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GENDER DIFFERENCES IN THE SELF-EFFICACY OF AFRICAN AMERICANS WITH TYPE II DIABETES: A SECONDARY ANALYSIS OF A CHRONIC DISEASE SELF-MANAGEMENT PROGRAM

By

Haley Erica Shead

A THESIS

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2005

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ABSTRACT

GENDER DIFFERENCES IN THE SELF-EFFICACY OF AFRICAN AMERICANS WITH TYPE II DIABETES: A SECONDARY ANALYSIS OF A CHRONIC DISEASE SELF-MANAGEMENT PROGRAM

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African Americans with type II diabetes must possess the self-efficacy to manage and cope with the chronic illness in order to prevent further decline in physical and psychosocial health. This secondary analysis of data examined gender differences in self-efficacy with the theoretical frameworks of Lazarus (1993), Bandura (1971), and Bandura and Bussey (1999). There were no significant differences found between the mean scores on the Self-Efficacy for Managing Chronic Disease 6-Item Scale (Lorig, 1999) for the subgroups of males and females. Other variables such as years diagnosed with diabetes, family members with diabetes, and HbA_{1c} levels were not related to self-efficacy. There was also no difference in the mean levels of self-efficacy for those with or without insurance, regardless of gender.

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CHAPTER 1

INTRODUCTION

African Americans suffer from a disproportionate number of health concerns when compared to their white counterparts. This is an ongoing health disparity in our society. Baldwin defines health disparities as "unequal burdens in disease morbidity and mortality rates experienced by ethnic/racial groups as compared to the dominant group" (2003, p.2). Based on this definition, research shows that these health disparities are an important issue in health care today.

Researchers find a profound rift between the poorer health of African Americans and the white majority population in the United States. African Americans have rated themselves as having poor health and poor health habits (Richardson, 2003). The American Nurses Association (ANA) states that African American men under the age of 45 have ten times the likelihood of white men to die from hypertension (2003). Forty-one percent of African American men and 45% of African American women have hypertension (American Heart Association, 2005).

African American women are 2.2 times more likely to have low birth weight infants than white women (Jaffe & Perloff, 2003). African Americans have a higher incidence and rate of death from cancer than other races in the United States, and African American males have a higher incidence of cancer than African American females (Jemal, Murray, Ward, Samuels, Tiwari, Ghafoor et al., 2005). Another

disparity and cause of disparity is obesity, which is a contributing factor to diabetes, and 62.9% African American men and 77.2% of African American women are obese (American Heart Association, 2005). Diabetes is the sixth leading cause of death in the United States (Jemal et al., 2005). In 2002, the overall death rate for diabetes was 25%, but for African Americans it was 49% for men and 48% for women (American Heart Association, 2005). Eleven percent of African American adults have diabetes and 25% of African American women over the age of 55 have diabetes (American Diabetes Association, 2005). There is a higher rate of African Americans than whites with diabetes and they have more complications (McDonald, Wykle, Misra, Suwonnaroop, & Burant, 2002). One of these complications is the higher rate of early diabetic nephropathy (Young, Maynard, & Boyko, 2003). When compared to whites, African Americans are 1.5-2.5 times more likely to lose lower extremities and 2.6-5.6 more likely to suffer from kidney disease, due to diabetes related complications (American Diabetes Association, 2005). These are but a few of the many health disparities evident in the literature (Dhooper, 2003; Jonas & Kovner, 2002; Shaffer, 2002).

The factors that lead to these health disparities are not well known. However, some of the documented causes of disparities include lack of access to care for ethnic/racial minorities and lack of culturally competent health care providers (Goode, Sockalingham, Brown, & Jones, 2001). Access includes the need for health clinics to be in ethnic/racial communities, as well as financial access to health care. Research has shown that patients are less likely to seek care where they feel culturally discriminated against (Schaffer, 2002). According to Baldwin (2003), these

disparities are due to the poor quality of care received from health care providers. A bias in health care exists against the minority populations (ANA, 1998; Baldwin, 2003). A study of Hispanics in the emergency room suffering from bone fractures showed non-Hispanics were twice as likely to receive pain medication (Jonas & Kovner, 2002). Studies have shown that African Americans had higher blood pressure when they felt discriminated against (Krieger & Sidney, 1996). This bias that creates discrimination exists because of lack of cultural diversity training of healthcare providers (Goode, Sockalingham, Brown, & Jones, 2001).

Life experiences unique to African Americans may also contribute to disparities. African Americans have increased life stressors, including social stress, and decreased community support (Gregg, Geiss, Saaddine, Fagot-Campagna, Beckles, & Parker et al., 2001; Turner & Avison, 2003). African American race/ethnicity is linked to lower socioeconomic levels where there are increased stressors and lower quality of medical care (Fiscella, Franks, Gold, & Clancy, 2000).

There is a scarcity of research on African Americans and chronic disease management. However, this field has great potential for further study. Few studies have evaluated African Americans' use of preventative services and self-management techniques (Gregg et al., 2001). Current research has not fully explored chronic disease such as hypertension, as it relates to gender differences in African Americans (Bountain, 1999). It is conjectured that this is because cultural competency was not demonstrated in previous research when working with participants (Goode & Harrisone, 2000). There is a great need for culturally competent research. Partnerships with culturally diverse communities can open doors to discovering

factors that contribute to disparities. Research with African Americans must be specific to their ethnic group in order to avoid the feelings of being "guinea pigs" for majority group research (Carlson & Chamberlain, 2004). This feeling could skew study results.

Emotions and identity are links to the cause of health disparities. It is important to incorporate the social context into African American health disparity research (Carlson & Chamberlain, 2004). The social context includes how people cope with their chronic illnesses. One of the mechanisms of coping is through the use of self-efficacy. Self-efficacy, the belief in one's ability to accomplish a task, is a necessity for disease self-management leading to the prevention of complications and death. The disease patterns in African Americans point to gender differences. Researchers need to examine gender differences in self-efficacy for African Americans coping with type II diabetes in order to eliminate one etiology of health disparities. Increasing self-efficacy for diabetes self-management will decrease complications that lead to further disparities.

Purpose

The purpose of this study was to examine gender differences in self-efficacy for African Americans coping with type II diabetes. Self-efficacy is necessary to cope with diabetes through self-management. Individuals of different genders may cope and possess varying amounts of self-efficacy, therefore, having unequal amounts of disease and complications. Gender based interventions may be necessary in order to increase self-efficacy for coping with the chronic disease of diabetes and for

increasing disease self-management. Increases in self-management can lead to decreased complications and decreased distress.

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CHAPTER 2

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Conceptual Framework

This study was based on the conceptual frameworks of Lazarus' (1993) psychological stress and coping, as well as Bandura's (1977) concept of self-efficacy. Lazarus, a pioneer in research on stress and emotions, began his studies of stress and coping in 1966. Since that time, many studies have been performed and the concepts have evolved.

Stress is a "relationship between a person and the environment that is appraised by the person as taxing or exceeding his or her resources and as endangering well-being" (Folkman, Lazarus, Gruen, & DeLongis, 1986, p. 572). Stress is the reaction to potential harm (Lazarus, 1993). The potential harm could be the diagnosis of a chronic illness, such as type II diabetes and its impact on one's life. The amount of stress is determined by the perception of the individual, as well as his or her resources and ability to cope with it (Gellis, 2002). The person's judgment of his or her ability to handle having diabetes determines the amount of stress experienced.

There are two coping processes, cognitive appraisal and coping. Cognitive appraisal is the evaluation of the event, whether it could be detrimental, and if so, in what manner (Folkman et al., 1986). During cognitive appraisal, the person

determines if the stressor is beyond his or her individual resources to cope. Folkman et al. (1986) define coping as, "cognitive and behavioral efforts to manage (reduce, minimize, master, or tolerate) the internal and external demands of the personenvironment transaction" (p. 572). In the context of chronic illness a person may cope by gaining more information or performing self-management tasks.

Coping is a psychological process where a person "may respond or cope in a changing way, during the unfolding of the stressful event and may rely upon differing coping strategies within the same situation at different times" (Coyle et al., 2000, p.60). Coping may not always be positive. Certain coping strategies can appear to alleviate the stress at the time but only end up adding greater stress later. An example of this is a person with diabetes who binge eats, only to end up with increased blood glucose and associated complications.

Coping is an intentional process that involves both behaviors and emotions (Lazarus, 1991). Two functions of coping are to deal with the cause and handle the emotion. These are problem-focused and emotion-focused coping (Folkman et al., 1986). As summarized by Lerman and Glanz (1992), problem-focused coping is active, to change the stressor. Problem-solving and information-seeking are two examples of this type. Passive emotional coping does not try to change the stressful situation, but is focused on changing the perception of the stressor. Social support and talking about stress are forms of passive emotional coping. But unhealthy coping strategies, such as denial and avoidance, are also forms of emotional and passive coping. Problem-focused coping is most useful when the stressor is changeable,

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whereas emotional coping would help when the stressor cannot be changed (Lerman & Glanz, 1992).

In order for a person to cope, he or she must possess self-efficacy to believe he or she can cope. The concept of self-efficacy, developed by Bandura (1977), is based on social cognitive theory. At the time of theory development there were two different trends identified for behavioral change, which were cognitive processes and performance-based procedures. This concept integrates the two; cognitive processes mediate change, but experiencing mastery arising from effective performance alters the event more. The concept's purpose was to explain and predict psychological changes achieved by different treatments. Bandura states that the worth of selfefficacy "is then evaluated by its ability to predict behavioral changes produced through different methods of treatment" (1977, p. 193). Bandura's theory is based on the assumption that treatment will help increase self-efficacy and lead to the desired outcomes. Psychological procedures, whatever their form, serve as means of creating and strengthening expectations of personal self-efficacy. This is due to the belief that people have an influence over how they feel and the actions they perform. Behavior is not only influenced by self-efficacy but also by skills and incentives. Cognitive processes play a prominent role in the acquisition, retention, and regulation of new behaviors (Bandura, 1977).

The concept of self-efficacy is defined as a person's judgment that he or she can do something (Bandura, 1977). Additional concepts are outcome expectancy and efficacy expectations. Outcome expectancy is "a person's estimate that a given behavior will lead to certain outcomes" (Bandura, 1977, p. 193). The assurance an

individual has that he or she can successfully perform the behavior to bring about the outcome is an efficacy expectation (Bandura, 1977). Outcome and efficacy expectations are differentiated because an individual can believe that a particular course of action will produce certain outcomes, but if he or she doubts his or her ability to perform activities, such information will not influence his or her behaviors. All of these concepts are essential to successful change.

The theoretical propositions suggest that success (in personal accomplishments) raises mastery experience while repeated failures lower them especially if mishaps occur early in the course. Modeling procedures alter avoidance behavior through the intervening influence of efficacy expectations (Bandura, 1977). Desensitization (verbal persuasion) raises mastery experience, but the outcome expectancy manipulations have either little or no effect, leading to inconsistency. Diminished emotional arousal can raise mastery experience. A person who engages in activity that is threatening and who masters it will reinforce the sense of efficacy, thereby eventually eliminating the defensive behavior (Bandura, 1977).

In order for people to cope with chronic illness they must possess efficacy expectation, believing that they can successfully manage their illnesses. There are different sources for efficacy expectations. These include performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal (Bandura, 1977). People need to perform an evaluation of their own self-efficacy for coping with a chronic illness or perform certain self-management behaviors. Assessment and interventions can be aimed at these sources to help people identify

means of self-efficacy, as well as using sources of self-efficacy for interventions targeted at increasing self-efficacy.

Examples of performance accomplishments would be previous mastery of a skill or coping with a life stressor. In the case of a person with diabetes, previous success with monitoring blood sugar or making wise food choices would be instances of previous mastery. This can encourage the person that he or she is capable of taking steps to manage the disease and cope with having a chronic illness. The vicarious experience of observing others manage and cope with chronic illness can also encourage people to cope. Examples would be watching others check their blood sugar or make wise food choices.

Verbal persuasion, or encouragement, by social support sources can help increase self-efficacy. Verbal persuasion can come from chronic disease selfmanagement courses. Ones' emotional states can also affect self-efficacy, and negative emotional arousal is usually debilitating to self-efficacy (Bandura, 1977). Interventions with those who have diabetes would be aimed at diminishing negative emotions through teaching of coping skills, as well as through empowering people to manage their own disease and to increase self-efficacy to cope.

The concept of self-efficacy has been used for enhancement of the Health Promotion Model (Pender, Murdaugh, & Parsons, 2002) and the Health Belief Model (Rosenstock, Strecher, & Becker, 1988). Pender et al.'s (2002) Health Promotion Model has been used with African American women in inner cities and churches for wellness programs. Lorig (1996) used the concept of self-efficacy for a model of chronic disease self-management. Chronic disease self-management courses have

been offered to different populations throughout the United States. Thus, the concept of self-efficacy can easily provide a basis for studying self-efficacy for disease selfmanagement in African Americans.

