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Relationships between social connectedness and spirituality on development of depression and perceived health status in rural populations

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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

RELATIONSHIPS BETWEEN SOCIAL CONNECTEDNESS AND
SPIRITUALITY ON DEVELOPMENT OF DEPRESSION
AND PERCEIVED HEALTH STATUS
IN RURAL POPULATIONS

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

Ann P. Galloway

College of Natural and Health Sciences
School of Nursing
PhD in Nursing Education

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This Dissertation by: Ann P. Galloway

Entitled: *Relationships between Social Connectedness and Spirituality on Development of Depression and Perceived Health Status in Rural Populations*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in College of Natural and Health Sciences in School of Nursing, Program of Nursing Education.

Accepted by the Doctoral Committee

Melissa Henry, PhD, RN, FNP, Research Advisor

Faye Hummel, RN, PhD, Committee Member

Peg Rooney, RN, PhD, Committee Member

Linda Lohr, PhD, Faculty Representative

Date of Dissertation Defense: June 10, 2013

Accepted by the Graduate School

Linda L. Black, Ed.D., LPC
Acting Dean of the Graduate School and International Admissions

ABSTRACT

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Determinants of health are factors which impact an individual's health and include the social, economic and physical environments as well as personal characteristics and behaviors according to the World Health Organization and Healthy People 2020. Social determinants of health include socioeconomic conditions, social norms, social support and social interactions. Social support and social interactions relate to how connected an individual feels to friends, family and others in the community. Social connectedness and spirituality are two resources which impact physical, mental and social well-being. These social determinants have a strong impact on health, but are not often examined when looking at the overall health of an individual.

Vulnerable populations are groups who because of lack of needed resources and increased risk factors are at higher risk of adverse physical, mental and social health outcomes. Rural populations are considered vulnerable populations due to higher number of risk factors and fewer resources than more urban areas. Lack of social resources in rural populations may include social isolation, lack of social support or social interactions.

The purpose of the research study was examination of the relationships between social connectedness and spirituality on the level of self-reported depression and perceived health in rural populations. Four hypotheses looked at the relationship between

each independent variable (social connectedness and spiritual perspective) with each dependent variable (self-reported depression and perceived health) while controlling for age, gender, income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.

A quantitative, correlational study was conducted using hierarchical multiple regression analyses. A convenience sample of rural residents in a county in western Colorado was asked to complete a health questionnaire asking about their level of social connectedness, spiritual perspective, depression and how they perceived their health.

Statistical results supported the two of the four hypotheses relating to social connectedness. Social connectedness was found to positively predict perceived health and negatively impact the level of self-reported depression. The more socially connected a person felt, the better they perceived themselves as physically and mentally healthy based on the health and well-being scale and the less depressive symptoms were reported as measured by the depression scale. Spiritual perspective was not found to significantly predict either self-reported depression or perceived health.

The study's findings point out many implications for nursing, health care providers and rural community leaders as well as future research needs. Understanding how these social resources impact self-reported depression levels and perceived health of rural residents is vital to better understand the full complexity of health and disease of these individuals.

Keywords: social connectedness, spiritual perspective, spirituality, depression, health, rural populations, vulnerable populations, social determinants of health.

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CHAPTER I

INTRODUCTION

Rural communities in America comprise 19.3 percent of the United States population (United States Bureau of Census, 2010). These communities are diverse in demographic, economic, environmental and social characteristics. Rural populations vary from urban areas in relation to population density, cultural norms, and remoteness. Rural communities also differ from urban areas in health care needs, resources, and access which can lead to increased vulnerability for developing poorer health outcomes for many rural residents (Institute of Medicine, 2005).

Vulnerable populations are “social groups who have an increased susceptibility to adverse health outcomes” (Flaskerud & Winslow, 1998, p. 69). Due to social, cultural, geographic and economic characteristics, vulnerable populations are not well integrated into the health care system (Urban Institute, 2010). Vulnerability is influenced by the available community and individual resources and potential risks to physical, mental, and social health (Aday, 1994, 2003).

Rural populations can be considered vulnerable due to higher numbers of risk factors as well as a potential lack of needed resources found in these communities (Institute of Medicine, 2005; Leight, 2003). Rural areas tend to be made up of older populations with more chronic diseases and disabilities and populations with higher rates of health risk factors such as obesity, smoking, substance abuse, lack of physical activity

and fewer preventative health practices (Institute of Medicine, 2005; Leight, 2003). A majority of rural communities lack vital health care resources due to difficulty recruiting health care professionals, geographic distance which limits access to health care services and lack of health care insurance. Social resources may be compromised in rural inhabitants as well. The lack of resources and the number of risk factors in rural communities increase the risk of poor physical, mental, and social health outcomes (Aday, 1994, 2003).

In the United States, the primary focus has been on finding solutions designed to address individual health risk behaviors and the quality and availability of health care services. The United States spends a larger proportion of the nation's economy on advancing the technology of health care than other developed countries in the world. Despite this greater expenditure, the United States ranks below the majority of these countries in terms of life expectancy and infant mortality rates (National Center for Health Statistics, 2011).

An individual's health status is also reliant on social determinants of health such as poverty, isolation, unemployment, lack of education and social support (Barr, 2008). Investigating the social determinants of health is important to gain understanding of disparities in health status (Marmot, 2005). The lack of social resources of a population can impact health as much as the lack of environmental or material resources (Barr, 2008).

Social resources include concepts like social status, human and social capital (Flaskerud & Winslow, 1998). Social status refers to the position an individual occupies

in society. Age, gender, race and ethnicity impact social status. A low social status increases an individual's vulnerability to poor health outcomes (Aday, 2003).

Human capital refers to an individual's skills and capabilities which influence their contribution to society. Level of education, employment opportunities and income all influence the amount of human capital a person has (Aday, 2003). If a community has substandard schools, the opportunities for employment are limited and thus income levels are low. A higher level of education attainment leads to higher-status occupations with higher levels of income. As an additional benefit, these higher level occupations tend to provide health insurance and thus decrease vulnerability to poor health outcomes due to lack of access (Shi & Stevens, 2005).

Social capital concerns the relationships an individual has in the community between friends, family and neighbors. Social capital and social connectedness are related concepts. Both involve the "quantity and quality of interpersonal ties among people" (Aday, 2003, p. 6). These ties provide a sense of trust, belonging and social identity. Research has shown that individuals with poor social connectedness are more vulnerable to poorer health outcomes (Person, Bartholomew, Addiss, & van den Borne, 2007; Mitchinson, Kim, Geisser, Rosenberg, & Hinshaw, 2008).

Spirituality is another social resource that is closely related to social connectedness. Connectedness is a defining characteristic of spirituality and refers to connectedness to a higher being, self, nature or others (Campbell, Yoon, & Johnstone, 2010; Stranahan, 2001; Vance, 2001). Faith communities offer individuals opportunities to develop relationships with others as well as with a higher being and self. These

relationships in spiritual environments can provide a sense of trust and belonging as well as a social identity (Krause & Bastida, 2011).

Even though it is known that the lack of social resources lead to poor health outcomes (Institute of Medicine, 2005, Leight, 2003), there has been little research exploring the effect of the resources of social connectedness and spirituality in rural populations. These social resources are known contributors to mental and physical health in other settings (Ashida & Heaney, 2008; Cacioppo & Hawkley, 2003; Hill, 2006; Chester, Himburg, & Weatherspoon, 2006; Jesse, Walcott-Mcquigg, Mariella, & Swanson, 2005; Jesse & Reed, 2004; Daaleman, Cobb, & Frey, 2001), but the link between them and health outcomes in rural populations has not been explored thoroughly.

Background of the Study

Many factors affect the health of communities and individuals. These factors are known as determinants of health and include the state of the environment, where people live, genetics, socioeconomic factors such as income, education and occupation, and relationships with others. These factors impact health considerably more than commonly thought of aspects such as individual characteristics or behaviors, access to health care and quality of health care services (World Health Organization, 2012a).

According to Healthy People 2020, the determinants of health are personal, social, economic and environmental factors that influence health status. Determinants of health help answer the question: “what makes some people healthy and others unhealthy?” (United States Health and Human Services, 2011, para. 1). The Healthy People 2020 objectives address the relationships between health status and individual behaviors, social

factors, health services, biology and health policies. The relationships between these factors determine individual and community health.

Social determinants of health involve the circumstances in which people live, grow, and work. Social circumstances are determined by distribution of resources, money and power. Examples of social determinants include social norms, socioeconomic conditions, educational and job opportunities, social support and social interactions (United States Health and Human Services, 2011).

Social determinants of health are the primary cause of health inequities according to the World Health Organization (2012b). Health inequities are defined as “avoidable and unfair differences in health status” (World Health Organization, 2012b, para. 1). The Commission on Social Determinants of Health was created to investigate what could be done to foster health equity and promote a global movement to achieve it (Marmot, Friel, Bell, Houweling, & Taylor, 2008). The Commission came up with three principles of actions: “1) to improve the conditions of daily life, 2) tackle the inequitable distribution of power, money and resources, and 3) measure and understand the problem and assess the impact of action” (Marmot et al., 2008, p. 1661). One of the conclusions made by the Commission was for health equity to be assured; communities must be socially cohesive, ensure basic access to goods, be designed to promote physical and psychological well-being, and protect the natural environment (Marmot et al., 2008).

Social cohesion is defined as “the networks, norms, and trust that brings people together to take action”. Social cohesion is the “glue that binds people together” (Lavis & Stoddart, 2003, p. 122). The definition of social cohesion is very similar to the definition of social connectedness. Socially cohesive or socially connected communities

appear to provide protective health benefits to the residents of such communities. One example cited in the literature is the town of Roseto, Pennsylvania. In late 1960, Roseto and a neighboring town of similar characteristics were compared based on the number of civic organizations and the rate of death from heart disease. The number of civic organizations in the neighboring town was less than half per capita of Roseto's and the rate of death from heart disease in the neighboring town was double Roseto's rate of heart disease despite similarities in the rates of smoking, obesity and sedentary lifestyle. Over the next few decades, as the number of civic organizations and other social institutions decreased in the town of Roseto, the rate of death from heart disease increased until it was similar to that of the neighboring town (Bruhn & Wolf, 1979; Wolf & Bruhn, 1992).

While the Commission on Social Determinants of Health primarily focused on urban areas, the authors specifically noted "relief of pressure of migration to urban areas and equity between urban and rural areas requires sustained investment in rural development, addressing the exclusionary policies and processes that lead to rural poverty, landlessness, and displacement of people from their homes" (Marmot et al., 2008, p. 1663). Rural public health policies to reduce disease and improve physical, mental, spiritual and social health will only succeed when the social determinants of health are addressed as well (Marmot, 2005).

Social Connectedness

Social connectedness is a basic human need and a multi-dimensional concept found in sociology, psychology, health policy, and nursing literature. The American Heritage Dictionary (2012) defines connectedness as "the state of being connected". Lee

and Robbins (1998) define it as “the subjective awareness of being in close relationship with the social world” (p. 338). Hagerty, Lynch-Sauer, Patusky, and Bouswema (1993) described the state of connectedness as occurring “when a person is actively involved with another person, object, group, or environment, and that involvement promotes a sense of comfort, well-being and anxiety-reduction” (p. 293). Social connectedness refers to the overall quantity and quality of relationships that individuals experience (Mitchinson et al., 2008). It reflects a “self-evaluation of the degree of closeness between the self and other people, community and society at large” (Lee, Dean, & Jung, 2008, p. 415).

