay of gender and relationship characteristics also provides new insight into who

benefits from this process. Understanding this process may provide clinicians, cardiac rehabilitation staff, and families with tools needed in providing the very best outcomes for patients with cardiovascular disease. Importantly, social support is more than the sum of its parts; it is a complex dyadic interaction with many directions that can have many positive health benefits.

Appendix A

Measures

Demographics (Relationship to Patient and Living Together)

Patient Information:

Last Name:_____ First Name: _____ MI:_____

What is your age?_____ Date of Birth:_____/_____/_____

Race: □ African-American □ Asian □ Caucasian □ Hispanic □ Native American □ Other

Gender: □ Male □ Female

Primary Support Partner Information

Last Name:_____ First Name: _____ MI:_____

Relationship to Patient_____

Do you live with the patient? Yes_____ No_____

What is your age?_____ Date of Birth:_____/_____/_____

Race: □ African-American □ Asian □ Caucasian □ Hispanic □ Native American □ Other

Gender: □ Male □ Female

Social Interaction Questionnaire (Franks et al., 2004)

Seek Support

Please indicate how often you have done the following **in the past month**

Never	Once or twice a month	Once a week	Several times a week	Every day
0	1	2	3	4

1. Share your concerns about protecting your health with your partner.
2. Request assistance from your partner in taking care of your health.
3. Ask your partner if he or she agreed with your decisions about caring for your health.
4. Ask your partner for encouragement to make choices favorable to healthy living

Provide Support

Please indicate how often you have done the following for you partner **in the past month**

1. Listened to concerns about protecting his or her health.
2. Assisted your partner in caring for his/her health.
3. Agreed with decisions about caring for health.
4. Encouraged choices favorable to healthy living.

Receive Support

Please indicate how often your partner has done the following **in the past month.**

1. Listened to concerns about protecting your health.
2. Assisted you in caring for your health.
3. Agreed with decisions about caring for your health.
4. Encouraged choices favorable to healthy living.

SF-36, Ware, Kosinski, & Keller, 1995

Wayne State University | Center for Urban and African American Health CUAAH

Patient **PSM**

Individual Level Perceived Physical Health and Psychological Distress

SF- 36

STUDY ID 3 3 3 3 1 **Visit No** **Interviewer**

Visit Date – –

1. In general, would you say your health is: (Read responses)

○ 1. Excellent ○ 2. Very Good ○ 3. Good ○ 4. Fair ○ 5. Poor

2. Compared to one year ago, how would you rate your health in general now? (Read responses)

○ 1. Much Better Now ○ 2. Somewhat Better ○ 3. About The Same ○ 4. Somewhat Worse ○ 5. Much Worse

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so how much? (Hand them card) Would you say it limits you **a lot, it limits you a little, or you are not limited at all**?

Activities	Yes, Limited A Lot	Yes, Limited A Little	No, Not Limited At All
3. **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports	○ 1	○ 2	○ 3
4. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	○ 1	○ 2	○ 3
5. Lifting or carrying groceries	○ 1	○ 2	○ 3
6. Climbing several flights of stairs	○ 1	○ 2	○ 3
7. Climbing one flight of stairs	○ 1	○ 2	○ 3
8. Bending, kneeling, or stooping	○ 1	○ 2	○ 3
9. Walking more than a mile	○ 1	○ 2	○ 3
10. Walking several blocks	○ 1	○ 2	○ 3
11. Walking one block	○ 1	○ 2	○ 3
12. Bathing or dressing yourself	○ 1	○ 2	○ 3

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	Yes	**No**
13. Cut down on the amount of time you spent on work or other activities	○ 1	○ 0
14. Accomplished less than you would like	○ 1	○ 0
15. Were limited in the kind of work or other activities	○ 1	○ 0
16. Had difficulty performing the work or other activities (for example, it took extra effort)	○ 1	○ 0

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	Yes	**No**
17. Cut down the amount of time you spent on work or other activities	○ 1	○ 0
18. Accomplished less than you would like	○ 1	○ 0
19. Didn't do work or other activities as carefully as usual	○ 1	○ 0

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(Continued on next page)

Wayne State University | Center for Urban and African American Health CUAAH

Patient **PSM**

Individual Level Perceived Physical Health and Psychological Distress

SF- 36

3 3 3 3 | 1 **STUDY ID** **Visit No** **Interviewer** **Visit Date** __ – __ – ____

20. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups? **Would you say not at all, slightly, moderately, quite a bit, or extremely**?

○ 1 Not At All	○ 2 Slightly	○ 3 Moderately	○ 4 Quite A Bit	○ 5 Extremely

21. How much bodily pain have you had during the past 4 weeks? **Would you say none, very mild, mild, moderate, severe, or very severe**?