Bussey and Bandura (1999) developed the social cognitive theory of gender role development and functioning. This theory explains how people of each gender acquire and maintain behaviors. As children, males and females develop their identity and behaviors through three methods: modeling, enactive experiences, and direct tuition. Modeling is a method by which identity is learned by observing others. An example of this would be a son learning coping mechanisms from his father. Next, enactive experiences are the outcomes of one's actions associated with gender identity, which are impacted by the reaction of others. A girl being praised for playing house would be an example of an enactive experience. Finally, direct tuition ties the two previous methods together, helping to generalize and conceptualize what is learned from modeling and enactive experiences. The different methods of influence are interactive and their impact varies with developmental stages (Bussey & Bandura, 1999).

The factors that control gender behaviors include self-regulatory mechanisms and self-efficacy. Social sanctions develop the self-regulatory mechanisms through socially based consequences. For example, a teenage boy may be chastised for wanting to choose a profession that was once considered only for women, such as nursing. Self-sanctions can also assist people to develop self-regulatory mechanisms through actions that add to their self-worth, identity, and development of standards of conduct. An example of self-sanctions for someone with diabetes would be that

person managing his or her diet, exercising and seeing the results through gaining control over diabetes. The person's belief that he or she can exercise control over him/herself and identity is self-efficacy (Bussey & Bandura, 1999). Self-efficacy is essential to self-development and as such is important to helping people with diabetes.

Research based on the social cognitive theory has shown that the societal environment influences efficacy guided development of self. Social influence places value on certain lifestyle choices for the different genders, such as their decisions about careers and coursework. Social influence guides gender beliefs for accomplishment of certain careers or academics. Gender development is impacted by social, physical, and psychological factors (Bussey & Bandura, 1999).

Framework Summary

Chronic illness, such as type II diabetes can be a stressor on an individual. The stress can come from the person's interpretation of how the diabetes will affect him or her and the ability to handle this effect. This interpretation of stress will determine the person's ability to cope or handle the situation and emotions prompted by it. There is a continuous inter-relationship between stress and coping. One's ability to cope can increase or decrease stress; whereas one's stress can influence the appraisal of personal coping abilities.

In order to cope with the stressor the individual must possess the belief that coping will help and that he or she can cope. This belief is called self-efficacy. For a diabetic to handle the stress of having the disease he or she must believe it possible to take the steps necessary to manage the chronic illness and the emotions that may arise

from having the illness. Self-efficacy can be increased through various sources, such as learning how to live with diabetes, seeing others who have coped with diabetes, and achieving personal control over the disease process. The acquisition and maintenance of coping process and self-efficacy can be different for males and females. This is affected by socialization and self-development.

Literature Review

A brief overview of the current literature of coping, self-efficacy and gender will be discussed. The discussion will begin broad to demonstrate that illnesses are forms of stressors. Individuals manage or cope with these stressors and coping may be different between genders. Research has given explanation to these differences, one difference may include culture. Genders also differ in their levels of self-efficacy. Following the discussion of gender differences in self-efficacy, a summary of the literature and the research question will be offered.

Health as a Stressor

Health concerns, such as diabetes, are a source of stress for individuals. Ineffective coping with this stress can lead to distress and additional health concerns. Diagnosis of a chronic illness can lead to a feeling of loss of control which is a great source of stress (Peterson, 1989; Williams & Koocher, 1998). Zautra (1996) suggests that the ongoing distress from chronic illness is due to the frequency of health issues, decreased numbers of positive life events, and increased problems with social support systems.

Farmer and Ferraro (1997) examined the perception of distress and health through a secondary analysis of a ten year longitudinal study. A probability sample of 4,880 African Americans and whites ages 25-74 years was assessed. LISREL and ordinary least squares analysis were used to determine the impact of chronic illness and disability at two time periods. Time one (T1) data were collected in conjunction with medical exams and health history, but not necessarily at the time of initial diagnosis of an illness. Ten years later, without an intervention in between, follow up data (T2) were collected again, measuring health and distress. Participants with a chronic disease reported higher levels of distress at T1 ($\beta = .15$) than at T2 ($\beta = .07$). This result led Farmer and Ferraro (1997) to suggest this is because the initial impact of disease causes more distress than successive health problems. People with more physical impairments had increased measures of distress ($\beta = .52$) at T2 than T1 ($\beta = .09$), indicating that as disability increases, so does an individual's distress. People who had a chronic illness perceived their health as poorer at both measurements ($\beta = .19$ at T1 and $\beta = ..10$ at T2). People who rated increased distress perceived their health as more compromised at both time points ($\beta = ..31$ at T1 and $\beta = ..24$ at T2).

Farmer and Ferraro (1997) also found differences by gender. Women of both races had higher levels of distress and rated perceived health as good at T1 and T2. Men did not experience an increase in distress but they did experience an increase in illness from T1 to T2.

In the study, African Americans suffered from more disease, disability, and poorer perception of health. Farmer and Ferraro (1997) suggest that from the results, "once distress is controlled, perceived health is not predictive of change in morbidity, but it is predictive of higher levels of functional disability" (p. 308). Illness can cause distress, which if not controlled, will lead to further debilitation.

Distress can be expressed as depression. Depression can develop from the stress of poor health. Chronic illness is a risk factor for developing depression and African Americans experience more chronic illness than whites (Kimmel, Patel, & Peterson, 2002). One of these chronic illnesses is diabetes (National Diabetes Information Clearinghouse (NDIC), 2005).

People with diabetes are at risk for developing depression. In a study by Katon et al. (2004), health problems including obesity and diabetes complications were associated with depression. Data were gathered through the Patient Health Questionnaire (Spitzer, Kroenke, & Williams, 1999). Pharmacy records of the 4,016 participants were also reviewed in order to determine co-morbidities. The sample was grouped according to those with depression and without, as well as hemoglobin A1C (HbA_{1c}) less than or greater than eight. Those in the HbA_{1c} greater than eight group were significantly more often categorized in the depression group ($X^2 = 24.19, p < 0.001$). Men with depression had a greater rate of complications (33%) than those without depression (17.4%). Long-term diabetics and those from a race other than white were more likely to suffer with depression. The researchers suggest that in order to improve self-management, depression should be treated as well. This is further supported by Husaini et al. (2004) who suggest that diabetic African Americans with depression have almost three times higher emergency room visits and longer hospital stays, due to poor management.

Diabetes causes a wide variety of emotional responses. In a qualitative study (DeCoster, 2003) comparing the emotions and the sources of emotions for whites and African Americans, 32 different emotions were identified and most were typically

negative. The increasing number of emotions was associated with the number of diabetic complications. For African Americans the majority of these emotions occurred at the time of initial diagnosis. The researcher suggests that emotions help determine health outcomes. Intervention should be targeted at helping clients to cope with these emotions in order to prevent distress.

Type II diabetes is a chronic disease which can lead to distress. When not managed there can be complications which will lead to further distress. African Americans are found to have more illness and disability (Farmer & Ferraro, 1997) and may suffer from more distress or depression (NDIC, 2005). Diabetes and depression is associated with increased HbA_{1c} and complications (Katon et al., 2004). Research is needed to determine how African Americans handle the stressor of diabetes in order to prevent distress.

Management of Stressors

In order to manage stressors from chronic illness, people need to learn to cope effectively. This functions to prevent further mental and physical distress. Pakenham (1999) did a non-experimental study to explore the role of coping in the adjustment to multiple sclerosis. Data were collected from 132 subjects at intake and twelve months later. The researcher found that positive adjustment to chronic illness is most associated with problem-focused coping.

Thompson, Gil, Abrams, and Phillips (1992) examined the adjustment of 109 African Americans with sickle cell disease. Data were collected through an interview process and a self-report questionnaire, addressing illness, stress, efficacy, coping strategies, social support, and psychological adjustment. After analysis of variance

(ANOVA) comparisons, the participants' results were grouped into categories of poor and good adjustment. Fifty-six percent of the participants were in the poor adjustment group. Those in the poor adjustment group had higher levels of stress, decreased selfefficacy, decreased social support, and overall increased stress. The necessity of good coping mechanisms for adjustment to chronic illness is suggested by this study (Thompson et al., 1992).

A positive way of using an emotional strategy for coping would be seeking social support. Social support is a coping resource (Pakenham, 1999). Social support is a person's interactions with others that provide encouragement, help, and stress moderation (McDonald, Wykle, Misra, Suwonnaroop, & Burant, 2002). McDonald et al. (2002) did a study of African Americans with type 2 diabetes and found "social support determined acceptance ($\beta = .32, p = .01$) and health-promoting behaviors ($\beta = .39, p = .002$)" (p. 28). Religion is a form of social support and coping for African Americans (Constantine, Wilton, Gainer, & Lewis, 2002; Snowden, 2001). Religion can help African Americans adapt to chronic illness and has been associated with decreased prevalence of depression (Muskgrave, Allen, & Allen, 2002). Interventions to facilitate coping and manage diseases can be performed in collaboration with African American churches.

Another source of social support is families. Families can be involved in disease management processes through encouragement and support (Davis, Clance, & Gailis, 1999). A patient can have trouble adjusting to chronic illness when family members and health care providers fail to recognize the impact of disease on the

patient. Patients often cannot cope as well when they are affected by thoughts of being unable to live up to others' expectations.

Hatchett, Friend, Symister, and Wadhwa (1997) conducted a prospective study of 68 end-stage renal failure patients in order to determine the relationship of interpersonal expectations with social support in predicting psychological adjustment to a chronic illness. A questionnaire which addressed whether expectations relate to adjustment was used for the T1 data. Three months later, the T2 data were collected to discover if expectations predict changes in adjustment prospectively. The questionnaires addressed the perceptions of family, friends, and medical staff expectations and support, as well as social desirability. The participants' adjustment was measured with questions to address depression, illness intrusiveness, hopelessness and quality of life (Hatchett et al., 1997).

In this study, perceived ability to meet families' expectations and perceived family support impacted adjustment to chronic illness. People who felt they could not meet families' desires or expectations also felt they did not receive enough support from their families. With social support and social desirability controlled in the analysis, family expectations significantly impacted adjustment. Twenty-two percent of the time depression (R = .63, F = 14.32, p < .001) was due to fear of not meeting families' desires. Hopelessness, which 6% (R = .36, F = 3.25, p < .05) of the time was due to fear of not meeting family desires prospectively related to changes in perceived family social support (7%, p < .05) and medical social support (8%, p < .05). Hopeless patients did not feel they had social support from family or health care providers. The researchers suggest targeting the family and patient for intervention.

Family needs to be a part of learning about disease self-management in order to be an effective source of support. Increasing a patient's self-efficacy to manage illness can increase his or her self-esteem. Increasing self-esteem will lead to an increased perception of social support (Hatchett et al., 1997).

Carter-Edwards, Skelly, Cagle, and Appel (2004) interviewed focus groups of African American women with type II diabetes. The study was performed to determine the relationship between social support and self-management of the illness. In four different group settings, the researchers interviewed 12 African American women regarding their social support systems. All of the African American women valued being independent and in control while being able to multi-task to make sure their families functioned smoothly. They did not want their illness to interrupt this independence and control. The women played the roles of a multi-caregiver and expressed it was very stressful to figure out how to care for themselves.

Social support was accepted depending on the manner by which it was offered. The women did not want informational or instrumental support by being helped or told what to do. However, they all wanted emotional support of understanding and help without asking for it. The women reported that they did not feel their families and friends understood how the chronic illness affected their lives enough to provide adequate social support. Their most desired forms of social support were those which allowed them to remain independent and in control while providing understanding and help by comprehending the impact of diabetes in their lives (Carter-Edwards et al., 2004).

In the case of the African American woman, if she does not have diabetes but one of her family members does, she may be the one making the medical decisions for this family member. Therefore, it is important to include families in the education process (Brody, Jack, Murry, Landers-Potts, & Liburd, 2001). In providing social support for African Americans using a support group, self-management will be promoted when the group is composed primarily of others with the same illness and ethnicity (Brody et al., 2001). Self-management is a form of coping and adjustment to the chronic illness.

Self-efficacy is also supportive of adjustment to a chronic illness (Dorsey & Murdaugh, 2003). Self-efficacy is necessary for self-management of chronic illness, and this is increased through successful solving of identified problems (Bodenheimer, Lorig, Holman, & Grumbach, 2002). A person with a chronic illness would need self-efficacy to believe he or she could adjust to the illness and to do certain behaviors necessary to manage the illness and prevent complications. Positive life events are necessary to build a person's self-efficacy beliefs that he or she can make good things happen in his or her life in spite of illness (Zautra, 1996). Pajares (2002) suggests that the greater the level of self-efficacy, "the greater the effort, persistence, and resilience. Self-efficacy beliefs also influence the amount of stress and anxiety" (p.116).