A sense of connectedness incorporates a sense of trust, a sense of belonging, and a social identity. An individual’s perceptions, thoughts, and emotions are affected by the level of social connectedness and as a result, the individual’s actions in the social world are also affected. Lee and Robbins (1998) postulated that a person with a high level of social connectedness may easily manage relationships in social situations. There appears to be an internally focused component of social connectedness as well as a more relational component that emphasizes the interpersonal connection with other individuals and systems.

Social capital is related to social connectedness and “resides in the quantity and quality of interpersonal ties among people” (Aday, 2003, p. 6). The ties provide a sense of trust, belonging, and social identity. These characteristics are valuable in that they provide resources for the individual to use to achieve other goals. An example of social capital would be the situation of a single mother needing a child care provider so she can work or go to school to improve her socioeconomic level. Having family, friends or low

cost child care services in the community provides the resource she needs to improve her social status and human capital.

Social capital or social connectedness serves as a resource for physical, psychological and social well-being. Individuals with low social connectedness are at higher risk for vulnerability to poor health outcomes due to decrease social resources (Flaskerud & Winslow, 1998; Aday, 1994, 2003). Investigating the social relationships in a vulnerable population like rural communities can aid in understanding how this resource impacts the health status of the individual and the community.

Spirituality

Spirituality is an abstract concept that is personal, subjective and unique to the individual. Miller and Thoresen (2003) state spirituality is “multidimensional and a latent construct” (p. 28). Questions raised by the study of spirituality encompass issues concerning the meaning and purpose of life, transcendence, and connectedness with others or with a Higher Being (Vance, 2001). Carroll (2001) explains connectedness as a component of spirituality that “is associated with being in touch with self, others, God, and the universe” (p. 89). Connectedness can refer to connectedness to self, to others, to a higher power, the universe, God, nature, or a combination of all (Campbell et al., 2010; Stranahan, 2001; Vance, 2001).

The connectedness in spirituality can also relate to a sense of trust and belonging. Faith communities afford a sense of belonging to its members and offer many people a sense of identity by providing a safe, loving and trusting environment. However, not all faith communities provide these benefits to their members. Some may cause feelings of

guilt, unworthiness, and isolation if members are unable to conform to the dogma of the religion (Krause & Bastida, 2011).

Spiritual perspective. Spirituality is regarded as a social resource for individuals. However, spirituality is an abstract concept that is difficult to understand. Spiritual perspective is an indicator of spirituality and a means to quantify and qualify the abstract concept, spirituality. Perceived spirituality is a strong predictor for spirituality (Meyer, 2003). Spiritual perspective represents the importance spirituality plays in a person's life (Reed, 1987). According to Reed and Larson (2005), spiritual perspective is the belief in the existence of something beyond what is concrete without devaluing self. This perspective may be religious in nature or not. Spiritual perspective is an expression of spiritual beliefs and values and is helpful in facilitating end-of-life and important health care decisions. Physical, social and psychological well-being can be enhanced with spiritual perspective (Reed & Rousseau, 2007).

Life events, either positive or negative, can influence and alter one's spiritual perspective. Spiritual perspective involves expressions of spirituality such as mentioning spiritual matters, sharing joys and problems, reading spiritually related material, engaging in private prayer or meditation and expressions of spiritual values such as the importance of spirituality, forgiveness and spiritual guidance in decision making (Reed, 1987).

Spirituality, as measured by spiritual perspective, has been positively correlated to physical, psychological and emotional health in many populations. Persons with a high sense of spirituality demonstrate outcomes of a sense of peace, improved quality of life, a sense of well-being, and self-actualization (Bolletine, 2001; Coyle, 2002; Craig, Weinert, Walton, & Derwinski-Robinson, 2006; Meyer, 2003; Mok, Wong, & Wong, 2009).

Spirituality research has also shown that a decrease in this attribute leads to depression and a decreased perception of health (Dailey & Stewart, 2007; Jesse et al., 2005; Jesse & Reed, 2004; Gibson, 2003), but this has not been extensively studied in rural populations.

Depression

According to the World Health Organization (2012c), depression is a common mental health disorder that affects all populations and is characterized by loss of interest or pleasure, depressed mood, low energy, poor concentration, feelings of guilt, disturbed sleep or changes in appetite. Depression can be a chronic and recurrent mental health problem which can cause significant impairment in a person's ability to function in everyday life. Depression can lead to suicide which is associated with 850,000 tragic deaths every year (World Health Organization, 2012c).

Depression and other mental health disorders affect approximately 20% of the United States population. These disorders affect an estimated 25% of adults age 65 and older and 20% of children and adolescents, age 9 to 17 years. According to O'Malley, Forrest, and Miranda (2003) between 25% and 50% of all primary care visits involve some mental health component including depressive symptoms. Depression is a co-morbidity of many chronic conditions such as diabetes, heart failure, arthritis, and renal disease. Social, personal, familial and health functions are all affected by depression (Gam, Hutchinson, Dabney, & Dorsey, 2003). Living in poverty, being African American, and living in rural areas have been associated with a lower likelihood of receiving mental health care (Gam et al., 2003). Vulnerable populations, including rural populations, are at increased risk for depressive symptomatology.

Depression is one of the most common mental health problems in rural populations. There are an estimated 2.6 million rural adults who are diagnosed with depression at any one time (Probst, Laditka, Moore, Harun, Powell, & Baxley, 2006). Rural residents are underserved as far as mental health services due to lack of infrastructure to support mental health care. There are fewer resources and greater barriers to mental health care in rural areas (Kemppainen, Taylor, Jackson, & Kim-Godwin, 2009). Probst et al. (2006) found the depression risk is significantly higher among rural residents than urban residents. Rural residents are more likely to experience adverse events that may increase the likelihood of depression. In addition, the stigma of mental health disease, cultural beliefs, and the tendency of rural residents to self-treat often prevents proper diagnosis and acceptance of treatment of depression (Kemppainen et al., 2009). Adherence to treatment for depression is poor in the rural population. Because of these barriers, the mental health outcomes for rural residents are poorer than the outcomes for urban residents (Probst et al., 2006).

Depressed individuals often lack social relationships or self-isolate. Social connectedness is considered a social resource that may decrease the level of depressive symptoms (Allen, Marcelin, Schmitz, Husmann, & Schultz, 2012; Moscardino, Scrimin, Capello, & Gianmarco, 2010; Donald, Dower, Correa-Velez, & Jones, 2006; Donald & Dower, 2002). Spirituality is negatively correlated with depression levels in many studies indicating the greater the person's spiritual perspectives are, the lower the reported level of depressive symptoms (Jesse & Reed, 2004; Craig, et al., 2006; Dailey & Stewart, 2007). However, research is limited in looking at the impact of these social resources of social connectedness and spirituality on depression in rural populations.

Identifying the relationships between social determinants of health to the development of depression in rural populations is essential in order to understand the impact of these resources on the health status of rural inhabitants.

Perceived Health

There are many definitions of health. The World Health Organization defines health as “a state of complete physical, mental, and social well-being” (World Health Organization, 1948, p. 1). Most definitions of health look at health on a continuum from death at one end of the continuum to optimal health at the other. Health is not just avoidance of disease or disease-related disabilities but includes cognitive and physical functioning and active engagement in society (Aday, 2003).

Health is a complex concept that can be understood from many different perspectives. The three primary perspectives of health are (1) the patient’s self-perception of health, (2) a healthcare professional’s judgment, or (3) observed levels of functioning. The perspective of health used in this study was the patient’s self-perception of health. An individual’s perception of their health is based on their subjective physical, mental and social well-being as well as self-reported symptoms. Individuals use a variety of criteria to rate their health such as ability to live independently and the ability to work or perform other activities of daily living (Aday, 1994, 2003).

Social determinants of health influence a person’s perception of their health. How socially connected an individual feels with others can have a positive effect on their perceived health status (Ashida & Heaney, 2008; Guimmarra, Haralambous, Moore, & Nankervis, 2007; Hinton & Earnest, 2009; Jackson, Unruh, & Donahus, 2011). Spirituality, whether by healthy lifestyles or connectedness, is also associated with

positive health outcomes (Chester et al., 2006; Daaleman et al., 2001; Jesse & Reed, 2004). A person who feels socially isolated or lacks the positive spiritual, mental or emotional influences of a faith community may have a more negative perception of their health. Examination of the relationships between the social resources of connectedness and spirituality and perceived health is important to identify the impact these resources have on the health status. This examination has been limited in the rural health arena.

Problem Statement

The World Health Organization (2012a) and Healthy People 2020 (United States Department of Health and Human Services, 2011) have identified social, economic, and physical environments in addition to a person's individual characteristics and behaviors as determinants of health. The implications of determinants of health are that the context of an individual's life also contributes to their health and that few are able to directly control many of the determinants of their health (World Health Organization, 2012a).

Access to and quality of health care services impact health status, however, the influence of these on health status is less than the influence of other determinants of health. According to Lavizzo-Mourey, Richardson, Ross and Rowe (2005) "less than one fourth of our health status is attributable to health care" (p. 314). Strategies to address disparities and inequalities in health status must address not only the disproportionate levels of access to health care and lower levels of health care quality when access is available, but also the adverse socioeconomic conditions faced by vulnerable populations (Lavizzo-Mourey et al., 2005). Likewise, poverty or lack of material resources is not the only factor responsible for health inequalities; the lack of social resources of a population

impact health status as well. Understanding of disparities in health status is difficult without taking into consideration the social determinants of health (Marmot, 2005).

Social determinants of health include socioeconomic conditions, social norms, support and social interactions and are the conditions in which people are born, live, work and age (US Department of Health and Human Services, 2011). Social support and social interactions relate to how connected an individual feels to friends, family and others in the community. These social determinants have a strong impact on health, but are not often examined when looking at the overall health of an individual.

Two social resources shown to positively predict mental, physical and social health in a variety of populations are social connectedness and spirituality (Ashida & Heaney, 2008; Cacioppo & Hawley, 2003; Hill, 2006; Chester et al., 2006; Jesse & Reed, 2004; Jesse et al., 2005; Daaleman et al., 2001). Social connectedness is the relationships between self and other people, communities and environments that individuals develop which incorporate a sense of trust, belonging and social identity (Hagerty et al., 1993; Lee et al., 2008; Mitchinson et al., 2008). Spirituality is an individual social resource that includes meaning or purpose of life, transcendence and connectedness to a higher being, self and others. The connectedness in spirituality relates to a sense of trust and belonging (Campbell et al., 2010; Vance, 2001). Investigating the level of social connectedness and spirituality in a particular individual may give insight into their mental and physical health status.

Depression is a common mental health disorder that negatively impacts physical, mental and social health of an individual. Rural inhabitants are particularly vulnerable to poorer physical and mental health outcomes, including conditions such as depression, due

to lack of healthcare, economic, and social resources (Institute Of Medicine, 2005).

Rural residents are at higher risk of undiagnosed and/or self-treated depression than urban populations (Probst et al., 2006) and overall poorer health status (Kemppainen et al., 2009).

Little is known, however, about the contribution of social resources, such as social connectedness and spirituality, on rural residents' perceived mental and physical health. Understanding how those social resources impact self-reported depression levels and perceived health of rural residents is vital to better understand the full complexity of health and disease of these individuals. Once these relationships are better understood, methods of increasing social connectedness and/or spirituality can be identified and implemented, which may lead to decreased levels of depression and better overall health among these individuals.

Purpose of the Study

The purpose of this study was to improve our understanding of the relationships of social connectedness and spirituality with depression and perceived health in persons living in a western county in rural Colorado. An improved understanding of these complex attributes of health will hopefully allow rural health care providers and community leaders to better identify and address the unique physical, social and psychological health needs of persons within rural populations.