○ 1 None	○ 2 Very Mild	○ 3 Mild	○ 4 Moderate	○ 5 Severe	○ 6 Very Severe

22. During the past 4 weeks, how much did pain interfere with your normal work including both work outside the home and housework)? **Would you say not at all, a little bit, moderately, quite a bit, or extremely**?

○ 1 Not At All	○ 2 A Little Bit	○ 3 Moderately	○ 4 Quite A Bit	○ 5 Extremely

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question please give the one answer that comes closest to the way you have been feeling. Look at this card and tell me if it is **all of the time, most of the time, a good bit of the time, some of the time, a little of the time, or none of the time**.

How Much of the time during the ***past 4 weeks...***	**All of the Time**	**Most of the Time**	**A Good Bit of the Time**	**Some of the Time**	**A Little of the Time**	**None Of The Time**
23. Did you feel full of pep?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
24. Have you been a very nervous person?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
25. Have you felt so down in the dumps that nothing could cheer you up?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
26. Have you felt calm and peaceful?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
27. Did you have a lot of energy?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
28. Have you felt downhearted and blue?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
29. Did you feel worn out?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
30. Have you been a happy person?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6
31. Did you feel tired?	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6

32. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)? **would you say all of the time, most of the time, some of the time, a little of the time, or none of the time?**

All of the Time	**Most of the Time**	**Some of the Time**	**A Little of the Time**	**None Of The Time**
○ 1	○ 2	○ 3	○ 4	○ 5

How TRUE or FALSE is each of the following statements for you? **Look at this card and tell be if it is definitely true, mostly true, mostly false, definitely false or you don't know.**

	Definitely True	Mostly True	Mostly False	Definitely False	Don't Know
33. I seem to get sick a little easier than other people	○ 1	○ 2	○ 3	○ 4	○ 5
34. I am as healthy as anyone I know	○ 1	○ 2	○ 3	○ 4	○ 5
35. I expect my health to get worse	○ 1	○ 2	○ 3	○ 4	○ 5
36. My health is excellent	○ 1	○ 2	○ 3	○ 4	○ 5

CES-D (Radloff, 1977)

WAYNE STATE UNIVERSITY | Center for Urban and African American Health CUAAH

Patient **PSM**

Center for Epidemiologic Studies

3 3 3 3 | 1 **STUDY ID** **Visit No** **Interviewer** **Visit Date** – –

CES-D Questionnaire

I will read you a list of the ways you might have felt or behaved. Please look at this card and indicate how often you have felt this way during **the past week**: **rarely or none of the time (less than 1 day), some of the time (1-2days), occasionaly (3-4 days) or most or all of the time (5-7 days).**

During the past week:	Rarely, Less than 1 day	Some of the time1- 2 days	Occaasionally 3-4 days	Most of the time 5-7 days
1. I was bothered by things that usually don't bother me	○ 0	○ 1	○ 2	○ 3
2. I did not like eating, my appetite was poor.	○ 0	○ 1	○ 2	○ 3
3. I felt that I could not shake off the blues even with help from my family or friends.	○ 0	○ 1	○ 2	○ 3
4. I felt that I was just as good as other people.	○ 3	○ 2	○ 1	○ 0
5. I had trouble keeping my mind on what I was doing.	○ 0	○ 1	○ 2	○ 3
6. I felt depressed.	○ 0	○ 1	○ 2	○ 3
7. I felt that everything I did was an effort.	○ 0	○ 1	○ 2	○ 3
8. I felt hopeful about the future.	○ 3	○ 2	○ 1	○ 0
9. I thought my life had been a failure.	○ 0	○ 1	○ 2	○ 3
10. I felt fearful	○ 0	○ 1	○ 2	○ 3
11. My sleep was restless.	○ 0	○ 1	○ 2	○ 3
12. I was happy.	○ 3	○ 2	○ 1	○ 0
13. I talked less than usual.	○ 0	○ 1	○ 2	○ 3
14. I felt lonely.	○ 0	○ 1	○ 2	○ 3
15. People were unfriendly.	○ 0	○ 1	○ 2	○ 3
16. I enjoyed life.	○ 3	○ 2	○ 1	○ 0
17. I had crying spells.	○ 0	○ 1	○ 2	○ 3
18. I felt sad.	○ 0	○ 1	○ 2	○ 3
19. I felt that people disliked me.	○ 0	○ 1	○ 2	○ 3
20. I could not get "going".	○ 0	○ 1	○ 2	○ 3

Blood Pressure

	Time [1]	Systolic Blood Pressure (SBP)	Diastolic Blood Pressure (DBP)
19.	1st: HH:MM ___:___	___ mm Hg	___ mm Hg
20.	2nd: HH:MM ___:___	___ mm Hg	___ mm Hg
21.	3rd: HH:MM ___:___	___ mm Hg	___ mm Hg
22.	Mean	___.___ mm Hg	___.___ mm Hg