Kuijer and DeRidder (2003) found that the higher a person's self-efficacy, the better the adjustment to illness. The first goal in their study was to determine if there was a relationship between accomplishing disease self-management goals and perceptions of well-being in those with a chronic illness (including diabetes). The

researchers sought to discover the role of self-efficacy in accomplishing these goals. Kuijer and DeRidder (2003) performed a secondary analysis of post-test data from a controlled experimental intervention designed to increase self-management and coping skills. There were 117 participants, having asthma, diabetes, or heart failure, who were randomly divided into a control and intervention group. The patients were recruited in the Netherlands in a clinic setting. The participants had to have been diagnosed for at least a year and be between the ages of 18 and 65. They received cards with disease self-management goals. The participants first sorted the cards in order of importance to them and then secondly in order of attainability. The researchers also addressed self-efficacy for disease self-management using a scale developed by Lorig et al. (1996). Lastly, participants completed a survey to address quality of life and psychological wellness.

Patients were divided into groups respective of their illness. The results did not show differences between groups in goal importance or self-efficacy ratings. Patients with diabetes reported the best physical and mental health. In regards to selfefficacy, the researchers through LISREL analysis, found that lower self-efficacy was associated with depression. They suggest that self-efficacy for disease selfmanagement may not be related to present health or distress because there are few short-term benefits. The quality of life of a person with chronic illness is determined by his or her coping strategies and self-efficacy. In the case of diabetes, this is demonstrated by fewer complications (Kuijer & DeRidder, 2003).

Rose, Fliege, Hilderbrandt, Schirop, and Klapp (2002) recruited 625 diabetics to test a structural model with the following constructs: doctor-patient relationship,

patient characteristics, coping, secondary illnesses, HbA_{1c}, and quality of life. Data were collected through a questionnaire. People with active coping mechanisms had lower HbA_{1c} values ($\beta = -0.19$), better doctor-patient relationships ($\beta = 0.15$), and higher self-efficacy ($\beta = 0.21$). Higher quality of life was also associated with possessing knowledge about diabetes ($\beta = 0.15$). Positive coping and higher selfefficacy in diabetes correlated with less distress and a happier life (Rose et al., 2002).

The relationship between dietary self-management and life satisfaction was examined by Senecal, Nouwen, and White (2000) within the context of socialcognitive theory and self-determination theory. The 638 participants were selected from the Quebec Diabetic Association. Participants had to be an adult who had diabetes for three years, without any treatment changes for the past six months. The participants completed a questionnaire which included items about dietary self-efficacy, dietary self-care, and life satisfaction. The model that was tested in the study depicted a direct association between self-efficacy/autonomy and adherence/life satisfaction. Self-efficacy had a greater effect on disease self-management ($\beta = 0.54$) and self regulation was determinate of life satisfaction ($\beta = 0.34$). The researchers conclude that self-efficacy and autonomous self-regulation for disease self-management lead to increased life satisfaction (Senecal et al., 2002).

Overall, the literature suggests that people use their coping strategies in order to handle the stress caused by chronic illness. One of these strategies is social support. For African Americans, family and religion are sources of social support. Family members should be included in the disease management process. Another mechanism necessary for coping is self-efficacy. A person must believe he or she has the ability

to cope or manage his or her chronic disease. A lack of self-efficacy may lead to distress or further illness.

Higher levels of self-efficacy lead to increased diabetes self-management (Aljasme, Peyrot, Wissow, & Rubin, 2001). People are more likely to continue diabetes self-management when they have higher self-efficacy, which will lead to decreased complications from diabetes (Senecal et al., 2000). Self-efficacy must be increased in order to decrease diabetic complications.

Gender Differences in Coping

People cope with stressors differently; this can be due in part to gender. Research has revealed these differences as well as shedding light on the reasons for the differences. Because of these coping differences, there are differences in distress. *Gender Differences in Health*

McDonough and Walters (2001) assert that females are in poorer health than males due to social roles. Females are exposed to greater amounts of stress, and due to job status, do not have the financial means to care for their health issues. These authors suggest that the effect of chronic stressors should be examined in the context of the differences in male and female experiences. Through a review of literature, they found two hypotheses to answer gender differences in health due to stress. The hypotheses are "differential exposure" and "differential vulnerability."

McDonough and Walters (2001) explain *differential exposure* as "higher levels of demands and obligations" in social roles... "(thus) equal allocation of social role conditions ought to eliminate gender differences in health" (p.549). The second hypothesis is differential vulnerability, which is defined as:

Women's greater reactivity or responsiveness to life events and ongoing strains that are experienced in equal measures by men. It is argued that gender reactivity or responsiveness is located in a generalized female disadvantage in social roles and coping resources that affects the nature and meaning of stressors and, ultimately harms health. (p. 549).

With these ideas as foundation, these authors used a self-report survey to examine gender differences in distress, self-rated health, chronic conditions, restricted activity, and heavy drinking, as well as the effect of differential exposure and susceptibility to chronic stress and life events.

McDonough and Walters' (2001) longitudinal study was performed in Canada, where data were collected every other year for 6 years. The sample included 13,896 citizens, with 56% being female. The data showed that females had greater amounts of distress (23%) and illness (30%). Males consumed greater amounts of alcohol weekly. Female job stress was rated 50% higher than male. Women reported higher amounts of stress in most areas except financial, in which men had a 3% higher rate of stress. Chronic stress in social life was related to health distress for both genders, males ($\beta = 0.07$) and females ($\beta = 0.27$). The results did not help the researchers understand why females were more susceptible to certain illnesses. Both genders were stressed, which impacts and leads to adverse health conditions (McDonough & Walters, 2001).

Other researchers suggest that there are gender differences in levels of distress. Turner and Avison (1989) built their study based on the perception that role

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socialization is the origin of this gender difference. Women are more likely to care for others, and these authors propose that this leads to more distress.

Turner and Avison (1989) studied the factors that facilitate the adjustment to disability. Disability is a source of chronic stress that must be coped with in order to adjust and avoid distress, or in this case, depression. A sample of participants with disabilities was selected randomly from the Canadian Census of Southwestern Ontario. Participants had to be over the age of 18 and have some sort of disability that changed their activities of daily living. In the 1989 report, the stage 2 data of the study were used, which included 731 married participants, ages 19-91, and measured stress and depressive symptoms. Women were found to have greater numbers of depressive symptoms (M = 14.56) than men (M = 11.91) across the life span. Women under the age of 65 reported 40% more stressful life events than men.

From these data Turner and Avison (1989) concluded that women have more life stressors and therefore experience distress. This exposure is to due to the tendency of women to seek and give more social support, therefore having more exposure to others' stressors. Women are more affected by stress that is occurring in another individual and men are more affected by stress in themselves. However, when women are working outside of the home they are more likely to encounter stressful events happening to themselves and their spouses, but to be less depressed. When men are unemployed, they tend to experience more distress. Thus, the authors conclude that women are more prone to stressful events independent of their roles, and this is due to their tendency to be more sensitive to others.

Rollnik et al. (2003) surveyed 50 women and 39 men who had tension headaches. The concepts of coping with illness, depression, quality of life, and headaches were studied. Participants completed a headache home diary over a four week period. Pressure pain thresholds and total tenderness scores were obtained. Women (M= 6.2) rated their quality of life lower than men (M = 7.7). Women (M = 2.7) also tended to use more pessimistic coping mechanisms than men (M = 2.2). No other differences were found between genders. When dealing with the same illness as in this study (headaches), findings suggest that women cope more negatively than men, therefore they have more pain and depression.

Males and females experience stress which negatively affects their health. Females experience more stress, especially in the social realm, and experience poorer health. Females' poorer health may also be due to their use of negative coping strategies.

Gender Differences in Coping Strategies

The use of coping strategies can lower distress. Gender differences in coping strategies can be identified throughout the life span. In a study of adolescents' coping mechanisms, Piko (2001) wished to discover the most frequently used coping strategies and the relationship of gender with mental health. In Szeged, Hungary, 1,039 (474 male and 565 female) students aged 14-19 responded to questionnaires which addressed coping, psychological well-being, frequency of psychosomatic symptoms, self-perceived health, acute and chronic illness episodes, and health behaviors. Coping mechanisms measured included passive, problem-analyzing, risky, and support-seeking behaviors. Risky coping activities were those that endangered

either the individual's or another's health. In measuring coping mechanisms, passive (females M = 0.27; males M = -0.34) and support-seeking (females M = 0.07; males M = -0.01) coping mechanisms were more commonly reported by females than males. Piko (2001) found that for both genders passive and risky coping strategies were negative, whereas problem-analyzing and support-seeking were present in positive psychological health. Coping mechanisms influenced mental health more than they affected physical health.

For both genders, as age increased, there was a decreased likelihood to use support-seeking coping behaviors, even though this mechanism correlates with greater psychological well-being for both males (r = 0.37) and females (r = 0.11). Social support is a coping mechanism that correlates with mental health (Piko, 2001). Psychological health can determine the ability to cope with chronic health problems. Piko's (2001) findings differ from studies with adults in the sense that adolescent males used social support and it affected their health more positively than females.

A second investigation, by Geckova, Van Dijek, Stewart, Groothoff, and Post (2003) studied 2,616 randomly selected Slovakian teenagers to determine how social support affects health in different genders. A self-report questionnaire was filled out by teenagers to address these variables. Teenagers who reported lower health also more frequently reported low amounts of social support (44%) than high social support (35%). Forty-four percent of females reported psychological and physical distress, whereas only 31% of males reported distress. A greater number of males (31%) than females (22%) reported having minimal amounts of social support. The researchers suggested that females sought more social support because they had

poorer health. In spite of the finding of females having increased social support and more distress, Geckova et al. (2003) conclude that regardless of gender, social support does increase health.

Studies of adults also show gender differences in use of social support. Males do not report using social support as much as women. From surveying 186 undergraduate students using five scenarios of stressful situations in work, school, and social life, Day and Livingstone (2003) found that women will use emotional and social support, whereas men use more informational support. The researchers were able to categorize reported coping mechanisms based on participants' responses to situations.

Through a secondary analysis, McDougall (1998) explored coping differences between genders in dealing with memory changes from aging. The participants (128 female participants and 21 males) were surveyed through questionnaires while attending continuing education conferences in Texas and Louisiana. The initial instruments addressed quality of health, gender, memory evaluation, sense of control, coping strategies, anxiety, and depression.

Gender differences were found in use of coping methods. Females sought more help from others (female M = 3.15; male M = 2.44) and religion (female M = 3.06; male M = 2.55). But there were no significant differences in other coping mechanisms. Overall, females (M = 20.01, SD = 1.70) used more coping methods than males (M = 19.13, SD = 2.02). However, females reported more anxiety (M = 3.70) than males (M = 3.39). McDougall (1998) did not find that coping impacts depression as the form of distress for either gender. However, the researcher did find

that women used coping strategies that enlisted social support, including religion and help-seeking. This finding can be helpful in planning interventions to assist females to cope.

Lengua and Stromshak (2000) tested path models of the effect of gender, gender roles, and personality on coping and symptoms. The volunteer participants were from entry level psychology classes at the University of Washington. There were 250 participants, 141 females and 109 males. In group settings they completed questionnaires to measure the variables of sex role, femininity, masculinity, locus of control, coping, and depression.

In this study females showed they were more empathetic (M = .39) than males (M = .16). The only gender difference found in coping was in the use of social support. Females (M = .72) used this method more than males (M = .03). The only gender difference in psychosocial symptoms was that males reported more antisocial behavior.

In the above studies, the most frequently reported gender difference in coping was found in the area of social support. Females used social support more frequently than males. Coping, including social support, was found to improve mental health. *Reasons for Coping Differences*

Pines and Zaidman (2003) studied how culture and gender affect coping through the use of social support. They suggest there are four theoretical views of social support. The first is evolutionary, based on the roles of men and women in historical times. This view would hold that social support usage is based on gender and transcends cultures. The second view is psychoanalytical. This view suggests that
developmental experiences in childhood train people to respond differently to social support as adults. The social role perspective places more emphasis on cultural and social norms as a determinant of social support usage, rather than gender. Fourthly, social construction theory states that people in different cultures create their own view of coping methods.

Based on the different theories, Pines and Zaidman (2003) obtained a representative sample of 485 Jewish and 384 Arabic adults in Israel. The participants were given a questionnaire to address functions, sources, and quality of social support. All participants ranked emotional support as the most important form; however, women rated it higher in importance than did men. Jewish participants had more of a tendency to seek social support than did the Arabic individuals. They found that the need for social support was cross-cultural and cross-gender (Pines & Zaidman, 2003).

Porter et al. (2000) suggest that the coping mechanisms an individual uses impact his or her health. They support their research through a review of literature in which they found differences in coping mechanisms, with men being more problemfocused and women more emotion-focused, due to socialization. In this study the researchers sought to discover if men and women report using different coping strategies, depending on the context of questioning. The study included 100 participants equally divided between men and women. Participants carried around hand held computers that beeped them at random times. When participants heard the beep they were to report on any stressful experience that may be occurring to them at the time or since they last reported a stressful event at the previous beep.