Research Questions and Hypotheses

The research study was designed to examine the relationships between the resources of social connectedness and spiritual perspectives on the level of self-reported depression and perceived health of rural inhabitants using the Framework for Studying

Vulnerable Populations (Aday, 1994, 2003) as the conceptual model. The research question for this study was:

Is there a relationship between the resources of social connectedness and spirituality and the level of self-reported depression and the overall level of perceived health in persons living in rural Colorado?

The hypotheses for the study were:

- H1 Social connectedness significantly predicts perceived health in rural residents after controlling for age, gender, income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.
- H2 Spiritual perspective significantly predicts perceived health in rural residents after controlling for age, gender, income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.
- H3 Social connectedness significantly predicts self-reported depression in rural residents after controlling for age, gender, and income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.
- H4 Spiritual perspective significantly predicts self-reported depression in rural residents after controlling for age, gender, and income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.

Significance

According to Shi & Stevens (2005) a national focus on vulnerable populations is imperative as (1) these populations have greater health needs, (2) in the United States, there is an increasing prevalence of vulnerable individuals, (3) social forces create and can solve vulnerability, (4) vulnerability is linked with the United States national resources, and (5) in order to obtain equity in health, vulnerable populations must be addressed. The Institute of Medicine's Committee on the Future of Rural Health Care

(2005) recommends each rural community conduct a health needs assessment, set priorities for addressing the population and individual health needs, and develop and implement an action plan to address the identified health issues.

A growing body of literature supports the premise that social connectedness impacts health and well-being and that lack of social connectedness can lead to vulnerability to poor health outcomes (Lee & Robbins, 1998; Flaskerud & Winslow, 1998, Mitchinson, et al., 2008). Feeling connected to others leads to physical and psychological well-being and has a positive impact on health (Lee & Robbins, 1998; Mitchinson et al., 2008).

Individuals who experience abandonment, peer rejection, isolation or any other occurrence of a negative social relationship may not develop strong social connectedness. Failure to develop a sense of connectedness can lead the individual to feel distant from other people and society in general. People with low sense of social connectedness may have difficulty fulfilling social roles and responsibilities, not participate in social activities and therefore, not be as adept at managing social relationships with others. This can result in even greater social isolation. These individuals view others with distrust and “see themselves as outsiders” (Lee, Draper, & Lee, 2001, p. 310). Feelings of isolation and distrust can impact physical and psychological health negatively.

Even though social connectedness is seen as beneficial and necessary, modern society has caused people to become increasingly isolated and less trusting and connected. There are fewer opportunities for social connectedness to develop in many communities, particularly in rural areas (Baernholdt, Jennings, Merwin, & Thornlow, 2010; Edwards & Cheer, 2007). This may lead to increased health vulnerability which

may increase the risk for poor health. However, it was not known whether these same factors are important for predicting poorer health outcomes in individuals who live in rural areas. Identifying methods to improve and increase social connectedness should lead to decreased vulnerability and risk of adverse health outcomes for these individuals living in rural communities.

Spirituality, as assessed by spiritual perspective, is considered a resource to physical, psychological and emotional health and lack of spirituality can be detrimental to health (Chester et al., 2006; Hill, 2006; Daaleman et al., 2001; Jesse & Reed, 2004). The literature is not as explicit as the social connectedness literature on the relationship between spiritual perspective and health. Perhaps spirituality is related to connectedness. Kociszewski (2003) describes spirituality as “a complex phenomenon that is part of the inner self, a connection with the outer self, nature, or higher being, your soul, connection to our inner wisdom” (p. 138). Or the impact of spirituality on health may be due to the other characteristics of spirituality such as meaning and purpose to life, transcendence and advocacy of a healthy lifestyle.

Studies investigating the relationship between social connectedness and depression and spiritual perspectives and depression in a variety of populations existed (Armstrong & Oomen-Early, 2009; Bekker & Croon, 2010; Bond, et al., 2007; Dailey & Stewart, 2007; Jesse & Reed, 2004; Jesse et al., 2005). The same was true of the relationships of social connectedness and spiritual perspectives on perceived health (Ashida & Heaney, 2008; Cacioppo & Hawley, 2003; Hill, 2006; Chester et al., 2006; Daaleman et al., 2001). However, there were no studies investigating the relationships of both independent variables (social connectedness and spiritual perspectives) on these two

dependent variables (depression and perceived health). And there were no studies which examine all four variables in the rural populations.

Social connectedness and spirituality is not extensively researched in nursing literature. The findings from this study will hopefully assist nurses and advanced practice nurses, especially those located in rural areas, to understand the impact these resources have on patients' perceived physical and mental health. And as a result, the motivation to provide opportunities for increased social connectedness and expression of spirituality will seem more imperative than it is at present time. In addition, the outcomes of this study will hopefully motivate other nurse researchers to investigate these social resources further to provide optimal patient centered care.

This study sought to understand the relationships between social connectedness and spirituality on depression and perceived health in rural inhabitants. Analysis of these relationships in a rural population could lead to the development of strategies to address the unique health needs and improve the mental, physical and social health status of rural populations.

Framework for Studying Vulnerable Population

The Framework for Studying Vulnerable Populations was developed by Aday (1994, 2003) and has been used to study vulnerable populations in various settings such as homeless persons, refugees and immigrants, high-risk mothers and infants, and the chronically or mentally ill. The framework incorporates both community and individual perspectives in understanding vulnerability. The three main concepts of the framework are resource availability, relative risk, and health status. The relationships between these

three components ultimately lead to a community's and/or individual's level of well-being (Aday, 1994, 2003).

Resource Availability

Aday (1994, 2003) notes resource availability at the community or macro-level is the beginning place for understanding the factors that affect the risk of poor health. "Individual risks vary as a function of the opportunities and material and nonmaterial resources" associated with the social characteristics of the individuals who make up the community, the social connectedness (or the "tie that binds") between neighbors, family, and friends, and the housing, income, jobs and schools that compose the neighborhood or community where they live (Aday, 2003, p. 5).

Based on the availability of these community resources, individual resources include social status, human capital, and social capital (Aday, 1994, 2003). Social status is associated with prestige and power. It is related to the position one occupies in society and is based on characteristics such as age, gender, race, and ethnicity. The standing in society influences the prevalence of vulnerability. For example, the very young and very old are more vulnerable for poor health due to the dependency roles seen in these age groups. Additionally, women may be more vulnerable than men due to higher stress and complex roles. If an individual has a variety of statuses such as poor, minority, female, and adolescent there is an even higher risk for vulnerability (Aday, 2003).

The investment in an individual's skills and capabilities to enhance their contribution to society is human capital. Individuals and communities with lower incomes, high rates of unemployment, substandard housing, and poorer schools have fewer resources than communities with better schools, housing and job opportunities.

Investing in vocational or public education to help individuals develop new skills or master a trade leads to better employment opportunities. A higher level of education attainment leads to higher-status occupations with higher levels of income. These socioeconomic factors have been shown to lead to lower rates of global morbidity and mortality (Shi & Stevens, 2005).

Relative Risk

Relative risk is defined as “the ratio of the risk of poor health among groups exposed to the risk factors versus those who are not exposed” (Aday, 1994, p. 487). Relative risk indicates the differential vulnerability of different groups to poor health. Community and individual risk factors are those associated with poor physical, psychological, and social health. Individual risk factors include unhealthy lifestyle choices such as tobacco use, alcohol and drug abuse, lack of physical exercise, unhealthy eating practices, lack of preventative health measures and social isolation. Examples of community risk factors are violence, crime, air or water pollution, and exposure to hazardous chemicals such as lead. An unsafe community such as ghettos or slums can lead to decrease social connectedness due to lack of trust and fear. At risk communities place individuals who live in those communities at higher risk for adverse health (Aday, 2003).

While it is true that some groups of people may be more at risk than others at any given point in time, no one is immune to adverse health outcomes. All individuals are in a vulnerable group at some time during their life and therefore all individuals are at risk of poor physical, psychological and/or social health. In addition, being in poor health in one area such as a chronic physical illness can lead to a decrease in psychological health

such as depressive symptoms and poor social health as in lack of social interaction (Aday, 2003).

Health Status

Health status is related to the community and individual health needs according to the Framework for Studying Vulnerable Populations (Aday, 1994, 2003). The framework's definition of health is based on the World Health Organization's definition: "Health is a state of complete physical, mental, and social well-being" (1948, p. 1). Health needs are "those departures from full physical, mental, and social health that people experience in the course of their lives" (Aday, 2003, p. 3). The framework is holistic as it considers not just physical health but also psychosocial health as well.

Conceptual Framework

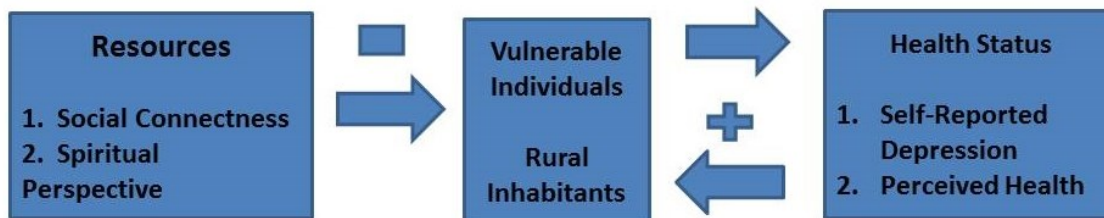
The development of the research study was guided by the Framework for Studying Vulnerable Populations (Aday, 2003). The purpose of the study was to examine the relationships of social connectedness and spiritual perspectives on the levels of depression and self-reported health in rural inhabitants. Social connectedness and spiritual perspectives were considered resources. Lack of these resources may increase the vulnerability of an individual. According to the framework, social connectedness and spiritual perspectives may have a positive impact on individual physical, psychological and social health needs. The ultimate results of these resources are individual well-being.

Depression and an individual's perception of health reflect the health status of the individual. It was expected there will be an inverse relationship between social connectedness and spiritual perspectives and level of depression in rural inhabitants. Increased social connectedness and spiritual perspective will result in decreased

vulnerability and depression and increase in self-reported health and vice versa (Figure 1).

Figure 1

Relationship between Resources, Vulnerable Populations and Health Status



Adapted from Aday, L. A. (2003). *At risk in America: The health and health care needs of vulnerable populations in the United States* (2nd ed.) San Francisco, CA: Jossey-Bass.

Terms and Definitions

Social Connectedness

The definition used in this research study was: social connectedness is the relationships between self and other people, communities and environments that individuals develop which incorporate a sense of trust, belonging and social identity (Hagerty et al., 1993; Lee & Robbins, 1998; Mitchinson et al., 2008).

Spirituality

Spirituality was defined “an interconnection with God or god being, that enables a human being to transcend the circumstance at hand and give purpose and meaning to life” (Vance, 2001, p. 265). Spiritual perspectives are beliefs and values that reflect the importance of spirituality in an individual’s life (Reed, 1987). These perspectives are strong indicators of spirituality (Meyer, 2003).