[1] *Participant should remain seated for 5 minutes prior to the initial blood pressure measurement, all subsequent readings should be taken after 30 seconds intervals.*

23. Respiratory Rate: ___ **(respirations/minute)**

Quality of Marital Index (Norton, 1983)

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Patient **EXCEL**

Relationship Satisfaction

Participant Initials

3 3 3 3 | 1 **STUDY ID**

Visit No **Interviewer**

Visit Date – –

Please indicate your agreement or disagreement with the following statements concerning your relationship with your partner

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

1. You have a good relationship ○1 ○2 ○3 ○4
2. Your relationship with your partner is very stable. ○1 ○2 ○3 ○4
3. Your relationship is strong. ○1 ○2 ○3 ○4
4. Your relationship with your partner makes you happy ○1 ○2 ○3 ○4
5. You really feel like part of a team with your partner ○1 ○2 ○3 ○4

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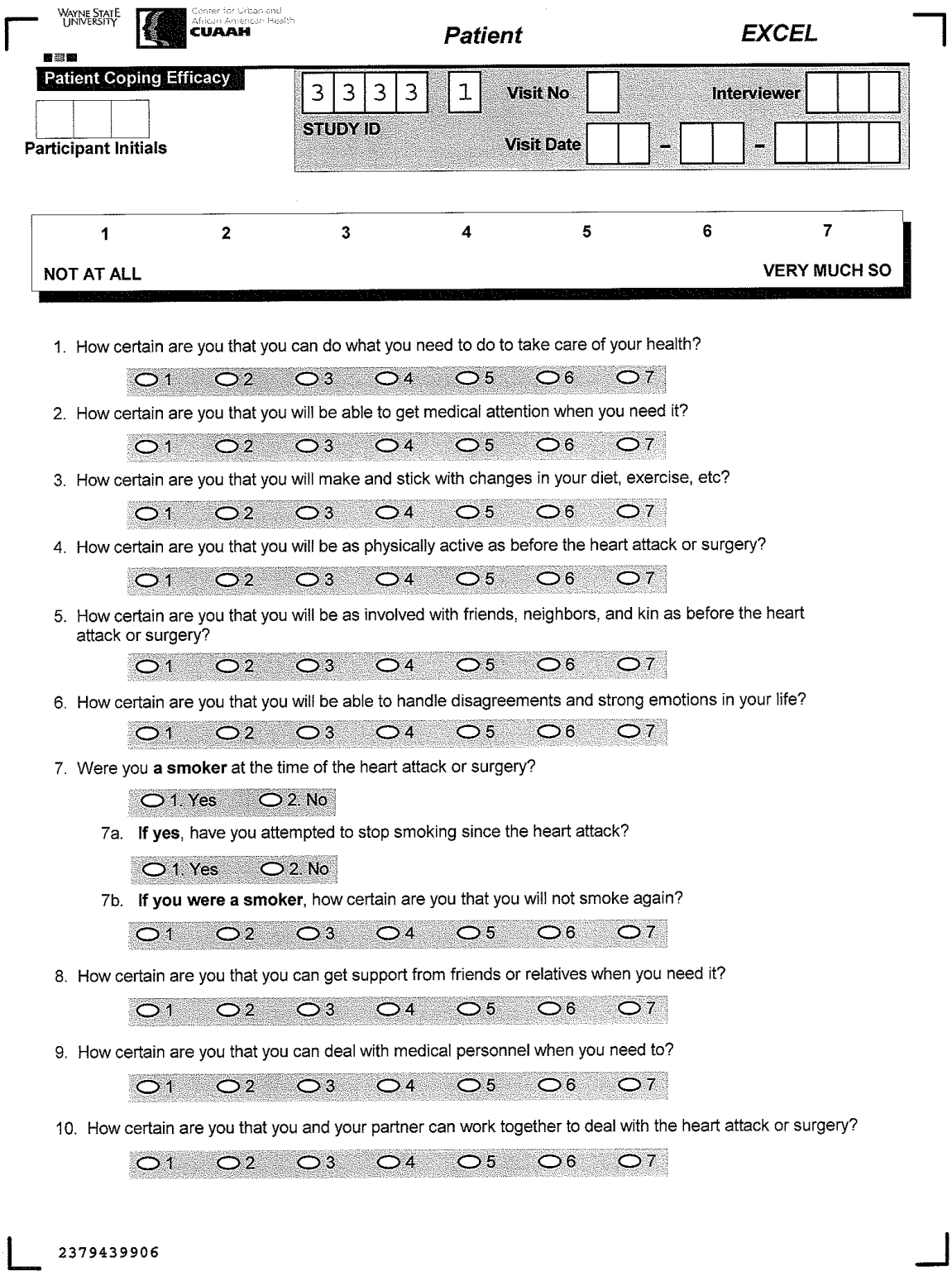
Patient Coping Efficacy (Coyne & Smith, 1994)