The participants were divided by gender into work stress and marital stress groups. More females used catharsis (90% vs. 57 %), social support (92% vs. 65%), and acceptance (50% vs. 26%) than males, respectively. There were no differences in the number of problems reported or in appraisal of problems. In the study, when males and females were questioned in a non-stressful situation they would answer based on socialized roles. However, when participants of both genders were in the midst of a stressful situation they utilized similar methods to cope. The authors suggest that gender differences only occur in reporting of coping mechanisms, rather than in coping process (Porter et al., 2000).

Sigmon, Stanton, and Snyder (1995) conducted two studies to test gender differences in coping as defined by the socialization and role constraint theories. The socialization theory suggests that the way women were socialized does not prepare them with effective coping mechanisms. It proposes that women are taught to express their emotions actively, yet act more passively. This is the opposite of men, who are taught to handle situations more actively, using a problem-focused method. Role constraint theory suggests that if men or women were in the same role they would use the same coping strategies in spite of gender (Sigmon et al., 1995).

In the first study by Sigmon et al. (1995), differences in coping strategies and responses to stress were examined when different genders occupied the same role. One hundred-thirty introductory psychology students (55 males and 75 females) volunteered to be in the two-part study. At baseline, questionnaires on coping, cognitive appraisal, and psychological adjustment related to personality were

completed. In time two, which was a month later, situational questions representing the same variables were completed.

Females (M = 5.32) perceived situations as worse than males (M = 4.64). In stressful situations, feelings of power were greater in males (M = 4.73) than females (M = 4.30). Males (M = 5.07) felt more challenged, rather than threatened by stress, unlike females (M = 4.30). Males and females both reported the use of problemfocused and acceptance coping strategies, however, more avoidance coping strategies were used by males (F = 5.05, df = 1,125, p < .05), and females used more emotionfocused strategies (F = 19.30, df = 1,125, p < .0001). These results were found for both personality-based and situational coping. Although there were no significant differences found in psychological functioning, certain coping strategies did correlate with this variable. In both genders, avoidance coping was associated with depression (r = .30, p < .001) and psychological distress (r = .38, p < .001).

In the second study, Sigmon et al. (1995) sought to determine which coping strategies were used in various situations, as well as their effectiveness. A second introductory psychology class of 234 participants (97 males and 137 females) was surveyed. Females reported feeling more empowered by all three situations (M = 5.70) than males (M = 5.18). There was no significant difference in coping strategies used, but females did rate emotion-focused coping as more effective (F = 22.98, df. = 1,220, p < .0001). Females also utilized more problem-focused strategies than men when it came to stressful situations in education and family (F = 3.73, df. = 2,386, p < .02), and females also used more acceptance coping than males in social situations (F = 5.15, df. = 2,384, p < .005). Problem-focused and emotion-focused coping were

more effective for females. Overall, females rated themselves as happier (M = 55.32) than males (M = 51.96).

The researchers conclude socialization does impact coping strategies used. Differences were found in coping strategy effectiveness ratings. Emotional-focused coping was used more by females in all situations (Sigmon et al., 1995). Socialization affects coping, however, when it is controlled, coping strategies appear to be more similar in men and women.

Gender and Culture

Aranda, Castaneda, Lee, and Sobel (2001) indicate that previous studies have found women are more likely than men to have stress and depression. They tested the hypothesis of gender differences in depression, stress, social support, and coping. The participants for the study consisted of 171 Mexican Americans, 88 men and 83 women, from rural and urban areas of Pennsylvania and Los Angeles, California. Both genders experienced stress, but in different domains. Marriage was a greater source of stress for women, whereas men rated their job as a more of a stressor. Women found more support from their families than men did. In both men and women avoidance coping was associated with depression, however there were no gender differences in depression levels. The authors did not discuss which gender used greater amounts of avoidance coping. The only gender difference found was that females used social support more frequently as a coping mechanism.

Canino et al. (1987) examined the relationships of gender and social roles with depressive disorders and symptoms. The researchers used the Diagnostic Interview Schedule (National Institute of Mental Health) to collect data from 1,551 Puerto Rican residents aged 17-64. Multiple regression analysis was used to determine relationships between demographics, health and gender. Women (10.7%) were more likely to have depressive disorders than their male counterparts (4.9%) even when controlling for health and social role. No interactions were reported for coping strategies.

Genders cope differently with life stressors. This could be because of the difference in emotions they express. Fischer, Mosquera, Van Vainen, and Manstead (2004) performed a secondary analysis of a study on gender patterns of emotion. The assumption of their study is that if emotions are set by society, then they should be different in different countries, whereas if they are biologically established they will be the same across countries. The researchers hypothesized that women across countries would have fewer powerful emotions and more powerless emotions. Secondly, women living in countries where they had less powerful societal roles would be less antagonistic. Lastly, women, irrespective of country, would cry more, because of it being a biological response (Fischer et al., 2004).

The countries were assessed for gender role power through a gender empowerment measure developed by the United Nations in 2002. The measure was designed to determine the amount of power women held in the different countries. Participants were university students who were given a questionnaire to rate experience of the six emotions under study: fear, sadness, anger, disgust, shame, and guilt. The tool also addressed the presence of antagonism and crying (Fischer et al., 2004).

Women (M = 2.90, SD = 0.55) across countries reported greater intensity (p < .01) of powerless emotions (fear, sadness, shame, and guilt) than men (M = 2.82, SD = 2.90). Antagonism scores differed for genders, but not across countries. Antagonistic emotional expression was greater in men (M = 0.67, SD = 0.88) than women (M = 0.59, SD = 0.88) and women (M = 1.58, SD = 1.17) cried more than men (M = 0.74, SD = 0.89) across countries. Differences were also found between countries. In countries where women played more powerful roles, more women than men reported getting angry at significant others.

Fischer et al. (2004) concluded that expression of emotions is the same regardless of culture. Women in more powerful roles did express antagonism; therefore, it is not biologically based like crying, but socially determined by roles. Gender differences in emotions remain constant across cultures.

Some researchers have found that insufficient social support leads to distress, arising from loneliness and feelings of lack of belonging. Reevy and Maslach (2001) sought to understand how people seek, receive and use social support through exploring its link to gender. Based on the premise that gender role socialization is the cause for differences in social support the researchers used personality variables, such as nurturance, for femininity and self-confidence, to be associated with masculinity. The 81 participants were recruited from a San Francisco area YMCA to complete a questionnaire packet. It was found that for both genders, partners (38%) and friends (37%) were the most common sources for social support. The types of support sought were emotional (56.7%), informational (51.7%), and tangible (23.3%). The types of support received were emotional (73%), informational (58.2%) and physical (19.4%).

In the correlations between gender and personality variables, nurturance was positively associated with femininity (r = .50, p < .001) but not masculinity (r = .19, p < .05). Autonomy was positively related to masculinity (r = .43, p < .001) but negatively to femininity (r = ..37, p < .001).

Seeking (r = .23, p < .05) and receiving (r = .28, p < .01) emotional support was positively related to femininity. Femininity (r = .40, p < .001) and nurturance (r = .25, p < .05) was positively related to receiving support from women. Masculinity (r = .25, p < .05) and self-confidence (r = .21, p < .05) were positively related to receiving support. Masculinity was related to getting support professionally (r = .27, p < .05).

A limitation of this study may be found in the analysis of the data. Many correlations were tested. Significant results may have come from multiple correlation analyses of the data, rather than the data itself.

The researchers suggest that the acculturation into femininity trains both genders to seek and receive social support, and concern for others' feelings. However, masculine socialization prepares people to problem solve and gives them the courage to do so. Providing and receiving social support is not related to sex, but gender socialization (Reevy & Maslach, 2001).

The previous research has discussed gender differences in coping. There is a discrepancy, however, in that some studies suggest that genders cope similarly, but report different coping strategies. Other studies say there are actual gender differences in coping strategies. Researchers suggest these differences are due to socialization and biological differences. Therefore, multiple factors enter into the reasons for

different findings in studies of coping strategies associated with male or female gender.

Gender and Self-efficacy

Self-efficacy is a variable that has also been found to differ between genders. Most of this research has been performed in the academic setting. However, studies have also revealed gender differences in self-efficacy for performance of health behaviors.

Gender Differences in the Academic Setting

In order to determine gender differences in self-efficacy, 300 second-year prospective teachers from three teacher colleges in Botswana were selected as participants for a quasi-experimental study (Brandon, 2000). There were 218 female and 72 male participants in this sample. In order to rate their confidence for performing certain teaching tasks, prior to and after practice teaching, the participants were given a Likert-type questionnaire developed by researchers (Cronbach's alpha = .90). It was found that females' confidence for teaching increased after practice teaching (t = -2.60, p < 0.01). Male participants' confidence (self-efficacy) remained the same as before practice teaching. A prominent difference was found between male and female self-efficacy ratings prior to practice teaching. Males had significantly higher ratings of self-efficacy for teaching than the females (t = -3.39, p < 0.01). Self-efficacy ratings did not differ between males and females after practice teaching (t = -1.28, p = 0.21). This study demonstrated experience mastery can increase self-efficacy for females.

Researchers have considered self-efficacy differences as being due to socialization towards masculinity or femininity and not necessarily determined by sex. Choi (2004) examined sex role differences in self-efficacy. The author proposed that self-efficacy is related to "sex-role orientation," masculinity or femininity. Masculinity operationalizes self-efficacy through "competitiveness, independence, aggressiveness, and assertiveness (p. 151)." Self-efficacy is related to femininity when it is in the domain of "submissiveness, dependence, and interpersonal relationships (p. 151)." To test these ideas, 215 college students were recruited. Men made up 52% of the sample, and women made up 48%. General self-efficacy, academic self-efficacy, course-specific self-efficacy and sex-role orientation were measured. Sex-role orientation was significantly related to self-efficacy (p < .01). General self-efficacy and academic self-efficacy were high in participants with high scores in masculinity (Choi, 2004).

Pajares (2002) reviewed literature on self-efficacy as it relates to self-managed learning in males and females. Females often set more goals and monitor their own performance in a learning setting. They also express more confidence in the ability to accomplish tasks. Males tend to reward themselves more for accomplishments. This author suggests that instructors should encourage self-belief in learners, but also provide challenging opportunities in order to increase self-efficacy. The author proposes that when learners get clear performance evaluation there can be a decrease in the gender gap of self-efficacy.

Gender Differences in Health Behaviors

Gender differences also occur in self-efficacy to perform health behaviors such as exercise. Gernigon, D'Arripe-Longueville, Debove, and Puvis (2003) performed a quasi-experimental study in order to determine how genders differ in goal setting, self-efficacy, and asking for help to perform a new task. The value of self-efficacy for carrying out a task was also examined. They recruited volunteer participants consisting of 40 ninth-graders, 20 boys and 20 girls, from five different Paris high schools, based on pretest scores. A total of 328 students completed the pretest, which was performance of a gymnastics stunt that had been demonstrated and explained. The participants were then trained on the task with an ego-involving condition. This included being graded by 6 classmates (3 girls and 3 boys). After a description of the process, a questionnaire was given in order to assess self-efficacy and perceived difficulty of the task. Each student was allowed to have 10 trials of the task where they could ask for help, and were video taped during the trials.

Performance was measured by observation of the task from the pretest. Perceived difficulty was measured on a scale with ratings of 1 to 10. Self-efficacy was measured by participants indicating the score they thought they would receive on the task. Goal involvement was measured using a questionnaire. Help-seeking was determined by judges viewing the video tapes for the number of times asked for help, as well as whether partial or full help was requested. A gender difference in strength of self-efficacy (F = 6.62, p < .05, ES = .83) was found. Boys perceived lower levels of difficulty than girls, and asked for less help than girls. The degree of self-efficacy was related to achievement of the task (r = .35, p < .05) (Gernigon et al., 2003). One

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limitation of the study is considering the physical task of the uneven bars may have been easier for males because they have more upper body strength than females. The results may have originated more from biological than psychological differences.

Jackson, Lezzi, Gunderson, Nagasaka, and Fritch (2002) examined the relationship of gender differences in pain perception to self-efficacy. Questionnaires were completed by 112 college undergraduate subjects (69 women and 43 men) for self-efficacy, and coping. Pain tolerance was tested through a cold pressor test (CPT) of dipping their hand in ice cold water. Pain level was measured every 30 seconds, for four minutes if possible.

Females rated lower levels of physical (females M = 84.34, males M = 95.86) and task specific (females M = 14.13, males M = 15.58) self-efficacy, heightened pain sensitivity (females M = 6.27, males M = 5.40), and reduced pain tolerance (females M = 174.86, males M = 208.12). When self-efficacy was controlled for men and women, they achieved ratings of the same level of pain tolerance and intensity. The researchers suggest that self-efficacy can be increased through coping and intervention. In order to handle pain, men used distraction, a form of problem-focused coping. Women used emotion focused coping by renaming the pain as something such as tingling.