Depression

Depression is a “medical illness that causes a persistent feeling of sadness and loss of interest. Depression can cause physical symptoms, too” (Mayo Clinic, 2012, para. 1). The American Psychiatric Association describes the diagnostic criteria for major depressive episodes and major depressive disorder (2000). A major depressive disorder requires two or more depressive episodes. A depressive episode begins with depressed mood and/or loss of pleasure or interest in life activities for at least two weeks. In addition to one or both of these characteristics, the person must have at least five of seven other symptoms which causes a significant impact on the individual’s social, work and other important areas of functioning almost every day. The seven symptoms are “(1) unintentional, significant changes in weight either gain or loss, (2) sleeping too much or unable to sleep, (3) agitation or decrease in psychomotor functioning that is noticed by others, (4) fatigue or loss of energy, (5) feelings of excessive guilt or worthlessness, (6), decreased ability to think or concentrate or indecisiveness and (7) recurrent thoughts of death” (American Psychiatric Association, 2000, p. 356).

Perceived Health

The study used the World Health Organization’s definition of health which states health is “a state of complete physical, mental, and social well-being” (1948, p. 1). The World Health Organization’s Ottawa Charter for health promotion describes health as a “resource for everyday life, not the objective of living (1986, p. 2). The continuum of health ranges from good health defined by indicators of physical and mental development to death defined by mortality rates. Self-perceived health is how an individual views

his/her own health and can be based on ability to work, play and conduct activities of daily living (Aday, 2003).

Rural Communities

Rural areas are considered places of low population density. There are three common definitions of rural areas used today. These definitions come from the United States Bureau of Census, The White House Office of Management and Budget, and the U.S. Department of Agriculture's Economic Research Service.

The United States Bureau of Census (2010) identifies urban areas as either 1) urbanized areas of 50,000 or more people or 2) urban clusters of at least 2,500 and less than 50,000 people. Rural includes all population, housing, and territory not included within an urban area or cluster. Rural is considered open country and settlements of less than 2,500 residents (Institute of Medicine, 2005).

The Office of Management and Budget (2010) uses a county based approach to measure how far a large city's economic influence extends beyond its limits. The amount of inter-county job commuting determines this influence. The terms "Core Based Statistical Areas", "metropolitan," "micropolitan" and "noncore" are used to define the areas of measurement. A metropolitan area is a county with a central city and adjoining counties that together have more than 50,000 people, regardless of the size of the largest central city. A micropolitan area is a county with a town of at least 10,000 residents; if commuting to the central county is 25 % or higher, the outlying counties are included. "Noncore counties are those not near an urbanized area of 10,000 or more" (Institute of Medicine, 2005, p. 201). However, the Omnibus Appropriations Bill of 2004 broadened the rural area definition to "include any incorporated city or town of 20,000 persons or

less” in order to increase the eligibility for participation in the United States Department of Agriculture’s Rural Broadband Grant and Loan Program (Institute of Medicine, 2005, p. 201).

The United States Department of Agriculture’s Economic Research Service uses other types of measurements to compare populations. The rural-urban continuum codes distinguish metropolitan counties by size and nonmetropolitan counties by the degree of urbanization and proximity to metropolitan areas. Metropolitan counties can be classified as fewer than 250,000 residents or greater than 1 million. Nonmetropolitan counties can be defined on a continuum from urban populations of 20,000 or greater adjacent to metro area at the high end to completely rural or less than 2,500 resident, not adjacent to metro area (2003).

The definitions of rural used in this research study were the United States Bureau of Census’s definition of rural areas are considered those areas with 2,500 or less populations and the Omnibus Appropriations Bill of 2004 definition of any incorporated city or town of 20,000 persons or less. These two definitions allow consideration of cities and towns as well as the vast open areas in the county of interest.

Summary

When assessing the health status of communities and individuals it is important to assess the determinants of health. Determinants of health include an individual’s characteristics and behaviors as well as the physical, social and economic environments (World Health Organization, 2012a). These determinants of health are primarily responsible for health inequities; the avoidable and unfair differences in health status (World Health Organization, 2012b).

Socioeconomic conditions including income, educational and job opportunities, as well as social interactions and social support make up the social determinants of health (Department of Health and Human Services, 2011). In order to understand health inequities and disparities in health status, the social determinants of health must be considered (Marmot, 2005). These social resources of an individual have as much an impact on health as the individual's behaviors or physical environment (Barr, 2008).

Social connectedness and spirituality are two social resources that have been shown to impact health status (Ashida & Heaney, 2008; Cacioppo & Hawley, 2003; Hill, 2006; Chester et al., 2006; Jesse et al., 2005; Jesse & Reed, 2004; Daaleman et al., 2001). Lack of social connectedness and spirituality can lead to vulnerability to poor physical and mental health outcomes while feeling connected to others and having high levels of spiritual perspectives have a positive impact on health (Lee & Robbins, 1998; Flaskerud & Winslow, 1998, Meyer, 2003; Mitchinson, et al., 2008).

Vulnerable populations are populations at higher risk of adverse physical, mental and social health outcomes because of potential lack of needed resources and higher numbers of risk factors (Aday, 1994, 2003). Rural populations are considered vulnerable populations (Institute of Medicine, 2005; Leight, 2003) because of the lack of resources in rural areas including lack of healthcare access due to fewer health care professionals, lack of healthcare insurance and geographical isolation from health care services. Lack of social resources includes isolation from others, lower SES levels and lack of social status (Institute of Medicine, 2005).

Identification of the social resources, social connectedness and spirituality, of rural inhabitants is helpful in addressing the social determinants of this population's

health. Understanding how those social resources impact depression levels and perceived health of rural residents is vital to assessment of the health status of rural residents and communities. Once these relationships are defined and measured; methods of increasing social connectedness and/or spirituality can be identified which may lead to decreased levels of depression and better overall health among these individuals.

CHAPTER II

REVIEW OF LITERATURE

Social groups with an increased susceptibility to adverse health outcomes are considered vulnerable groups (Flaskerud & Winslow, 1998). The concept of risk is inherent in the definition of vulnerability; risk to physical, mental, and social health. Being vulnerable or at risk in one area of health increases the risk of poor health in another area. For example, having a chronic illness (physical health) could lead to a decrease social connectedness (social health) which could increase the risk for depression (mental health) (Aday, 2003).

Rural populations can be considered vulnerable due to many factors. Lower socioeconomic status is more prevalent in rural populations than in urban areas (National Rural Health Association, 2010). According to the Institute of Medicine's report *Quality through Collaboration: The Future of Rural Health* (2005), these populations lack "core health care services" (p. 2) because of the difficulty in recruiting health care professionals to rural communities. Rural inhabitants tend to be older and have more chronic illnesses leading to greater limitations in functional ability than urban inhabitants. Although there is variability in health behaviors in rural populations, there is a tendency for higher rates of obesity, smoking, substance abuse and lack of physical exercise in rural inhabitants (Institute of Medicine, 2005; National Rural Health Association, 2010).

Because of their vulnerability, it is imperative that we explore all the contributions to the overall health status of individuals living in rural areas, to help promote best health outcomes. This study, using Framework for Studying Vulnerable Populations (Aday, 1994, 2003), was conducted to further explore the complexity of the relationships between social determinants of health and perceived health outcomes.

This chapter explores a review of literature related to the study concepts of social connectedness, spirituality, perceived health and depression and the supporting theoretical framework, the Framework for Studying Vulnerable Populations (Aday, 1994, 2003). An extensive review of the sociology, psychology, nursing, and political literature revealed the depth and breadth of the concepts social connectedness, spiritual perspectives, depression and vulnerability of rural communities and the relationships between these concepts. The literature review consisted of publications published from 1991 to 2013 written in English. Databases for the literature search were CINAHL, PsycINFO, Social Sciences Full Text, ERIC and Academic Search Premier.

Population Health Theories

One-dimensional Population Health Theories

One group of population health theories focuses on individual characteristics, attitudes, and behaviors to explain why certain populations have poorer health outcomes. The Individual Determinants Model identifies specific vulnerable populations based on individual characteristics such as age, gender, ethnicity, race, income, education and life changes. According to this model, the very young, adolescents, older adults, women, minority race/ethnicity, individuals with less income and education, and those experiencing life changes such as illness, death of a loved one, end of relationships,

unemployment, or impaired functioning are at higher risk of vulnerability. According to the individual determinants model an individual has the potential to be vulnerable at many stages of life and no one is immune to vulnerability (Shi & Stevens, 2005).

The Individual Health Behaviors theory suggests that individuals within vulnerable populations are less likely to practice health promoting behaviors such as healthy eating, regular physical exercise, and stress management and are more likely to use risky behaviors such as smoking, alcohol and drug abuse (Shi & Stevens, 2005).

Psychosocial factors such as decreased self-esteem, lack of locus of control, lack of social support and connectedness are thought to create mental and physical barriers for individuals to practice healthy behaviors. Vulnerable individuals adopted risky health behaviors as a means of coping with stress. There is support for the health behaviors model however; the literature cautions against assuming health behaviors are the only cause of vulnerability (Shi & Stevens, 2005).

Another population health theory, the Individual Socioeconomic Status Model, focuses on the influence of socioeconomic status on poor health outcomes of individuals within certain populations. The socioeconomic status is defined by an individual's income, education and occupation. An inverse relationship between levels of income, education and occupation and mortality has been shown in several studies. The most well-known are the Whitehall Studies which investigated British civil servants in London (Marmot & Smith, 1991). These studies showed a nearly linear relationship between social class as defined by occupation and mortality from most major causes of death. The lower levels of social class had nearly three times higher mortality rates than the highest social class. Less financial resources to access health care and to practice health

promoting behaviors was the primary explanation of the relationship between poor health and lower socioeconomic status (Marmot & Smith, 1991).

Multidimensional Population Health Theories

A second set of models or theories focuses on the multifaceted causes of vulnerability. These models look beyond individual characteristics and advance the broader conceptualization of vulnerability as influenced by community and social factors. The models propose community and social factors contribute to poor health outcomes and vulnerability. Society's responsibility to address the consequences of vulnerability is highlighted in these theories (Shi & Stevens, 2005).

The Vulnerable Populations Model outlines the relationships between resource availability, relative risk and health status (Flaskerud & Winslow, 1998). Resource availability includes both socioeconomic and environmental factors. The socioeconomic factors include social status, social capital and human capital at the community level. Environmental factors include limited access to health care and poor quality of health care. Lack of resource availability can lead to increased risk for poor health outcomes which can lead to poor health status as measured by mortality and morbidity numbers. This model is based on the Framework for Studying Vulnerable Populations (Aday, 1994, 2003). The difference between the two conceptual models is the Vulnerable Populations Model focuses only on the community level whereas the Framework for Studying Vulnerable Populations incorporates both community and individual characteristics (Shi & Stevens, 2005).

Two other models, the Community Environmental Exposure Model and the Community Medically Underserved Model, attempt to explain community influence on

vulnerability by highlighting the potential for harmful environmental exposures and/or lack of available medical care services. The Community Environmental Exposure Model suggests that lower SES communities has higher levels of health-impairing environmental exposures such as lead-based paint, air pollution, crowded living situations, violence, and workplace injuries (Shi & Stevens, 2005).

Rural populations are considered vulnerable to poor health status based on the Community Medically Underserved Model. Medically underserved areas have the potential for poorer health outcomes even though it is generally accepted that health care services contribute a relatively small percentage to overall health status. The lack of available medical care services included lack of health care resources, health care workers, financial barriers to obtaining health services, and other non-financial barriers such as lack of transportation, cultural and/or language differences (Institute Of Medicine, 2005).

Framework for Studying Vulnerable Populations

A more comprehensive model for studying health and health needs of vulnerable populations is the Framework for Studying Vulnerable Populations (Aday, 1994, 2003). The framework is based on the assumption that vulnerable populations are at risk of poor physical, psychological and/or social health and everyone is potentially at risk for an adverse health-related outcome at some point in their life. Another assumption is that certain individuals and groups are at more risk than others at any given point in time. Insurance companies have long accepted this assumption as seen in actuarial tables (Aday, 2003).