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Patient **EXCEL**

Patient Coping Efficacy

Participant Initials

STUDY ID 3 3 3 3 1 Visit No Interviewer

Visit Date – –

1	2	3	4	5	6	7
NOT AT ALL						VERY MUCH SO

1. How certain are you that you can do what you need to do to take care of your health?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
2. How certain are you that you will be able to get medical attention when you need it?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
3. How certain are you that you will make and stick with changes in your diet, exercise, etc?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
4. How certain are you that you will be as physically active as before the heart attack or surgery?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
5. How certain are you that you will be as involved with friends, neighbors, and kin as before the heart attack or surgery?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
6. How certain are you that you will be able to handle disagreements and strong emotions in your life?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
7. Were you **a smoker** at the time of the heart attack or surgery?
   ○1 Yes ○2 No
   7a. **If yes**, have you attempted to stop smoking since the heart attack?
   ○1 Yes ○2 No
   7b. **If you were a smoker**, how certain are you that you will not smoke again?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
8. How certain are you that you can get support from friends or relatives when you need it?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
9. How certain are you that you can deal with medical personnel when you need to?
   ○1 ○2 ○3 ○4 ○5 ○6 ○7
10. How certain are you that you and your partner can work together to deal with the heart attack or surgery?
    ○1 ○2 ○3 ○4 ○5 ○6 ○7

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ABSTRACT

THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS: THE SOCIAL SUPPORT EXCHANGE PROCESS

by

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Advisor: Dr. Antonia Abbey

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Social support is a dyadic exchange process that yields many psychological and physiological health benefits. The goal of this study was to examine the effects of the support exchange process from a dyadic perspective on health outcomes and to investigate the extent that gender and relationship characteristics influence the support process and health outcomes. It was hypothesized that female patients would report seeking more support and male patients would report receiving more support. In addition, it was expected that patient seeking support would be associated with both partner provision and patient receipt of support. It was also hypothesized that patients' receipt of support would be predictive of better health outcomes. Among a sample of 195 cardiac rehabilitation patients and their self-selected support partners, the current study examined three dimensions of health-related social support: patient seeking, partner providing, and patient receiving. In addition, patients' gender, characteristics of their relationship to the support provider, and living with support partners were included as cross-sectional predictors of support and health outcomes. The support variables, gender, and relationship characteristics were examined on the health outcomes of

psychological well-being, physical well-being, depressive symptoms, blood pressure, relationship satisfaction, and coping efficacy. A combination of mean differences, correlations, and path analyses were used to examine the hypotheses. Male patients were more likely than female patients to seek social support, receive social support, and live with their support partners. Living with one's support partner was associated with partners' providing more support and patients' receiving more support. Patients with a spousal support partner reported receiving more support than patients with adult children support partners. More support receipt was related to better psychological well-being, greater relationship satisfaction, and better coping efficacy. Gender of patients and living with a support partner were important predictors of the support exchange process and the health outcomes. In addition, seeking support emerged as an important predictor of receiving support. The current study provides psychosocial pathways that may help reduce the health disparities that exist among African American patients with cardiovascular disease. Future research should examine these constructs from a longitudinal perspective and include multiple social support measures. Clinical implications include assessing social support resources to improve well-being during cardiac rehabilitation.

AUTOBIOGRAPHICAL STATEMENT

RIFKY TKATCH

Rifky Tkatch received her undergraduate degree magna cum laude in Psychology with a minor in History from Wayne State University on the Presidential Scholarship in May of 2003. She entered the Cognitive, Developmental, and Social Psychology Doctoral Graduate program at Wayne State University in the fall of 2003 and received her Master's Degree in social/health psychology in 2006. Rifky's doctoral major is social and health psychology and she has completed a minor in statistics. She served as a Graduate Research Assistant at the Center for Urban and African American Health (CUAAH), on a 5-year grant funded by the National Institute of Environmental Health Sciences, to study health disparities. At CUAAH, Rifky extended her interest in social support through the EXCEL Education Project. The EXCEL project is a social support intervention amongst African American cardiac rehabilitation patients and their support partners. Rifky was also a pre-doctoral trainee at the Institute of Gerontology. She has been an officer of the Graduate Student Organization's of both the Department of Psychology and the Institute of Gerontology and was actively involved in both departments. Rifky served as a coordinator for the Psychology area Brown Bag series and served as Vice President of the Society for Integrative Experimental Psychology. Rifky has accepted a post-doctoral fellowship position at Karmanos Cancer Institute in conjunction with Children's Hospital of Michigan and Wayne State University. In this position she plans on continuing to explore the dyadic support exchanges between patients and support partners.