Trost, Pate, Dowda, Saunders, Ward, and Felton (1996) explored gender differences in the amounts of exercise as related to self-efficacy. Participants were selected from 3 elementary schools and 2 intermediate schools in South Carolina. African American (72.9%) and white (27.1%) 5th grade students, (179 males and 186 females), provided self-reports of the previous day's physical activity. Determinants of physical activity were divided into cardiovascular physical fitness, psychosocial determinants, and environmental determinants. Boys reported higher levels of physical activity and watching television. They reported greater amounts of self-efficacy. The researchers suggest that boys were more physically active because they had greater levels of self-efficacy (Trost et al., 1996). The study did not consider biological makeup, development, or socialization; thus it is inconclusive to apply to the general population.

O'Hea, Wood, and Brantley (2003) studied differences in men and women's self-efficacy, change, decisions for smoking cessation, exercise adoption, and dietary fat reduction. Low income participants were selected from clinics. There was no significant gender difference in self-efficacy for smoking cessation, exercise, or decreasing dietary fat. Men had increased self-efficacy for behavioral change, which was thought to be dependent upon the health behavior.

Meekers and Klein (2002) explored differences in self-efficacy for use of condoms in males and females. They surveyed 2,096 urban Cameroon youth aged 15-24. Fifty-eight percent of females and 88% of males surveyed had self-efficacy for condom use, however only 33% of females and 61% of males actually used them. Additionally, the researchers acknowledged the impact of prior behavior and social support on self-efficacy. They found participants' self-efficacy for using condoms was related to previous use (OR = 5.18) and previously buying condoms (OR = 2.10). This would be in agreement with Bandura (1977), posing that previous mastery increases self-efficacy. When controlling for age, knowledge, and media influence,

males were still more likely to have increased self-efficacy for condom use (OR = 1.96) than females (OR = .86).

In contrast, a study of condom use in Latino adults, by Marin, Tschann, Gomez, and Gregorich (1998) found that women have greater self-efficacy. A sample of 1,600 unmarried Latino adults with the mean age of 26 was surveyed to measure self-efficacy for condom use, acculturation, and demographics. It was found that those with lower levels of education had less self-efficacy in four of the areas studied: regular partner, impulse control, partner resistance, and condom discussion. Women had higher levels of self-efficacy than men in resistance to partner and consistent partner.

Other researchers have found that gender and self-efficacy did not play as great a role in behaviors. Faryna and Morales (2000) researched the relationship of self-efficacy to HIV related risk-taking behaviors in multiethnic adolescents. They found that ethnicity was the greatest determinate of risk taking behaviors. The researchers suggest that interventions should always incorporate ethnicity (Faryna & Morales, 2000).

Somlai, Kelly, McAulife, Ksobiech, and Hacki (2003) found that culture and ethnicity are predictors of self-efficacy. In studying HIV risk behaviors in drug using men and women, they found that those who had the most risk taking behaviors were more likely to have lower self-efficacy and be African American (90%). They suggest low self-efficacy was a determinate of high risk behaviors.

Culture, ethnicity, and gender impact the level of self-efficacy. Studies in the academic and health settings have found gender differences in self-efficacy. The

majority of the research indicates men have greater amounts of self-efficacy than women but with intervention these differences can be diminished. This cannot be generalized to the whole population. In the case of Latino women they possessed higher levels of self-efficacy for condom use than men (Marin et al., 1998). Culture impacts the socialization process of men and women, and thus the levels of selfefficacy for different tasks. More research is needed to consider if the African American culture affects the level of self-efficacy for diabetes self-management in the different genders.

Living with Diabetes

Type II diabetes is a life changing illness. It is psychologically and behaviorally challenging; 95% of the disease management is reliant upon the diabetic patient (Pinkstaff, 2004). In order to manage it, an individual must make lifestyle changes. These changes can alter his or her quality of life (Polonksy, 2000). This can include learning to eat foods that he or she is not accustomed to, as well as regular exercise. Depending on the treatment, a patient must learn how to monitor his or her own blood glucose, take medication, and eventually give himself or herself insulin. People report being weighed down by the overwhelming demands of the chronic illness and often overwhelming feelings decrease the ability for self-management (Rubin, 2000).

Due to the disease process, a diabetic often has other chronic illnesses such as hypertension, hypercholesterolemia, and cardiovascular disease. Diabetes that is not well controlled can lead to numerous complications, such as retinopathy, neuropathies, and nephropathy (Campbell, 2000). Simple skin cuts can lead to complications resulting in the loss of an extremity. This can lead to impaired balance and decreased mobility (Pinkstaff, 2004). African Americans have decreased selfmanagement and higher blood sugar levels (Schectman, Nadkarni, & Voss, 2002). African Americans have a higher rate of cardiovascular, neurological, renal complications (Brody, Jack, McBride-Murry, Landers-Potts, & Liburd, 2001). These complications impact quality of life.

Older diabetics, especially women, suffer from decreased quality of life due to complications such as decreases in cognitive functioning, falls, pain, and urinary incontinence (Pinkstaff, 2004). Additionally, older people find it harder to adjust to the illness (Aljasem et al., 2001). This may be partially due to a decline in physical and functional health of elderly diabetics (Pinkstaff, 2004). These can further decrease the ability to self-manage diabetes. Older diabetic women are more likely than men to be in a nursing home due to lower levels of activity and increased life spans (Pinkstaff, 2004).

The impact of managing the disease and dealing with its complications can be overwhelming for the diabetic. Diabetics are three times more likely to become depressed than the general population (Brody et al., 2001). People with diabetes and depression reported having very low quality of life (Goldney, Phillips, Fisher, & Wilson, 2004). People often try hard to manage their diabetes but end up frustrated and discouraged (Polonsky, 2000).

People may cope with the stress differently. Aljasem, Peyrot, Wissow, and Rubin (2001) found that women often cope by binge eating, which further decreases control of the illness. Jefferson, Meikus, and Spollett (2000) found that African

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American women were less likely than white women to exercise or lose weight to prevent complication and this may be related to cultural norms. African Americans may have additional barriers such as lack of health care, difficult living environments, lack of affordable grocery stores with nutritious foods, lack of safe exercise facilities, lack of transportation, and lack of knowledge for managing the disease (Brody et al, 2001; Rimmer, Silverman, Braunschweig, Quinn, & Lui, 2002).

Fatigue, feeling unwell, and frequent sickness can also be a frequent barrier to performing self-management for a diabetic (Luscomb, 2000; Rimmer et al., 2002). These feelings are due to the blood glucose levels. Family may not be supportive for a diabetic. They may either act as "diabetes police" or isolate the diabetic (Polonsky, 2004). This frustrates the coping process by decreasing social well-being (Rubin, 2000).

The burden of type II diabetes decreases quality of life and may be harder for African American to self-manage due to the numerous barriers. The disease process itself and barriers may lead to lower self-efficacy. Thus it is necessary to discover how to best target interventions for increasing self-efficacy of African Americans with type II diabetes.

Summary and Implications

Chronic illness, or in this case, type II diabetes, can be a significant form of stress on a person. If this stress is not coped with effectively, it will lead to further stress and distress. People cope through different mechanisms. One of these is social support. Social support for African Americans is often found from family and religion (Carter-Edwards et al., 2004; Constantine et al., 2002). This can be important for planning interventions for increasing self-management efficacy. Partnerships with religious organizations can provide an open door into the African American community (Muskgrave et al., 2002).

Gender differences have been found in use of social support. Women usually seek social support more than men. African American women are often the head of the household and if they are not the patient, they should be included in the patient education process (Carter-Edwards et al., 2004). When African American women are the patient, their stressful role should be considered.

Self-efficacy is a necessary component to coping. In order to cope effectively, people must possess the belief that they can manage their diabetes. Without selfefficacy there can be further distress and maladjustment. Gender differences have been found in self-efficacy. In general, men have been found to have higher levels of self-efficacy. This could be due to their masculine socialization to be courageous and problem solve. However, it is necessary to explore the gender difference as it relates to African Americans' self-efficacy to cope with type II diabetes.

Research Question

For this secondary analysis, the following research question was addressed: Are there gender differences in levels of self-efficacy for African Americans coping with type II diabetes?

Definition of Terms

The following definitions were used. Gender differences are defined theoretically as how men and women perceive life and cope with life differently based on their sex (Bountain, 1999; Bussey & Bandura, 1999). Gender differences are operationally defined by the answer of either male or female on a demographic questionnaire. Self-efficacy is a person's judgment of his or her ability to perform (Bandura, 1997). Self-efficacy scores on the Self-Efficacy for Managing Chronic Disease 6-Item Scale (Lorig et al., 1999) give its operational definition.

CHAPTER 3

METHODS

Research Design

The study design was a secondary analysis of data collected by Cynthia Coviak Ph.D., R.N. and Carmen Eribes Ph.D., R.N., at Grand Valley State University. The variables of self-efficacy and gender were explored as they relate to African Americans with type II diabetes. The initial study was an experimental randomized controlled investigation using pre-test and post-test measures to determine if a chronic disease self-management course increased health behaviors and perceptions of health, and decreased health resource utilization in African Americans with diabetes. In the summer of 2002, Eribes began the study in a lakeshore community in western Michigan. The study used the Chronic Disease Self-Management Program (Lorig et al., 1999).

Data were collected at pre and post-test, but in this study only baseline data were analyzed. One of the disadvantages to secondary analysis was that the researcher did not have input into the initial study regarding variables to be explored. However, the advantages of using secondary analysis include the time and cost effectiveness of the method.

Population and Sample

In the initial study, a non-probability convenience sample was recruited from the community in Michigan. In the main study there were two different recruitment periods. The first recruiting period began in the summer of 2002 and ended in October of 2002. The methods used during this period included recruiting subjects from churches, jobsites, and through advertisements at community locations. New strategies were developed and the recruiting began again for a second time. Flyers were placed in pharmacies, medical facilities, and at McDonald's restaurants (including on employees' time sheets). Presentations were made at African American community events, as well as radio and television appearances. The study's staff was able to work with a local insurance organization for low-income individuals to use their database and facilities for contacting people with diabetes about the research. The most effective method was when beauticians in the area who attended a different diabetes class began to spread the word about the study in their salons.

The inclusion criteria for the participants were that they had to be over the age of 18 and African Americans with type 2 diabetes. The subjects also had to be willing and possess the mental capacity to complete questionnaires, as well as possibly participate in a 6 week long class. The sample was homogeneous to a degree; all were African Americans with type 2 diabetes.

The pretest data sample size was 291. The intervention group consisted of 71 individuals and the control group included 220 subjects. The control group data consisted of 107 men and 109 women, whereas the intervention group had 22 men and 49 women. The smaller sample size for the intervention group is reflective of the

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limited capacity of the facilitators to accommodate a larger number of participants in class at any one time.

The larger the sample, the more representative it should be of the population. According to Polit and Beck (2004) when non-probability sampling methods are used, even a large sample can have bias. Participants came from different educational, socioeconomic, and medical backgrounds. A larger sample size is needed when a sample is more heterogeneous. However, considering the size of the community and ethnic group represented, 291 participants is a sizable sample.

Additional demographic characteristics of the sample include an age range of 21-89 years. The majority of the sample was married (38%) and had an educational level between 9-12 grades (51%). Eighty-six percent of the sample had some form of insurance, but the most frequent salary range was between \$5,000 and \$9,999 a year. Men reported having a higher salary than women. Other characteristics/descriptive findings will be discussed as they relate to gender differences in Chapter 4.

Instruments

The variables explored in this study were extracted from two surveys. The demographic tool was developed by Eribes (2002) and included participants' personal characteristics. These characteristics included age, years diagnosed with diabetes, age at diagnosis, number of chronic illnesses, self-reported height, weight, education level, income level, and medical insurance coverage. All the instruments for the health behaviors, health perceptions and health care utilization measurements were obtained from the Stanford Patient Education Research Center website (http://patienteducation.stanford.edu/research/secd6.html). The instrument used to

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collect self-efficacy data was the Self-Efficacy for Managing Chronic Disease 6-Item Scale (Lorig et al., 1999). The questionnaire had responses ranging from 1 (*not at all confident*) to 10 (*totally confident*). The internal consistency reliability is 0.91 for this instrument and the test-retest reliability for the items range from 0.72-0.89 (Stanford Patient Education Research Center, 2005). Chronbach's alpha in 283 complete cases was 0.96 in the parent study (Coviak, C., personal communication, October 3, 2005). The tool is determined to be stable based on the reliability coefficients being greater than 0.70. This tool has been used in multiple studies since 1999; it has also been revised and translated into Spanish.