The Framework for Studying Vulnerable Population incorporates both individual and community level perspectives in determining vulnerability to poor physical, psychological and social health (Figure 2). The individual perspective (micro view) views health as the individual's personal lifestyle choices. If the outcome is poor health then it is the result of the individual's failure to assume personal responsibility for their health and well-being. The community perspective (macro view) focuses on resources and opportunities for the community's population to maximize health. In this perspective, poor health outcomes are the result of the community's failure to invest in and assume responsibility for its members' well-being (Aday, 2003).

The three main concepts in the framework are resource availability, relative risk and health status. Each concept is explained from the macro view (community) and the micro view (individual). The relationships between the three concepts affect the community and individual well-being.

Community level resource availability includes opportunities and resources associated with personal characteristics (i.e. gender, age, race, and ethnicity) of the people who make up the community, the nature of the ties or associations between the community members (social connectedness), and the characteristics of the community (i.e. schools, jobs, income, housing, and associated factors such as crime and violence). Individual level resources consist of social status (i.e. prestige and power), social capital (i.e. social support) and human capital (productive potential).

Relative risk is defined as “the ratio of the risk of poor health among groups exposed to the risk factors versus those who are not exposed” (Aday, 1994, p. 487). The differential vulnerability to poor health outcomes was indicated by the relative risk.

Community risk factors are those attributes or exposures which are predictive of the incidence of poor physical, psychological and/or social health. Examples of these attributes or exposures may be smoking, lead poisoning, air pollution, or drug use. At risk communities lead to at risk and vulnerable individuals who are susceptible to harm or neglect.

The definition of health in the Framework for Studying Vulnerable Populations is based on the World Health Organization's definition which states health is "a state of complete physical, mental and social well-being" (World Health Organization, 1948, p. 1). Community and individual health status is defined by their health needs. These health needs can be physical, psychological and/or social. The interpretation of individual or community health needs depends on how they are defined and measured. There are three perspectives to assess an individual's health needs; (1) the patient's self-perception of health, (2) a healthcare professional's judgment, or (3) observed levels of functioning. Community health needs are assessed through statistical indicators of morbidity and mortality, and rates of incidence and prevalence of diseases.

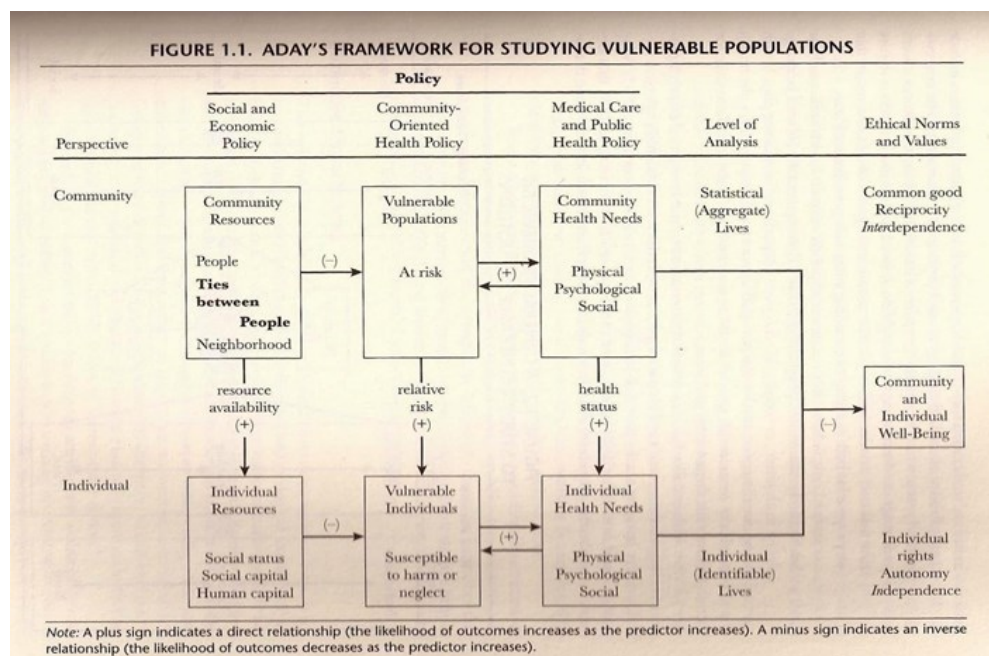
Community resources have a direct relationship on individual resources. More community resources lead to increased availability of individual resources. There are inverse relationships between community and individual resources and the level of vulnerability. In other words, decreased individual resources increase the vulnerability of individuals making them more susceptible to harm or neglect. The vulnerability of individuals has a direct relationship on the vulnerability of populations meaning the more vulnerable individuals there are in a community the more vulnerable the community becomes.

There are reciprocal direct relationships between the vulnerable communities and individuals and community and individual health needs. Vulnerable individuals have increased health needs and increased health needs can lead to increased vulnerability. The same is true on the community (macro) level. Individual health needs either physical, psychological, and/or social have a direct relationship to the community health needs.

The final relationship is an inverse relationship between the community and individual health needs and the community and individual well-being. As community and individual health needs increase, the well-being of the community and individual decrease. And the opposite is true; as health needs decrease the well-being of the community and individual increased (Aday, 2003).

Figure 2

Aday's Framework for Studying Vulnerable Populations



Aday, L. A. (2003). *At risk in America: The health and health care needs of vulnerable populations in the United States* (2nd ed.). San Francisco, CA: Jossey-Bass.

Social Connectedness

Human beings have a deep seated need for social connectedness. A sense of connectedness begins to develop in childhood and continues throughout adulthood. Children gain feelings of trust and well-being in bonding relationships with family. Positive relationships with family and friends evolve into feeling comfortable and confident within a gradually widening social context. In adolescence, memberships in various groups allow identification with others who are different from self. This sense of connectedness assists in completing developmental tasks such as choosing life partners, parenthood, career development and other social roles (Lee & Robbins, 1998; Hutcherson, Seppala, & Gross, 2008).

A growing body of literature supports the premise that social connectedness impacts health and that lack of social connectedness can lead to vulnerability and poor health outcomes (Lee & Robbins, 1998; Flaskerud & Winslow, 1998; Aday, 2003; Mitchinson et al., 2008; Ashida & Heaney, 2008; Cornwell & Waite, 2009; Warburton & Stirling, 2007). The literature reflects social connectedness is correlated with perceived improved quality of life (Boyd, 2010; Boyd, Hayes, Wilson, & Bearsley-Smith, 2008), sense of well-being (Haun, Rittman, & Sberna, 2008; Lee et al., 2008; Wainer & Chesters, 2000), sense of belongingness (Lee, Keough, & Sexton, 2002), self-esteem and social skills (Donald & Dower, 2002; Donald et al., 2006; Karcher, 2005; Karcher & Sass, 2010; Williams & Galliher, 2006), social competence (Lee, et al., 2002), interpersonal trust (Wang, Schlesinger, Wang, & Hsiao, 2009), hope and self-differentiation (Williamson, Sandage, & Lee, 2007).

Lack of or poor social connectedness is predictive of adjustment difficulties in college age students (Duru, 2008), depressive symptoms in adolescents (Czyz, Liu, & King, 2012; Frydenberg, Care, Freeman & Chan, 2009; Karcher, 2005), social isolation (Haun et al., 2008; Person et al., 2007), perceived stress (Cacioppo & Hawley, 2003; Lee et al., 2002; Williams & Galliher, 2006), mistrust (Wang et al., 2009), loneliness (Williams & Galliher, 2006), hopelessness and despair (Williamson et al., 2007). Low social connectedness is also perceived as a social stigma in college aged men and women (Lee, et al., 2002). Cornwell and Waite (2009) found social disconnectedness and perceived isolation in older adults are associated with lower levels of self-rated physical health.

Sun, Waldron, Gitelson, & Ho (2012) studied older residents of a retirement community who had experienced the loss of loved ones and found three levels of connectedness: individual, relational and collective. The study revealed all three levels may impact health. Other types of social connectedness which impact health seen in the literature are interpersonal (Ashida & Heaney, 2008; Cornwell & Waite, 2009; Warburton & Stirling, 2007), family (Frydenberg et al., 2009; Kumi-Kyereme, Awusabo-Asare, Biddlecome, & Tanle, 2007; Hendry & Reid, 2000; Karcher & Sass, 2010), school (Boyd et al., 2008; Lee et al., 2008), community (Cornwell & Waite, 2009; Farmer, Lauder, Richards, & Sharkey, 2003; Stain et al., 2008) and cultural connectedness (Edwards & Cheer, 2007; Person et al., 2007; Wang et al., 2009).

A grounded theory study conducted by Person et al. (2007) interviewed 28 Dominican women with chronic filarial lymphedema. The study looked at the effects associated with disrupted social connectedness. Disrupted social connectedness was

associated with poorer health outcomes, disrupted social support, psychological distress, depression, and social isolation. Another intriguing finding of the study was improvement in existing social networks rather than developing social networks with strangers resulted in better health outcomes.

A randomized controlled study by Mitchinson et al. (2008) involved 650 surgical patients from two Veteran's Administration medical centers. The patients' social connectedness was assessed by the number of friends or relatives each patient had and the frequency of contact. The researchers then compared this level of social connectedness to post-operative length of stay, need for pain medications and post-operative complications. The researchers found the lack of social connectedness appeared to increase the length of stay possibly due to the lack of resources for safe discharge of those patients without support outside the hospital. The lack of social connectedness did not significantly influence the level of post-operative pain or surgical complications.

Social connectedness in rural communities has not been studied extensively and some of the literature found negative effects of social connectedness in rural populations (Barenholdt et al., 2010; Edwards & Cheer, 2007; Farmer et al., 2003; Lauder, Reel, Farmer, & Griggs, 2006). The negative aspects of social connectedness include lack of privacy, lack of autonomy and pressure to conform. Edwards and Cheer's (2007) qualitative study of same-sex attracted women in rural Australian communities found a "dark side" to the strong social ties in a small community (p. 228). In such a community, there is often a push for conformity which certain populations may resist. Resistance to conformity can cause others to withdraw social connections from an individual which can lead to social isolation.

Other adverse consequences of social connectedness especially in small communities are lack of privacy and lack of autonomy. In a study of quality care in a rural hospital, social connectedness is viewed as “both a help and a hindrance” (Baernholdt et al., 2010, p. 1346). Social connectedness impacted the way patients and hospital staff interacted. Lack of privacy and autonomy due to “everyone knows everyone” in small rural communities is a concern (p. 1351). When people meet often in social settings such as church, school events and shopping feelings of too much social connectedness can occur. Self-isolation may result from these feelings.

Social connectedness may be measured on a continuum from high integration into a social group or community to complete isolation socially. Operational definitions of social connectedness which can be measured and reported are home ownership, marital status, church attendance, organizational membership, education and income (Warburton & Stirling, 2007). Telephone and internet access in the home, regular contact with family and/or friends, trust in others, the proportion of the population experiencing loneliness and contact between young people and their parents are other operational measures of social connectedness (New Zealand’s Ministry of Social Development, 2009).

In summary, the literature reveals several types of connectedness from interpersonal to community in many varied populations. Social connectedness is seen as a resource of psychological, physical, and emotional health and the lack of social connectedness is detrimental to these areas of health. Disrupted or lack of social connectedness is associated with poorer health outcomes, disrupted social support, psychological distress, depression, social isolation, and increase the length of hospital stays (Person et al., 2007; Mitchinson et al., 2008). Social connectedness is not

considered positive when it contributes to lack of autonomy, privacy or pressure to conform (Baernholdt et al., 2010; Edwards & Cheer, 2007). Measurement of social connectedness can be obtained by several variables such as number of social contacts, types of relationships, telephone and internet access and demographical characteristics. Social connectedness is viewed on a continuum from total social isolation to high integration into a group.

Social Connectedness and Perceived Health

The majority of the literature looking at the relationship between social connectedness and perceived health identify social connectedness as a protective factor for perceived good health. A study of community-dwelling older adults, age 65-85 years, reveals perceived social connectedness has a positive relationship to health status but social support did not. The conclusion is that social connectedness may be more important than various types of social support in this population (Ashida & Heaney, 2008). Cacioppo and Hawley (2003) found social isolation led to “more frequent everyday stressors” and “less efficient repair and maintenance of physiological functioning, including slower wound healing and poorer sleep efficiency” in young adults (p. S39).

In a qualitative study of 36 older adults and 41 health professionals exploring the concept of health in older age, both groups describe health in four dimensions: physical, mental, social and spiritual. The older adults and the health professionals both brought up the importance of social connectedness and social activity in maintaining overall health. The health professionals include spiritual health as very important to overall health as well (Giummarra et al., 2007).

A second qualitative study of young women from Papua New Guinea examines the links between health and lived experience. Results are 1) a link between connectedness and good adolescent health and 2) good health is considered a social and cultural experience. These findings are similar to ones in other studies examining women's health in other cultures such as cultures in Ecuador, Cameroon, Wales, and United Arab Emirates (Hinton & Earnest, 2009). Jackson et al. (2011) conducted qualitative interviews on Canadian women living in two rural communities. Similar findings that being socially connected in these communities contribute positively to their mental and emotion health resulted.

A study of English adults with mild to moderate intellectual disabilities reveal opposite result from most of the studies looking at the relationship between social connectedness and perceived health. The data from this cross-sectional survey of self-reported health status shows that while indicators of socioeconomic disadvantage are positively and statistically related to poorer health status, there is “no evidence between health status and social participation and networks” (Emerson & Hatton, 2007, p. 31).

Research on the relationship between social connectedness and perceived health is limited due to the wide differences in defining social connectedness and health. More research is needed in this area with clear definitions setting the boundaries of the studies.

Spiritual Perspective

Spirituality is a difficult concept to understand due to the variations in spiritual viewpoints. Some people may view spirituality from a religious perspective, some from a humanitarian perspective and still others may see it in a philosophical perspective

(Barnum, 2003). A person's spirituality is influenced by their cultural, ethnic, moral and social values. Spirituality is unique to each individual.

Spiritual perspective allows spirituality to be described and measured. Spiritual perspective represents the importance spirituality plays in a person's life (Reed, 1987). One's spiritual perspective can be influence by both positive and negative events in an individual's life. Spiritual perspective involves expressions of spirituality such as discussing spiritual matters, sharing joys and problems, reading spiritually related material, and engaging in private prayer or meditation and expressions of spiritual values such as the importance of spirituality and forgiveness and spiritual guidance in decision making.

Spirituality has been described as a search for meaning and purpose in life (Bailey, Moran, & Graham, 2009; Coyle, 2002; Craig et al., 2006; Meyer, 2003; Shores, 2010; Vance, 2001), an essence of being (Bailey, et al., 2009; Carroll, 2001), a sense of connectedness with a higher power, God, or universe (Campbell et al., 2010; Carroll, 2001; Craig, et al., 2006; Meyer, 2003; Shores, 2010; Stranahan, 2001; Vance, 2001), mysterious nature (Barnum, 2003), transcendence (Bailey, et al., 2009; Coyle, 2002; Craig, et al., 2006; Meyer, 2003; Reed, 1987; Vance, 2001), a guiding force (Coyle, 2002), an inner source of power and energy (Stranahan, 2001; Tanyi, McKenzie & Chapek, 2009), relationship with unconditional love (Barnum, 2003), and connectedness to oneself and to the world (Carroll, 2001; Conner & Sanzero, 2004; Craig, et al., 2006; Shores, 2010; Stranahan, 2001). Some of these definitions relate to a process such as a search for meaning and purpose, a sense of connectedness, and transcendence. Others

relate to a static presence such as a guiding force, inner source of power, and relationship with unconditional love.

Research reveals spirituality as a positive resource for physical, emotional, mental and social health (Krause & Bastida, 2011; Dew et al., 2010; Leak, Hu, & King, 2008; Reed, 2008; Rew, Wong, Torres, & Howell, 2007; Reed & Rosseau, 2007; Tuck, Alleyne, & Thinganjana, 2006; Chester et al., 2006; Jesse et al., 2005; Rew, Wong, & Sternglanz, 2004; Jesse & Reed, 2004; Gibson, 2003; Humphreys, 2000; Mitchell & Weatherly, 2000; Reed, 1987). Research findings indicate perceived better physical health is related to a positive worldview and increased spiritual beliefs regarding a loving God (Campbell et al., 2010) and improved quality of life (Leak et al., 2008). Gibson (2003) reports significant positive relationships between spiritual perspectives, hope and psychological well-being. Higher levels of self-esteem and greater satisfaction with social support are significantly correlated with higher levels of spiritual perspectives and religiosity (Jesse & Reed, 2004). Spirituality, as measured by spiritual perspectives, is seen as a protective factor against distress (Humphreys, 2000; Leak et al., 2008), stress (Tuck, et al., 2006), smoking (Jesse & Reed, 2004), anxiety (Davis, 2005), and depression (Dew et al., 2010; Dailey & Stewart, 2007; Jesse et al., 2005). A direct association between spirituality and hope and an inverse relationship between spiritual pain and hopelessness has been reported (Bailey et al., 2009; Craig et al., 2006). Prayer, an expression of spirituality, was found to be positively associated to the protective resources of social connectedness and sense of humor (Rew et al., 2004).

Most patients believe spiritual health is as an important consideration as physical health and a majority of physicians sampled believe spirituality has a positive effect on

physical and spiritual well-being of patients (McCord et al., 2004). The outcomes of spirituality according to the literature are a sense of peace (Mok et al., 2009), self-actualization (Bolletino, 2001), better physical health (Campbell, et al., 2010; Coyle, 2002; McCord, et al., 2004), a sense of hope (Coyle, 2002; Craig, et al., 2006), spiritual well-being (Meyer, 2003), guilt, inner conflicts about one's values and belief (Bolletino, 2001; Carson, 2008) and beliefs that lack of spirituality lead to misfortunes, negative emotions, and loss of serenity (Bolletino, 2001).

Much of the literature notes that religion and spirituality are related but separate concepts. Miller et al. (2003) state "the field of religion is to spirituality as the field of medicine is to health" (p. 28). Religion is defined as "an organized system of beliefs, rituals, practices, and community, oriented toward the sacred" (Dew et al., 2010 p. 150). Spirituality and religiousness are thought of as overlapping constructs. Spirituality is a broader term than religiousness and religiousness is included in spirituality. Spirituality may be or may not be manifested through religious practice (Tanyi et al., 2009). The study by Bailey et al. (2009) found 75% of the respondents described religion and spirituality as separate phenomena. The participants in the study conducted by Carroll (2001) felt spirituality is not the same as religion but it cannot be separated from religion. Other studies use spiritual beliefs and religious beliefs interchangeably based on the belief that Americans do not distinguish between the two terms (McCord et al., 2004).

Few studies have examined spirituality in rural residents. One study conducted by Craig et al. (2006) surveyed 111 rural inhabitants with at least 1 chronic illness in order to examine the relationships between spirituality, hope, depression, social support and well-being. The results revealed those respondents who had an active spiritual life

had high levels of hope and low levels of depression, which is consistent with studies done in other populations.

In summary, spiritual perspective is influenced by culture, ethics, values, and morals. The spiritual perspective of expressed spiritual values and beliefs are quantifiable measures of spirituality. Spirituality, as assessed by spiritual perspective, is considered a resource to physical, psychological and emotional health and lack of spirituality can be detrimental to health. Possible outcomes of spirituality are sense of peace, improved quality of life, sense of well-being, and self-actualization (Bolletine, 2001; Coyle, 2002; Craig, et al., 2006; Meyer, 2003; Mok et al., 2009). Not all outcomes of spirituality are positive. Some negative outcomes are guilt, inner conflicts and beliefs that lack of spirituality lead to misfortunes, negative emotions, and loss of serenity (Bolletino, 2001; Carson, 2008). Religion, religiosity and spirituality are related but different concepts. An individual may be spiritual but not religious or religious but not spiritual. Most of the research done on spirituality and health outcomes has been conducted on various vulnerable groups, but only one study was found that specifically addressed the contribution of spirituality on depression in rural residents with chronic health conditions (Craig et al., 2006). Even though research demonstrates a positive correlation between health outcomes and the level of spirituality a person relates, much more research is needed to fully explore the relationship in other vulnerable groups, such as rural inhabitants.

Spiritual Perspectives and Perceived Health

The relationship between spiritual perspectives and perceived health was examined in a variety of research studies. The studies suggested spiritual perspectives

affected perceived physical, psychological and/or social health. Chester et al. (2006) investigated how spirituality in African American women related to health promoting behaviors. There were positive associations in individuals who practiced healthy eating and physical activity with stress management, health responsibility and spiritual growth. A qualitative study (Daaleman et al., 2001) explored patient-reported health related spirituality. The participants who reported spiritual core beliefs viewed their life events and experiences in a positive manner. Better physical health and improved quality of life are reported by individuals who have spiritual beliefs regarding a loving God (Campbell et al., 2010; Leak et al., 2008).

Studies that attempt to show direct effects of spirituality on physical health have many limitations due to lack of psychometrically tested instruments and confounding variables on spirituality. A meta-analysis of 49 studies found positive religious coping is related to lower levels of distress, anxiety and depression. However, negative forms of religious coping is associated with increased levels of all three and poor psychological adjustment (Ano & Vasconcelles, 2005). Other studies have reported on the association between religious beliefs and coping in various patient populations including HIV/AIDs. The same studies found positive relationships between spirituality and religion and improved immune system functioning (Pargamenti, McCarthy, & Shah, 2004).

Significant positive relationships are found between spiritual perspectives, improved quality of life, well-being at the end of life and psychological well-being in pregnant women from Appalachia (Jesse & Reed, 2004), breast cancer survivors (Gibson, 2003; Leak et al., 2008), and terminally ill patients (Reed & Rosseau, 2007). Spirituality, as measured by spiritual perspectives, is seen as a protective factor against distress

(Humphreys, 2000; Leak et al., 2008), stress (Tuck et al., 2006), smoking (Jesse & Reed, 2004), anxiety (Davis, 2005), and depression (Dew et al., 2010; Dailey & Stewart, 2007; Jesse et al., 2005).

Spiritual Perspectives and Social Connectedness

The relationship between spiritual perspectives and social connectedness is significant. One of the defining attributes of spirituality is connectedness; connectedness to a higher being, to oneself, and to others. Connectedness to others relates to social connectedness. A sense of trust, belonging, and social identity, the defining characteristics of social connectedness, can be obtained in relationships involving people of the same faith or religion. The three dimensions of connectedness, connectedness to God, to others and to self, were expressed in a study of hospitalized African American Christians (Conner & Sanzero, 2004) and following a six week spirituality and stress management intervention in healthy community dwellers (Tuck et al., 2006). Krause and Bastida (2011) found older Mexican Americans who attend church more often have a stronger sense of social support and belonging and greater sense of personal control and perceived health.