Procedures

In the original study, participants signed consent forms after recruitment and were randomly divided into a control and intervention group. Both groups were pretested with a questionnaire and drawing of Hemoglobin A1c (HbA1c) levels. The intervention group then attended the Chronic Disease Self-Management program as designed by Stanford University researchers. The class sessions were led by Stanford master trainers, and facilitators trained by the master trainers in accordance with the Stanford curriculum. The course includes instruction on the symptom cycle, cognitive symptom management methods, creation of an action plan, problem-solving steps, exercise, healthy eating, communication, visiting health care providers, and other coping mechanisms. *Living a Healthy Life with Chronic Conditions* (Lorig et al., 2000) is used as the text book. Both groups completed post-testing six months after the course was completed, or after entering the study if in the control group. For this secondary analysis, pre-test data were explored to compare levels of self-efficacy between genders. Data from the demographic instrument and Self-Efficacy for Managing Chronic Disease 6-Item Scale (Lorig et al., 1999) were used. The data used had already been entered into a Statistical Package for the Social Sciences (SPSS) for Windows systems file. Analysis was performed to compare men and women's levels of self-efficacy.

CHAPTER 4

RESULTS

In order to answer the research question, multiple analyses were performed. Descriptive statistics were examined for the whole sample as well as for men and women. After answering the research question, an exploration of variables associated with development of self-efficacy was completed to look for additional relationships. An overview of the study's findings will be discussed in the following pages.

Data Preparation and Analysis

Because the review of literature showed that after an intervention male and female levels of self-efficacy could be equalized (Brandon, 2000; Pajares, 2002), the pre-test data were analyzed in order to compare gender differences in self-efficacy prior to intervention. Prior to this secondary analysis, data had been coded from questionnaires and scale scores were calculated according to the guidelines found on the Stanford Chronic Disease Self-Management Program website. For the selfefficacy scale, if 2 or more of the 6 items were missing, the scale score was not calculated and the variable was considered to be missing.

Descriptive Statistics

The primary research question addressed was, *are there gender differences in levels of self-efficacy for African Americans coping with type II diabetes*? Studies examined in the review of literature suggested that self-efficacy differences would be

found based on feminine or masculine socialization. In this study gender is a proxy measure for the feminine or masculine socialization. The sample contained 131 males and 160 females.

Gender differences were found in the some of the descriptive statistics, as seen in Table 1. A higher percentage of females visited their health care provider regularly. Females more frequently reported "always" discussing personal problems related to their illness with their provider and men more frequently reported "never" discussing personal problems. However, a larger percentage of males than females checked their blood sugar at home.

Table 1

Reported Frequencies of Visits to Physicians, Discussing Personal Problems with Provider (Always and Never), and Checking of Blood Sugar, by Gender

	· · ·		
Variable	Males	Females	
	n (%)	n (%)	
Visit Physician Regularly	129 (89.1)	158 (94.9)	
Always Discuss Problems	131 (9.2)	159 (23.9)	
Never Discuss Problems	131 (23.7)	159 (21.4)	x
Check Blood Sugar	129 (78.3)	160 (68.8)	

Note: All percentages given are valid percents to correct for missing responses.

Results of Hypothesis Testing

Based on the review of literature, it was expected that different levels of selfefficacy would be found for the two genders. Gender was measured at the nominal level according to whether a participant was male or female, and self-efficacy on an interval level. The genders were compared for differences in the mean levels of selfefficacy.

The items on the self-efficacy scale addressed the participants' confidence for six aspects of their health. The first item considered their ability to prevent fatigue, caused by the disease, from interfering with their life. The ability to keep pain from hindering their quality of life was the second aspect. The third item addressed controlling emotional distress. Fourthly, the ability to handle other health issues was questioned. Confidence for disease self-management tasks was the fifth item. Finally, the ability to control other activities from interfering with their quality of life was the sixth item.

The total sample reported moderately high levels of self-efficacy for managing their diabetes. The most frequent response to all six items was *totally confident*. The means of the responses were similar for all of the questions without much variability among the items. The sample size and descriptive statistics for each item are presented in Table 2. Sample sizes noted are smaller than the total *N* of 291 because of missing data.

Table 2

Item	n	М	SD	Skewness	Kurtosis
Fatigue	286	6.64	2.95	-0.47	-0.92
Pain	287	6.47	2.93	-0.40	-0.96
Distress	285	6.58	2.89	-0.37	-1.04
Symptoms	287	6.60	2.93	-0.38	-1.09
Tasks	286	6.63	2.94	-0.40	-1.03
Other	287	6.78	2.99	-0.50	-1.01

Total Sample Descriptive Findings for Items of the Self-efficacy Scale

When item statistics were analyzed by gender, each group had relatively high levels of self-efficacy, as well. Table 3 displays the self-efficacy scores for males and females. When examining the mean levels, it is interesting that both males and females had the highest confidence in controlling other activities from interfering with their quality of life. The second highest confidence level for males was for handling distress, while for females confidence for handling symptoms was second highest. Confidence levels for managing fatigue, and to accomplish self-management tasks were next in order for males and females, fatigue with third highest levels and self-management, fourth. Management of pain and symptoms were reversed in levels of confidence, however. Males were more confident in managing pain than symptoms whereas for women the reverse was true. However, it should be noted that the means were similar across management dimensions and genders.

Table 3

Item	п	Ņ	SD	Skewness	Kurtosis
			Males	<u></u>	
Fatigue	128	6.69	3.03	-0.50	-0.92
Pain	128	6.59	2.98	-0.46	-0.92
Distress	128	6.72	2.84	-0.42	-0.85
Symptoms	128	6.57	2.96	-0.42	-1.03
Tasks	128	6.69	2.99	-0.48	-0.97
Other	128	6.83	3.06	-0.60	-0.90
		<u></u>	Females		
Fatigue	158	6.60	2.89	-0.45	-0.91
Pain	159	6.37	2.89	-0.37	-0.99
Distress	157	6.47	2.94	-0.31	-1.16
Symptoms	159	6.62	2.92	-0.35	-1.14
Tasks	158	6.58	2.90	-0.35	-1.07
Other	159	6.74	2.96	-0.42	-1.09

Male and Female Descriptive Findings for Items of the Self-efficacy Scale

An independent two sample t-test was used to determine if there was a difference in the mean level of perceived self-efficacy for the genders. The variables met the assumptions for the independent t-test; they are independent, from a normal population, and there are similarities in variance (Levene's test for equality of variance was not found to be significant (p = 0.27)). The t-test was not significant (t = 0.39, df = 285, p = 0.69), suggesting that the null hypothesis is true, there were no differences in the mean level of perceived self-efficacy for males and females.

Exploration of Associated Variables

Because self-efficacy has many modifiers, additional variables were explored. Each of the individual variables can impact a person's level of self-efficacy. Some of the variables may affect physical strength and others emotional strength. Each of these impacts a person's belief that he or she can cope with managing the disease. The variables of HbA_{1c} levels, years diagnosed with diabetes, number of chronic illnesses, and number of family members with diabetes, were similar between genders, as presented in Table 4. The mean HbA_{1c} level was higher for males, but the median HbA_{1c} level was higher for females. Males also had been diagnosed with diabetes a little longer than females as is indicated in the mean and median numbers. The distance between the mean and median years diagnosed is notable for both genders. The distributions are positively skewed, as calculated by the Pearson's skewness coefficient (females 0.40, males 0.36) and noted by the large standard deviations, therefore, the median is a more accurate measurement. Due to skewness in the distribution for the number of chronic illnesses, the median is a more reliable

measure for central tendency and there is no difference in the number of chronic

illnesses for males and females.

Table 4

HbA_{1c} Level, Years Diagnosed, and Number of Chronic Illnesses in Males and

Females

Gender	HbA _{1c}	Years Diagnosed	Number of Chronic Illnesses
	M (SD)	M (SD)	M (SD)
	Mdn	Mdn	Mdn
	· · · · · · · · · · · · · · · · · · ·		
Males	7.24 (2.05)	6.96 (8.06)	1.96 (0.93)
	6.70	4.00	2.00
Females	7.15 (1.97)	6.70 (9.24)	2.13 (1.14)
	6.90	3.00	2.00

In order to explore whether relationships with self-efficacy existed, Pearson correlations were calculated including the variables of total number of years diagnosed with diabetes, number of family members with diabetes, and HbA_{1c} levels. No significant relationships of the variables with self-efficacy were found in the total sample or male and female sub samples. The HbA_{1c} level was closest to significance for the total sample. For males total years with diabetes was closest to being significantly related to self-efficacy. The number of family members with diabetes with diabetes was closest to significance for females. Table 5 presents the results of these analyses.

Table 5

Pearson Correlation Coefficients for Total Diabetes Years (totdmyrs), Number of Family Members with Diabetes (dmfam), HbA_{1c} level to Self-Efficacy

Variable	n	r	p	
		Total Sample		
Totdmyrs	267	-0.06	0.31	
Dmfam	189	0.04	0.55	
HbA _{1c}	285	-0.09	0.11	
		• • • • • • • • • • • • • • • • • • •	 ····	
		Males		
Totdmyrs	123	-0.16	0.09	
Dmfam	79	-0.07	0.57	
HbA _{1c}	128	-0.08	0.37	
			 ······································	
	• • •	Females		
Totdmyrs	144	0.01	0.94	
Dmfam	110	0.26	0.11	
HbA _{1c}	157	-0.11	0.18	

Approximately, 13% of the entire sample reported not having insurance. Because it was thought that a lack of insurance might adversely affect self-efficacy, the variable of insurance coverage was compared with self-efficacy. A t-test, in which equal variances were not assumed, determined that there was no significant difference (t = -0.907, df = 33.341, p = 0.371) in the mean level of self-efficacy for those who had and did not have insurance. Two-way analysis of variance (ANOVA) was used to determine that there were no significant differences in the mean level of self-efficacy by gender or insurance status. The highest Fisher's F ratio was obtained in the analysis by insurance, and there was less of a trend toward significance for gender. There was also no interaction effect. The results of this analysis are shown in Table 6. Table 6

Source	df	F	р	
Gender	1	0.26	0.61	
Insurance	1	1.28	0.26	
Gender x Insurance	. 1	0.08	0.78	

Analysis of Variance for Self-Efficacy by Gender and Insurance Status

Findings of Interest

Several variables may have contributed to the high levels of self-efficacy for the total sample and each gender. Poor physical health can adversely affect selfefficacy. The study sample reported few comorbities (M = 2.05, SD = 1.05), with diabetes being one of them. The overall low frequency of illness may have affected self-efficacy levels positively. There was also a broad range of years (1-61) of living with diabetes. It is impressive that 25 of the participants had diabetes 20 years or greater and had not died from complications. This could impact self-efficacy favorably. The mean HbA_{1c} level was moderate (M = 7.192). The American Diabetes Association goal for management is less than 7.0; the mean level for this sample is close to goal. This suggests the sample had relatively good glycemic control of their diabetes. Approximately 73% of the population checked their sugar at home, which can be interpreted as a sign of self-efficacy for disease management.

Summary of Findings

The level of self-efficacy was high for the undivided sample, in general. The variables of gender and self-efficacy (expressed as a mean) were explored. There was no difference found between genders for their mean levels of self-efficacy. Other variables including years diagnosed with diabetes, family members with diabetes, and HbA_{1c} level were explored. These did not have a significant relationship with self-efficacy. There was also no significant difference in the mean levels of self-efficacy for those with or without insurance, regardless of gender. Gender differences were found in some of the health behaviors. This included the frequency of visiting physicians and checking blood sugars.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Discussion of Findings and the Conceptual Framework

Type II diabetes can be a source of stress on an individual. He or she must cope with this stressor in order to prevent a further decrease in health. Methods of coping include disease self-management tasks such as checking one's blood sugar, exercising, and eating a healthy diet. A person can cope with the stress of the disease by taking steps to manage and stay in control of the disease. Self-efficacy, the belief that one can do something, such as keeping one's blood sugar in control, is a necessity for coping through the management of the chronic disease. Without selfefficacy a person would not believe he or she could cope or carry out positive coping processes. Men and women develop their coping and self-efficacy based on their socialization processes. Socialization may lead to gender differences in coping and self-efficacy. Both self-efficacy and coping can be enhanced through intervention.

This secondary analysis examined Bandura's (1971) concept of self-efficacy, in the context of coping with type II diabetes. The concept of coping was explained by Lazarus (1993). In this study, coping included tasks to manage the diabetes such as visiting a physician and checking blood sugars. As discussed by Bussey and Bandura (1999), the development of gender identity can impact self-efficacy, which is necessary to cope. The research question explored whether the variable of self-

efficacy differed between African American males and females with type II diabetes. In this secondary analysis no evidence was found to support a hypothesis of difference between genders in levels of self-efficacy prior to interventions to enhance this perception. However, previous research (Choi, 2004; Pajares, 2002) found gender differences in self-efficacy. Therefore it is hard to generalize this study's findings to the whole population.