More frequent attendance to church services and or religious gatherings results in greater social connectedness. Faith communities offer opportunities for like-minded people to meet frequently with a common goal. Faith communities are also founded on the principle of loving other people, offering physical, emotional and spiritual support, and providing a sense of belonging (Krause & Bastida, 2011).

Humphreys (2000) found sheltered, battered women with higher scores on the Spiritual Perspectives Scale (Reed, 1987) associated connectedness and spirituality with

their ability to deal with distress. Rew et al. (2004) reported a statistical significance between prayer in school aged children and social connectedness. The researchers postulated both constructs of prayer and social connectedness were part of a larger idea of spirituality.

Rural Population's Vulnerability to Poor Health

Rural residents are vulnerable populations due to limitations in socioeconomic and environmental resources and increased risk in the rural environment. In 2005, the Institute of Medicine's Committee on the Future of Rural Health Care published a report on the quality of rural health. The committee found that even though rural communities faced the same health quality challenges that urban communities do, there were additional factors that influenced the health needs of rural populations. These factors involved socioeconomic levels, health care needs, lack of healthcare access and distance to healthcare services of the rural populations.

Rural populations tend to be poorer and live below the poverty line (14%) more often than the urban counterparts (11%). In 2010, average per capita income of rural populations was \$19K compared to \$26K per capita income of urban populations. Nearly 24% of rural children live in poverty and 31% of the nation's food stamp recipients live in rural areas (National Rural Health Association [NRHA], 2010). According to the Council of Economic Advisors (2010) incomes are lower and poverty rates are higher in rural areas than in urban areas. In addition, the number of rural students pursuing education beyond high school and the educational attainment for working age rural populations are lower than urban populations.

Rural communities tend to be composed of older individuals due to a migration of younger people to urban areas for job opportunities. The 2010 United States Bureau of Census cites 14.1% of rural populations are 65 years of age and older compared to 12.8% in urban areas (2012). Twenty three percent of rural populations are Medicare beneficiaries compared to 20% of urban populations (NRHA, 2010). Retired people often move to rural communities and this could challenge the rural health care delivery systems. The elderly have more health care needs, more chronic conditions and more disabilities (NRHA, 2010; Leight, 2003).

The number of working age (20 to 64 years) rural residents is decreasing and the number of rural residents receiving disability assistance is increasing (NRHA, 2010). This interferes with job creation in the rural environment. Rural residents are less likely to have health insurance and more likely to be enrolled in public programs such as Medicaid, the Children's Health Insurance Program, Medicare, and Federal Food Stamp programs (NRHA, 2010). All of these factors: low incomes, decreased educational opportunities, and low-skill jobs, indicate lower socioeconomic status for rural communities.

There are higher incidences of chronic illness and rural residents tend to report poorer overall health than their urban counterparts (National Center for Environment Health [NECH], 2009). Research shows the health of rural residents is declining even though the general health of Americans is improved in the past 25 years (NCEH, 2009). According to the NRHA (2010), 28% of rural adults describe their health status as fair/poor compared to 21% of urban adults.

Compared with urban residents, rural inhabitants are less likely to engage in preventative health such as health screenings (i.e. pap tests, mammograms), immunizations, and use of seat belts. There is more exposure to health risk factors such as higher rates of smoking, decreased levels of exercise, and increased rates of obesity in rural communities. Nineteen per cent of rural adolescents, ages 12-17 years of age are smokers compared with 11% of urban adolescents (NRHA, 2010). Rural dwellers, young and old, have less than optimal nutrition, sleep patterns, and fewer dental checkups and physical examinations than their urban counterparts (Institute of Medicine, 2005; Leight, 2003).

A 2009-2011 survey of 688 rural health experts conducted for the Rural Healthy People 2020 revealed mental health and mental disorders ranked third in the top ten priorities for rural health issues (Bolin & Bellamy, 2011). Access to quality health care and diabetes were first and second on the list of priorities. In the Rural Healthy People 2010 Report, mental health and mental disorders were the fourth most often identified rural health priority in a survey of state and local rural health experts (Gam et al., 2003). These same experts identified major concerns with mental health care access, suicide rates, and levels of depression and anxiety disorders among the rural populations. Suicide rates among rural males and children are significantly higher than their urban counterparts and the rate of suicide in rural females is escalating as well (Gam et al., 2003; NRHA, 2010).

Other challenges to health in rural communities are distances to health care resources and decrease in numbers of health care providers. In terms of environmental resources relating to health, there is evidence that the majority of rural communities are

medically underserved. The lack of health care services correlates directly with lack of economic development (Bushy, 2000). The shortage of health care providers in rural settings is a national and international problem and this shortage directly relates to reduced access to health care for rural residents. Despite the fact that 25% of the United States population lives in rural areas, only about 10% of physicians practice in these areas. Of the designated Health Professional Shortage Areas in the United States, 2,157 are in rural and frontier areas compared to 910 in urban areas. Volunteers make up 57 to 90% of the first responders in rural areas. Concerning oral health, there are 40 dentists per 100,000 in rural areas compared to 60 dentists per 100,000 in urban areas (NRHA, 2010; Institute of Medicine, 2005).

Another consideration in disparities in health care access and resources leading to increased vulnerability of rural residents are the geographic barriers to accessing medical care. Distance and isolation cause long travel times to emergency services and health care facilities which can be life threatening in acute emergencies. The lack of access to health care providers and the distance challenges often lead many to put off needed care. As a result, the health status of rural communities is often compromised. This is seen in the divergence between metropolitan and non-metropolitan mortality rates with a slower decline of only 0.73 percent in the non-metropolitan rate compared to 1.27 per cent decline in the metropolitan rate (Council of Economic Advisors, 2010).

However, the influence of health care services on health status is not as strong an influence as other risk factors such as poverty, lack of education, environmental conditions and racism. Strategies to address disparities and inequalities in health status must address not just the unequal access to health care and lower levels of health care

quality when access is available. Strategies must also address adverse social and economic conditions faced by vulnerable populations including rural inhabitants (Lavizzo-Mourey et al., 2005). Lack of social resources impacts health inequalities as much as poverty or lack of material resources. Marmot (2005) convincingly argues that there are examples of similar poor populations with very different health outcomes and contends the social processes and vast inequality in wealth between classes are responsible for these differences. Countries that have sought to address the social conditions, like Sweden, Columbia, and the United Kingdom, have seen improvements in their citizens' health (Marmot, 2005).

Depression

Mood disorders, which include depression, affect an estimated 9.6% of adults in the United States (World Health Organization, 2004). An estimated 2.6 million rural adults suffer from depression and depression is the mental health issue most often seen in rural primary health care settings (Probst, et al., 2006; Kemppainen et al., 2009). The prevalence of depression is higher in rural adults (6.1%) than urban residents (5.2%); a slight but significant difference (Probst et al., 2006; Oguzturk, 2008). Nearly 46.67% of rural individuals who report depressive symptoms feel the symptoms affect their level of functioning and quality of life (Probst et al., 2006).

The Institute of Medicine (2005) found the prevalence of mental health conditions comparable between rural and urban residents but also found some important exceptions. Rural communities have a higher incidence of suicide attempts and suicide than urban areas. Rural residents are also less likely to seek help for mental health issues. Rural

women and elderly rural residents have greater risk for depression, especially when associated with chronic illnesses, than their urban counterparts.

Factors such as higher poverty rates, lower education attainment, isolation, and less access to medical and mental health services place rural residents at higher risk for health needs including mental health needs. Untreated depression has a negative effect on health and may get worse over time. Rural residents are less likely to seek assistance for depression and are more likely to attempt to self-manage depressive symptoms. Self-treatment often consists of alcohol and drug use. Some respondents use religious or spiritual coping skills as a primary self-treatment for depression (Kemppainen et al., 2009).

A lack of mental health providers in rural areas leads sufferers of depression to seek help from primary care providers. Seventy five percent of the 1,253 rural counties with populations of 2,500-20,000 have no psychiatrist and 50 percent of those counties do not have a social worker or clinical psychologist either. “Twenty percent of rural counties lack any mental health services as compared to 5 percent of urban counties” (Institute of Medicine, 2005, p. 237).

The result of the lack of mental health providers is the provision of the majority of mental health care in rural areas is delivered by primary care clinicians. Primary care providers are forced to treat the rural patient’s depression with pharmacological agents only instead of the accepted co-treatment of pharmacological agents and cognitive behavior therapy due to lack of counseling services (Fortny, Harman, Xu, & Dong, 2009). Adherence to antidepressant medication therapy is poor and frequently discontinued too soon (Kemppainen et al., 2009).

In summary, depression and mental health disorders are a major concern in rural populations. Lack of mental health resources, lack of community resources, and low SES levels are major barriers to address this health issue. Individual characteristics of rural residents such as reluctance to seek help, tendency toward self-management and lack of adherence to treatment all contribute to decreased treatment of depression in these communities.

Spirituality and Depression

Spirituality and spiritual perspectives appear to be protective factors against depressive symptoms (Dew et al., 2010; Dailey & Stewart, 2007; Jesse et al., 2005). Higher levels of spirituality are related to lower levels of depression, anxiety and stress (Jesse & Reed, 2004; Craig, et al., 2006; Dailey & Stewart, 2007). Craig et al. (2006) surveyed 111 rural inhabitants with at least 1 chronic illness in order to examine the relationships between spirituality, hope, depression, social support and well-being. The respondents who claimed an active spiritual life had high levels of hope and well-being and low levels of depression.

A longitudinal study of 145 outpatient psychiatric patients age 12-18 years found spiritual perspectives such as daily spiritual experiences, forgiveness, positive religious coping, positive religious support, organizational religiousness, and self-ranking as spiritual/religious all correlated with lower depressive symptoms. Negative religious coping, negative religious support and loss of faith correlated with greater depressive symptoms (Dew et al., 2010).

Social Connectedness and Depression

Research indicates an inverse relationship between social connectedness and depression. Increase in social connectedness is predicative of a decrease in depression (Armstrong & Oomen-Early, 2009). Social connectedness is considered another protective factor against depressive symptoms (Allen et al., 2012; Moscardino et al., 2010; Donald et al., 2006; Donald & Dower, 2002).

Czyz et al. (2012) investigated the effect of post-hospitalization change in peer, family, and nonfamily adults connectedness with adolescents who had attempted suicide and the extent to which the change in connectedness “predicted suicide attempts, severity of suicidal ideation, and depressive symptoms across a 12 month follow-up period among inpatient suicidal adolescents”(p. 214). The results found improvements in peer and family connectedness led to fewer suicide attempts, suicidal ideations and less severe depressive symptoms. The results demonstrate improved connectedness is linked to improved outcomes following hospitalization.

A longitudinal study of 2678 adolescents examined the associations between social and school connectedness in early secondary school and mental health, substance use, and academic success 2-4 years later. The findings indicated having good social and school connectedness is associated with the best outcomes including decreased depression (Bond et al., 2007). However, having good social connectedness and poor school connectedness was associated with increased depressive symptoms as well as increased substance use.

A second longitudinal study of 145 adolescent psychiatric outpatients found greater levels of substance abuse and lower levels of social support correlated positively

with Beck Depression Inventory II scores which indicate greater depressive symptoms (Dew et al., 2010). Low social connectedness can be a risk factor of adolescent and young adult depression (Lee et al., 2002; Karcher, 2005; Williams & Galliher, 2006; Frydenberg et al., 2009). Boyd, et al. (2008) found a positive relationship between mental health outcomes and social connectedness when examining federally funded youth activities in Australian rural communities.