Findings Related to Previous Research

In this analysis, no gender differences in self-efficacy were found. This is contrary to findings of research in the literature review. All of the studies reviewed found gender differences in self-efficacy prior to intervention; the majority showed that women reported lower amounts of self-efficacy. However, these studies were not all related to health behaviors. Brandon (2000) examined student teachers in Botswana and found, prior to practice teaching, males had higher levels of selfefficacy. After practice teaching, males' and females' levels of self-efficacy were equal. Choi (2004) and Pajares (2002) also found gender differences in the academic setting.

Studies relating to health behaviors also found gender differences in levels of self-efficacy. Jackson et al. (2002) found that males had higher levels of self-efficacy for pain tolerance. Trost et al. (1996) suggested males had higher levels of self-efficacy for physical activity. Meekers and Klein (2002) found that in Cameroon males had more self-efficacy for using condoms, whereas Marin et al. (1998) studied a Latino population and found women to have higher levels of self-efficacy for pre-

intervention levels of self-efficacy and the majority suggested males had greater amounts.

Overall, the current study's sample had high levels of self-efficacy which would be expected to increase disease self-management, as discussed in the literature (Aljasme et al., 2001; Senecal 2002). A high numbers of participants reported they checked blood sugars, which may be an indicator of greater self-management. The sample as a whole reported high confidence that they did not allow the disease to interfere with their life. The frequent report of higher levels of confidence for the self-efficacy scale in this sample could have played a role in the inability to find gender differences.

The African American culture may have played a role in the lack of differences as well. As discussed in the literature, African American women often play powerful roles where they are the head of the household (Carter-Edwards et al., 2004). When women are in more powerful roles in their culture they often display more powerful emotions (Fisher et al., 2004), and it is possible this could be true for self-efficacy as found in this secondary analysis.

As discussed previously, women are more prone to cope through emotionally focused coping such as social support (Day & Livingstone, 2003). In this analysis it was found that females discussed their personal problems with their doctor more than males. As in the literature, there were gender differences in a health promoting behavior (Gernigon et al., 2003; Trost et al., 1996). Males reported checking their blood sugar more frequently than females.

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Limitations of this Study

The results of the study are limited in their ability to be generalized to the whole African American population with type II diabetes. The majority of the small sample was from the same socioeconomic level and educational level. The sample was from a small city in western Michigan where the culture of the African Americans may be different from other geographic locations. The way these individuals cope with diabetes may be different than in other regions. A greater economic, educational, and geographic distribution from multiple cities and states may have allowed generalization of the results to the wider population of African Americans with diabetes. Lacking this, the findings may be limited to samples displaying higher self-efficacy scores. The sample was biased in that it was also likely there were individuals in the area who did not have the opportunity to learn about the class. Possibly a certain neighborhood or area of the city was overrepresented.

An additional weakness of the study might include limitations in the cultural and gender sensitivity of the questionnaires. The questionnaires were not designed specifically for African Americans. If they had been, the results may have produced significantly different results.

It is plausible that there would be varying interpretations of the items on the questionnaires by individuals from different cultures. Also, there was no specific measurement to determine gender socialization. The characteristics commonly attributed to male and female gender were based primarily on biological factors. The review of literature suggested that gender identity and responses are based on socialization (Sigmon et al., 1995). Perhaps greater gender differences would have

been found if gender socialization was determined and used as the basis for dividing the sample for group analysis.

The self-efficacy questionnaire was not specific for diabetes. One of the main concepts of social cognitive theory is outcome expectancy, the belief that a specific behavior could bring about a desired outcome (Bandura, 1977). The other main concept is efficacy expectation which focuses on a specific action to produce a certain result. The purpose of self-efficacy is to explain and predict changes achieved by intervention in order to achieve desired outcomes (Bandura, 1977). The measurement of self-efficacy and its outcome need to be specific. If the individuals were questioned about their confidence for specific self-management tasks such as checking blood sugar, exercise, and keeping the diabetic diet, the mean levels of self-efficacy may have differed. Possibly, self-efficacy tools can be more predictive of outcomes when they are measuring task-specific self-efficacy. Previous research has found gender differences when measuring for specific tasks such as physical activity (Gernigon et al., 2003, Trost et al., 1996), pain tolerance to cold water (Jackson et al., 2002), and condom use (Marin et al., 1998, Meekers & Klein, 2002).

In examining the contributing variables to self-efficacy there is an additional limitation. Although the HbA_{1c} levels of this study were above goals for glycemic control, they may have been improved compared to the participants' past measurements. A lack of historical data on previous HbA_{1c} levels leaves this to speculation.

The threats to internal validity for this study include maturation and mortality (Polit & Beck, 2004). Over the course of time, in volunteering to participate and take

the pre-test, there may have been changes in participant status in the parent study. Not all of the participants took the survey at the time they volunteered; some were surveyed later. The participants may have matured by learning new information about their disease process, therefore increasing their self-efficacy for coping; possibly affecting their answers to the questions.

The threats to external validity for the study included expectancy effects, novelty effects, interaction of history and treatment, and measurement effects (Polit & Beck, 2004). Expectancy effects can alter how the subjects completed the surveys; they may have graded themselves in certain ways because they knew they were being surveyed. This provides an explanation for the overall high scores on the self-efficacy scale. Additionally, in analyzing gender differences it has been shown that men and women will report behavior or opinions based on socialization, rather than actuality of occurrence (Sigmon et al., 1995).

A final limitation is the novelty effect on participants because the intervention of the parent study was new to them. They may have reported based on reactions to the new idea of having chronic illness management classes. Their responses may have been different if the classes were more familiar. These effects could not be controlled for the secondary analysis because the data were taken from surveys completed in the parent study.

Implications

The conceptual frameworks and review of literature discussed the need for self-efficacy to cope and manage the adjustment of living with a chronic illness, such as diabetes. Diabetes impacts all areas of a person's life and can lead to complications and further distress. Men and women, and people of various cultures cope and possess self-efficacy to different degrees and in varied ways. Diabetic teaching and nursing interventions need to be specific to the person's cultural needs based on gender and ethnicity. In order for this to occur, nurses must be educated about the specific needs of African Americans to provide better care for them.

One example of an unique cultural need is as pointed out in the literature review. Family is an important structure in many African American societies and should be considered in planning care and education for the patient. When care is specific to a person's needs it will enable him or her to be more receptive of the care received and ensure its appropriateness to his or her individual cultural, economical, and social situation. In the literature, women were found to use more social support to cope than men. Nurses could use this information to plan education and intervention in a diabetic support group for women. Men generally cope more through problemsolving. Nurses could collaborate with male patients and use problem-solving skills in order to plan ways for them to manage their diabetes.

In order to prevent racism and bias, one must incorporate cultural sensitivity into both practice and administrative levels of patient care. It is important that administration ensure that practice protocols incorporate cultural needs and that the staff be educated of the possible needs of the African Americans for whom they provide care. When a person receives care and education that is relevant to his or her situation, then he or she will be more empowered for diabetes self-management.

Recommendations for Further Research

There continues to be a need for research in ways to increase self-efficacy for African Americans with type II diabetes. In spite of the high mean level of selfefficacy found in the current study, the glycemic control of the sample was still slightly above the ADA goal. The ADA goal was set in order to decrease complications, such as renal failure and heart disease. Improvement in diabetes management can occur by increasing peoples' beliefs that they can make the necessary life-style changes needed to manage their disease.

It will still be necessary to explore gender differences in other samples and populations in order to see if future research is consistent with this study's finding. The literature review suggests that gender differences are important. Although this secondary analysis did not reveal gender differences in self-efficacy, men and women may still benefit from specific interventions for increasing self-efficacy. In the literature, levels of self-efficacy varying by gender equalized after intervention in the academic setting and in healthcare settings (Brandon, 2000; Jackson et al., 2002). Self-efficacy is significantly related to one's sex-role orientation (Choi, 2004).

Future research using a self-efficacy measure specific to diabetes selfmanagement skills may find differences in gender. If gender differences are found, specialized gender-sensitive intervention can be planned. Additionally, using a diabetes specific tool that questions confidence for certain tasks such as checking blood sugar, taking oral medications, taking insulin, eating the diabetic diet, performing foot exams and exercise, could assist in the planning of task specific interventions.

In this study, the relationship between frequency of visiting the doctor and self-efficacy was not explored. Females were found to have visited their health care provider more frequently than males. Equivalent levels of self-efficacy between men and women may have resulted from women using health care providers as a form of social support. Social support usage is a form of coping. Positive social support can lead to increased self-efficacy.

Considering the parent study, additional research could be performed with the sample to explore whether gender differences in self-efficacy and glycemic control existed post-intervention. The sample could be revisited at a later date to determine if there is continued improvement. In addition, the use of a self-efficacy tool specific for diabetes would be more likely to capture the self-management skills linked to glycemic control.

As discussed in the introduction to this study, African Americans have higher rates of diabetes, as well as complications and death. Current studies show that disease self-management courses, as in the parent study, are beginning to make a difference in decreasing these disparities; self-management courses are providing the tools needed to improve health behaviors, increase health, decrease the need for hospitalizations, and maintain glycemic control. However, further research is needed to find additional remedies to decrease the disparities.

Approximately 63% of African American men and 77% of African American women are obese (American Heart Association, 2005). Obesity is a primary cause of type II diabetes. Studies of activities to prevent the development of diabetes in African Americans are needed. The effectiveness of teaching life-style modifications such as diet and exercise is a possible focus. Not only are studies needed exploring disease prevention, but also testing culturally appropriate education, questionnaires, researchers, and clinicians. More research can help the health care community learn how to be culturally responsive and attentive to gender differences when providing care to African Americans with type II diabetes.

Summary

Type II diabetes is a chronic disease that alters a person's quality of life. In order to effectively manage the disease a total lifestyle change must be made. If the disease is not managed properly it can lead to serious complications, which can further decrease a person's physical, psychological, and social health.

African Americans suffer from higher rates of the disease and its complications. This is an unequal burden that in spite of its numerous causes, must be relieved. Research and interventions are needed to help solve the problem.

This analysis looked at the relationship between the level of self-efficacy and gender. This secondary analysis did not find gender differences in self-efficacy or low levels of self-efficacy for the sample population. Further research is needed to examine other causes for stress and diabetes complications. Some possible variables include coping skills, social support, health promoting behaviors, and cultural and gender identities.

The review of literature suggested self-efficacy is linked to better adjustment to a chronic illness (Kuijer & DeRidder, 2003), which can result in improved disease management and decreased complications (Rose et al., 2002). Therefore, one way to solve the problem is to find methods of increasing self-efficacy for disease self-

management. In order to adjust to disease and decrease complications, a person must possess self-efficacy to make the necessary life-style changes. The theoretical framework provided an understanding of the tools needed for a person to manage his or her diabetes.

People must possess self-efficacy to cope with the stress of diabetes. The socialization process towards masculinity or femininity can affect identity and self-efficacy. The review of literature demonstrated that different genders cope differently and possess differing amounts of self-efficacy. Culture and gender also impact self-efficacy and disease management. Although this secondary analysis did not demonstrate a difference between genders in the mean level of self-efficacy, it added to research on African Americans with diabetes. Based on the review of literature, future research and intervention should consider gender differences in self-efficacy. Further research in various settings considering social roles and disease management should be conducted. The health care community must attend to culture and gender when planning care for African Americans, in order to help decrease the health disparities that currently exist.

APPENDICES

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Appendix A



June 15, 2005

Dear Dr. Reitemeier and Members of the Human Research Review Committee,

This letter is to confirm that as the principal investigator for the research study originally titled, "Utilization of a Chronic Disease Self-Management Program to Improve Health Outcomes for African-Americans with Diabetes: A Muskegon Community-Based Project", I have given Haley Shead, a student in the MSN program in Kirkhof College of Nursing, permission to perform a secondary analysis of data collected in the original study.

In preparation for her secondary analysis, Haley has completed the Citi Program training, and is attaching copies of her completion certificate. She also has documents verifying that the original study was approved by the GVSU HRRC.

Please do not hesitate to contact me with any further questions.

Sincerely,

Cynthia P. Coviak, Ph.D., R.N. <u>coviakc@gvsu.edu</u> 331-7170

Appendix B

(Consent used when Dr. Coviak became principal investigator)

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

UTILIZATION OF A CHRONIC DISEASE SELF-MANAGEMENT PROGRAM TO IMPROVE HEALTH OUTCOMES FOR AFRICAN AMERICANS WITH TYPE 2 DIABETES: A MUSKEGON COMMUNITY-BASED PROJECT

I understand that this study is being conducted to determine if a chronic disease selfmanagement education program will help African American women and men with type 2 diabetes mellitus, and with any other chronic diseases present, to improve their health status and reduce the need for health services. The knowledge gained is expected help nurses, doctors, and others improve the care of African Americans with diabetes or other chronic diseases.

To participate in the study, I agree to the following:

- 1) answer questionnaires at the beginning and upon completion of the study about myself, my health, and the use of health care services;
- have two (2) finger stick blood tests (1 in the beginning and 1 upon completion) that report control of my blood sugar for the past 3-4 months, at no cost to me;
- 3) attend six (6) 2-1/2 hour self-management education classes in Muskegon to help me improve managing my chronic disease (s);
- 4) be required to get approval from my health care provider or doctor before participating in exercise, if I have not exercised before;
- 5) track how much time I spend on activities such as exercises or walking;
- 6) be randomly assigned to one of two groups. I will not have a choice about which group to select. Group one, also called the experimental group, will start the chronic disease education classes about a week after having the first blood test done. Group two, also called the control group, will start the same classes six months later.

I also understand that:

- 1) I have been selected for participation because I am African American and have type 2 diabetes.
- 2) It is not expected that this study will lead to physical or emotional risk to myself.

- 3) The information I provide will be kept strictly confidential and the data will be coded so that identification of individual participants will not be possible. All questionnaires will be kept in the researcher's office in a locked file and will be destroyed at the end of the study. Computer files using codes for questionnaire identification will be saved for education purposes.
- 4) I will be given \$15.00, after the last blood test, for participating in this study. Transportation to and from the blood tests and classes, will be provided if I need them.

I will also keep the textbook that is used in the education classes.

5) The results of the blood tests will be made available to me.

I acknowledge that:

"I have been given an opportunity to ask questions regarding this study, and that these questions have been answered to my satisfaction."

"In giving my consent, I understand that my participation is voluntary and that I may withdraw at any time."

"I hereby authorize the investigator, Carmen Eribes, to release information obtained in this study to scientific literature. I understand that I will not be identified by name."

If I have further questions, I may call Carmen Eribes collect, at (520) 240-2312. A second researcher who is providing back-up for Dr. Eribes is Cynthia Coviak, who can be contacted at Grand Valley State University at (616) 331-7170. I can also call Paul Huizenga, chairperson of the Grand Valley State University Human Research Review Committee at 616-331-2472.

I acknowledge that I have read and understand the above information, and that I agree to participate in this study. I will be given a copy of this consent to keep.

Participant's Signature_____ Date_____

Witness_____
Date_____

Appendix C

(Original Consent)

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

I understand that this study is being conducted to determine if a chronic disease selfmanagement education program will help African American women and men with type 2 diabetes mellitus, and with any other chronic diseases present, to improve their health status and reduce the need for health services. The knowledge gained is expected help nurses, doctors, and others improve the care of African Americans with diabetes or other chronic diseases.

To participate in the study, I agree to the following:

- 7) answer questionnaires at the beginning and upon completion of the study about myself, my health, and the use of health care services;
- 8) have two (2) finger stick blood tests (1 in the beginning and 1 upon completion) that report control of my blood sugar for the past 3-4 months at no cost to me;
- 9) attend six (6) 2-1/2 hour self-management education classes to help me improve managing my chronic disease (s);
- 10) be required to get approval from my health care provider or doctor before participating in exercise, if I have not exercised before;
- 11) track how much time I spend on activities such as exercises or walking;
- 12) be assigned to one of two groups, and I will not have a choice about which group to select. The first group will start the chronic disease education classes about a week after having the first blood test done. The second group will start the same classes six months later.

I also understand that:

- 6) I have been selected for participation because I am African American and have type 2 diabetes.
- 7) It is not expected that this study will lead to physical or emotional risk to myself.
- 8) The information I provide will be kept strictly confidential and the data will be coded so that identification of individual participants will not be possible. All questionnaires will be kept in the researcher's office in a locked file and will

be destroyed at the end of the study. Computer files using codes for questionnaire identification will be saved for education purposes.

9) I will be paid \$15.00, after the last blood test, for participating in this study. Transportation to and from the blood tests and classes, will be provided if I need them.

I will also keep the textbook that is used in the education classes.

10)The results of the blood tests will be made available to me.

I acknowledge that:

"I have been given an opportunity to ask questions regarding this study, and that these questions have been answered to my satisfaction."

"In giving my consent, I understand that my participation is voluntary and that I may withdraw at any time."

"I hereby authorize the investigator, Carmen Eribes, to release information obtained in this study to scientific literature. I understand that I will not be identified by name."

If I have further questions, I may call Carmen Eribes at 616-771-6812 or collect, at

616-742-5692. I can also call Paul Huizenga, chairperson of the Grand Valley State University Human Research Review Committee at 616-895-2472.

I acknowledge that I have read and understand the above information, and that I agree to participate in this study. I will be given a copy of this consent to keep.

Participant's Signature_____

Date

Witness_____ Date

Appendix D

		ID #
	Health Information	
1. Please place a check below next	to the chronic condition(s) yo	ou have:
Diabetes High blood	pressure Asthma	Emphysema or COPD
Other lung disease	Type of lung disease:	
Heart disease	Type of heart disease:	
Arthritis or other rheumatic	disease	
	Type of arthritis/rheumati	ic:
Cancer	Type of cancer:	
Other chronic condition	Specify:	

Background Information

Instructions: Please mark only one answer for each question or fill in the blank.

1. What is your sex? (check one)

 (1)	Male
 (2)	Female

- 2. What is your age at your last birthday? _____ years
- 3. What is your marital status?
 - (1) Single
 - (2) Married or have domestic partner
 - ____(3) Separated
 - ____(4) Divorced
 - (5) Widowed
- 4. How many years of education have you completed? (please check one)
 - (1) no education in schools
 - (2) 1-4 years
 - (3) 5-8 years
 - (4) 9-12 years
 - ____(5) earned GED
 - _____(6) Trade school
 - (7) University
- 5. What is your income per year? (check one)
 - (1) less than \$4,999
 (2) between \$5,000 and \$9,999
 (3) between \$10,000 and \$14,999
 (4) between \$15,000 and \$19,999
 (5) between \$20,000 and \$29,999
 (6) between \$30,000 and \$39,999
 (7) between \$40,000 and \$49,999
 - (8) \$50,000 or more.
 - 6. Do you have a doctor or health care provider that you see on a regular basis? (1) Yes (2) No

7. How many times have you seen your doctor or health care provider in the past 12 months?

8. How long have you had diabetes? _____ months OR _____ years

- 9. How old were you when you were diagnosed with diabetes? _____ years
- 10. Is there a history of diabetes in your family? (please check one)

(1) Yes (2) No

_____(3) I don't know

11. If your answer to question number 10 is yes, how many other family members or relatives have diabetes?_____

12. Do you have insurance for medical care? (please check one)

- (1) Yes (2) No
- 13. What type of insurance do you have (check all those applicable to you)
 - _____ (1) No insurance
 - _____(2) Medicare
 - _____(3) HMO,
 - ____(4) Medicaid
 - _____(5) Private insurance
 - (6) Other (write the name in, if known: _____)

If you do have insurance,

14. Does it cover doctor bills? (please check one)

- (1) Yes, all
- _____(2) Some are covered
- ____(3) No
 - (4) I don't know

15. Does it cover diabetes medicines? (please check one)

(1) Yes, all of the medicines

- (2) Some medicines are covered
- ____(3) No
- _____(4) I don't know

16. Does it cover diabetic supplies? (please check one)

(1) Yes, all

(2) Some are covered

(3) No

(4) I don't know

17. Does it cover emergency care? (please check one)

 (1)	Yes, all
(2)	Some are covered

(3) No

(4) I don't know

18. Does it cover hospitalization costs? (please check one)

(1)	Vac	aľ
 (1)	165,	aı

____(2) Some are covered

____(3) No

(4) I don't know

19. Does it cover laboratory tests? (please check one)

____(1) Yes, all

____(2) Some are covered

(3) No (4) I don't know

20. What is your height in feet and inches?

feet and _____ inches I don't know

21. What is your weight?

_____ pounds (lbs.) I don't know

22. Have you been told by a health care provider to check your blood sugar at home? (1) Yes (2) No

23. Do you check your blood sugar at home? (1) Yes (2) No

24. If you do not check your blood sugar, why not?

Appendix E

Confidence About Doing Things

For each of the following questions, please <u>circle</u> the number that corresponds with your <u>confidence</u> that you can do the tasks regularly at the present time.

How confident are you that you can...

1.	Keep the fatigue caused by your		•							•			
	disease from interfering with the things you want to do?	not at all confident	1	 2	 3	 4	 5	 6	 7	 8	 9	 10	totally confident
2	Keen the physical discomfort or												
<i>4</i> .	pain of your disease from inter- fering with the things you want to do?	not at all confident	 1	 2	 3	4	5	6	 7	8	 9	 10	totally confident
	10 40.									•			
3.	Keep the emotional distress caused			-									
	by your disease from interfering with the things you want to do?	not at all confident	1	2	3	1 4	5	6	 7	8	 9	 10	totally confident
4.	Keep any other symptoms or health												
	problems you have from interfering with the things you want to do?	not at all confident	1	2	3	4	5	6	 7	8	9	 10	totally confident
5.	Do the different tasks and activities			page diseased from			****						
	needed to manage your health condition so as to reduce your need to see a doctor?	not at all confident	 1	2	3	4	5	6	 7	 8	 9	 10	totally confident
6	Do things other than just taking medication to reduce how much your illness affects your everyday life?	not at all confident	1	 2	. 3	1 4	5	 6	1	 8	9	 10	totally confident

Appendix F



Self-Efficacy for Managing Chronic Disease 6-Item Scale

We would like to know *how confident* you are in doing certain activities. For each of the following questions, please choose the number that corresponds to your confidence that you can do the tasks regularly at the present time.

1. How confident are you that you can keep the fatigue caused by your disease from interfering with the things you want to do?

Not at all	1	2	2	1	5	6	7	Q	0	10	Totally
confident	1	4	5	7	5	U	, 1 .	0	2	10	confident

Items (using the same format as above):

- 1. How confident are you that you can keep the fatigue caused by your disease from interfering with the things you want to do?
- 2. How confident are you that you can keep the physical discomfort or pain of your disease from interfering with the things you want to do?
- 3. How confident are you that you can keep the emotional distress caused by your disease from interfering with the things you want to do?
- 4. How confident are you that you can keep any other symptoms or health problems you have from interfering with the things you want to do?
- 5. How confident are you that you can do the different tasks and activities needed to manage your health condition so as to reduce you need to see a doctor?
- 6. How confident are you that you can do things other than just taking medication to reduce how much you illness affects your everyday life?

Scoring

The score for each item is the number circled. If two consecutive numbers are circled, code the lower number (less self-efficacy). If the numbers are not consecutive, do not score the item. The score for the scale is the mean of the six items. If more than two items are missing, do not score the scale. Higher number indicates higher self-efficacy.

Characteristics

Tested on 605 subjects with chronic disease.

No. of	Observed	Mean	Standard	Test-Retest	
items	Range		Deviation	Reliability	
6	1-10	5.17	2.22	.91	NA

Source of Psychometric Data

Stanford/Garfield Kaiser Chronic Disease Dissemination Study. Psychometrics reported in: Lorig KR, Sobel, DS, Ritter PL, Laurent, D, Hobbs, M. Effect of a self-management program for patients with chronic disease. *Effective Clinical Practice*, 4, 2001,pp. 256-262.

Comments

This 6-item scale contains items taken from <u>several SE scales</u> developed for the Chronic Disease Self-Management study. We use this scale now, as it is much less burdensome for subjects. It covers several domains that are common across many chronic diseases, symptom control, role function, emotional functioning and communicating with physicians. For internet studies, we add radio buttons below each number. There is another way that we use to format these items, which takes up less space on a questionnaire, shown in the PDF document (see PDF link at the bottom of this page). A 4-item version of this scale available in <u>Spanish</u>.

References

Lorig KR, Sobel, DS, Ritter PL, Laurent, D, Hobbs, M. Effect of a self-management program for patients with chronic disease. *Effective Clinical Practice*, 4, 2001,pp. 256-262.

To download this scale and scoring instructions, right click the link below with your mouse and "Save as" to you hard disk or desktop (for Windows), or double click (Mac): <u>Download PDF version</u>

Appendix G

June 28, 2005

Haley Shead 5644 Bayberry Farms DR SW Grandville, MI 49418

RE: Proposal #05-264-H

Dear HAley:

Your proposed project entitled Gender Differences in the Self-Efficacy of African-Americans with Diabetes type 2: A Secondary Analysis of a Chronic Disease Self-Management Program has been reviewed. It has been *APPROVED* as exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January 26, 1981.

I would also like to make some suggestions. On the first page, second paragraph, the first sentence should read: "There is a scarcity of research on diabetes in African American populations." Also, on Question 5C: use the word "may" instead "will" or "should" because you cannot guarantee benefits.

Sincerely,

Amy Masko, Acting Chair Human Research Review Committee

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