Although the majority of the literature is examining social connectedness and depression in adolescents and young adults, Person et al. (2007) investigated disrupted social connectedness in 28 Dominican women hospitalized with chronic filarial lymphedema. Findings include disrupted social connectedness resulted in outcomes such as depressive symptoms, disrupted social support, poor health outcomes, and psychological distress. Re-instituting social relationships that already existed relieved the outcomes better than trying to develop new social connections.

Summary

The Framework for Studying Vulnerable Populations (Aday, 1994, 2003) provided the foundation for this research study and takes into consideration both individual and community characteristics that may lead to the vulnerability of communities and individuals, unlike population health theories that are more limited in scope. Clear relationships, either direct or inverse, are seen in the framework between resource availability, relative risk of the vulnerable population, and health status. The ultimate goal of applying the framework to a vulnerable population is to identify ways to improve the individual and community well-being by studying the resources and risks of that population.

Vulnerable populations are defined as “social groups who have an increased susceptibility to adverse health outcomes” (Flaskerud & Winslow, 1998, p. 69). Rural populations are at high risk of being vulnerable due to decrease resource availability and increased risk factors. The literature supports the premise that rural inhabitants’ vulnerability includes mental health issues, especially depression. Lack of resources including mental health resources and high poverty rates contribute to the prevalence of depression in rural populations (National Rural Health Association, 2010; Institute of Medicine, 2005). Lack of individual resources of rural residents such as the ability to seek help, financial and educational deficiencies to obtain treatment are contributing factors as well.

Outlined in the Framework for Studying Vulnerable Populations, lack of social resources are important considerations when examining health outcomes. A strong relationship between social connectedness and spiritual perspectives has been noted in the literature. Connectedness to others is a defining characteristic of spirituality as many individuals meet their need for social connectedness in their faith communities. However, there were no studies found which investigated the spiritual perspectives and social connectedness in rural populations from a vulnerable population’s viewpoint.

The goal of this research study was to identify the relationship of the social resources on the perceived health status of rural residents. The social resources examined in this study were social connectedness or the “ties that bind people together” (Aday, 1994) and spiritual perspective; a resource to physical, psychological and emotional health. Identification of these relationships will offer insight into the value of social connectedness and spiritual perspectives on health for these individuals. A more

thorough understanding of these relationships will assist rural health care providers and community leaders in identifying and addressing the unique physical, social, and psychological health needs of persons within rural populations. This study will also contribute to the existing body of vulnerable population literature by identifying individual resources of social determinants of health that may contribute to decreased levels of depression and perceived health of rural inhabitants.

CHAPTER III

METHODOLOGY

The purpose of this research study was to examine the relationships between the resources of social connectedness and spirituality on the level of self-reported depression and perceived health of rural inhabitants. The conceptual model for this study was guided by the Framework for Studying Vulnerable Populations (Aday, 1994, 2003). The resources investigated were social connectedness and spiritual perspective and the relationship of these resources on the level of depression and perceived health of the individual.

Research Design

The research design for this study was a descriptive, cross-sectional design using survey methods. There were two independent variables under consideration in this study: social connectedness and spiritual perspective. The two dependent variables were self-reported depression and perceived health. The focus of the design was examination of the predictive relationships between each independent variable and each dependent variable using hierarchical multiple regression analysis. Age, gender, income levels, ethnicity, length of time the participant had resided in the county, how many family members lived within 30 miles of the participant and if the participant lived in incorporated or unincorporated areas of the county were collected as demographic data to

adequately describe the study sample and added to the regression analysis to control for any confounding effects of these variables on the variables of interest.

Research Context

The context of this research study was a convenience sample of rural residents in one rural county located in western Colorado. The county met the definition of rural based on the United States Bureau of Census's and the Omnibus Appropriations Bill of 2004 definition of rural areas. Rural areas are those areas with 2,500 or less population and any incorporated city or town of 20,000 persons or less (Institute of Medicine, 2005, United States Bureau of Census, 2010). The demographics of the county based on the 2010 census show a population estimate of 56,389 residents (United States Bureau of Census, 2011). This estimate was further broken down into six towns with populations of 9,566 in the most populated town and 1,079 in the least populated town. The population of the six incorporated towns totaled 33,583 residents (59.55%). The population of the unincorporated county areas was 22,806 residents (40.44%). There were 2,947.56 square miles in the county which equated to 19.1 persons per square miles. There were no designated metropolitan areas in the county (United States Bureau of Census, 2011; Colorado Department of Local Affairs, 2010).

A closer look at the 2010 county's demographics revealed 73.1% of the population was 18 years or older, with 8.9% of that number over the age of 65 years, 48% was female and 94% was white. Persons identifying as white but not Hispanic or Latino comprised 68.5% and the Hispanic or Latino population comprised 28.6%. The percentage of people age 25 or older who had a high school diploma equaled 85.6% and those with a bachelor's degree or higher equaled 24.4%. The median annual income in

2010 was \$28,457 and 9.2% of the county lived below the poverty level (United States Bureau of Census, 2011).

Sample and Participant Access

The sample was obtained through a process of convenience sampling at three retail stores each in a different area of the county after permission for the study was granted by the Institutional Review Board at the University of Northern Colorado (Appendix A). The retail stores included a locally owned grocery store and two grocery stores that are part of a nationwide chain. Each store was located in different towns in the county. Permission to conduct the data collection of the research study at each establishment was obtained from all three facilities' managers (Appendix B). Data were collected over a period of five Saturdays. A table was set up in a prominent spot at each store with flyers advertising the event on the table (Appendix C). The researcher approached shoppers and asked if they would be willing to participate in the study and complete the survey. Subjects were given an informed consent letter describing the purpose of the study, the survey, and directions for completing the survey (Appendices D and E). Participants were under no obligation to participate and this was explained in the consent letter.

Due to poor participation at the retail stores, IRB amendments were submitted and granted to add two additional data collection sites (Appendix A). One was a local health fair and the other was held at a community fun run. Permission to collect data at each venue was granted by the coordinators of the events (Appendix B). The same procedures were used at these additional venues as at the retail stores.

Inclusion criteria were adults who were 18 years or older who had the ability to understand and read English. Excluded were persons less than 18 years of age, inability to understand or read English, and adults over 18 years of age residing in nursing homes, prisons, or other non-residential settings.

All possible means of protecting the identity of the subjects were taken.

Anonymity could not be guaranteed as the researcher recruited participants at retail stores and community events throughout the county. Confidentiality of the subject's responses was achieved through several means. All participants were instructed to omit any identifying information on the survey they completed. The researcher provided black ink pens for the participants to use to answer the surveys in order to have the same color of ink on all surveys. The surveys were placed into a slotted, locked box by the participants and kept with the researcher until the necessary number of surveys was completed. All data will be kept in a locked file cabinet in the research advisor's office and no one will have access to the data except the student researcher and her advisor.

A small table and chairs were set up in a quiet, comfortable area at the retail stores and community events for participants to sit while completing the survey. Participants were given time to thoughtfully answer the questionnaire without feeling rushed or stressed.

Sample Size

Based on the research design and the demographics information, two power analyses were conducted to determine adequate sample size. Statistical assistance was obtained from Dr. Dick Carpenter, statistics professor at University of Colorado-Colorado Springs. A sample size calculation based on confidence intervals and

population size indicated in order to achieve a margin of error of 5%, with a 95% confidence interval and a population of 41,000, a sample size of 380 was needed. A traditional power analysis for regression indicates for an effect size of .20, a p -value of .5, seven regression predictors and power of .80, a sample of 70 was needed. A goal of 380 completed surveys was set to assure adequate power.

After three months of data collection at the retail stores and community events, 144 surveys were obtained. At that time preliminary regression analysis was conducted. The results indicated a fairly strong power was reached for all but two of the analyses. Based on these results, the decision was made to halt data collection period at 144 surveys and proceed to the data analysis phase of the study. The data analysis is detailed and explained later in this chapter.

Instrumentation

The four variables investigated in this study were social connectedness (independent), spiritual perspectives (independent), level of self-reported depression (dependent) and perceived health (dependent). The population of interest was rural residents. These variables and research question were chosen in order to contribute to the existing literature and the vulnerable population theoretical model by identifying individual resources of social determinants of health that may contribute to decreased levels of depression and perceived health of rural inhabitants.

The means for assessing the four variables in the study was through administration of a survey. The survey (Appendix E) consisted of five parts: a demographic questionnaire, the Revised Social Connectedness Scale (Lee et al., 2001), the Spiritual Perspectives Scale (Reed, 1987), the Center for Epidemiologic Studies

Depression Scale – Revised (Eaton, Smith, Ybarra, Muntaner, & Tien, 2004) and the Short Form-12 Version 2 Health Survey (Ware, Kosinski, & Keller, 1996). Permission was obtained for use of all instruments from the scale developer and/or company except for the Center for Epidemiologic Studies Depression Scale - Revised which is available in the public domain (Appendix F).

Demographics

Demographics were used to describe the sample of respondents as well as to identify confounding effects of any of the variables. In addition, the demographics collected allowed assessment of the similarities of the sample of respondents and the general population. The demographics survey consisted of a list of demographic items including age, gender, income level, race/ethnicity, length of time the subject had resided in the county, how many family members lived within 30 miles of the subject and if the subject lived in incorporated or unincorporated areas of the county. These variables were identified due to their possible confounding effects in the analysis.

Age was considered an important variable as perceived health may be influenced by age. The older a person was the less likely they were to perceive their health as excellent or very good. Men and women may respond to self-reported levels of depression and perceive health status differently therefore it was important to control for gender. The same was true for ethnicity. Different ethnic groups have unique cultural ideas about health and may perceive health status differently. Income level was important to identify as the higher the income level the more likely a person will have health insurance. Health insurance may increase the likelihood a person will receive more preventative health care services and thereby perceive their health as better (Leight,

2003). The length of time the subject had resided in the county of interest and nearness of family members might have influenced the level of social connectedness the individual reported. Whether the respondent lived in one of the incorporated towns in the county or in a rural, unincorporated area could have been a mediating factor to the social connectedness reported. In order to isolate the predictive relationship between social connectedness and spiritual perspective on the level of self-reported depression and perceived health, the above variables needed to be identified and controlled for in the regression analysis.

Ranges were given for age and income so respondents did not have to write a specific number to make the survey easier to do and to provide an additional layer of confidentiality. Age ranges were 18-30 years of age, 31-40 years of age, 41-50 years of age, 51-60 years of age, 61-70 years of age, 71-80 years of age and greater than 80 years of age. The annual income level ranges were: less than \$10,000/year, \$10,000-20,000/year, \$21,000-30,000/year, \$31,000-40,000/year, \$41,000-50,000/year; \$50,000-65,000/year; \$65,000-\$100,000/year; and greater than \$100,000/year. Gender, ethnicity and location of residence (either incorporated or unincorporated areas) were determined by participants' checking a box. Ethnicity was asked in the categories used by the United States Bureau of Census (2010): Asian, Black, Hispanic, Native American/Pacific Islander, White and Multi-race. The demographic question concerning how many family members live within 30 miles of the subject was answered by participant's filling in a number. Length of time a subject had resided in the county of interest was answered in terms of months or years.

Social Connectedness Scale - Revised

The Social Connectedness Scale - Revised measures social connectedness as a psychological sense of belonging or how the individual rates their closeness with others in the social environment. It reflects an independent sense of self and an individual's subjective awareness of others. The Social Connectedness Scale - Revised does not measure belongingness such as group memberships or loss of specific relationships (Lee et al., 2001).

The scale consists of 20 items on a 6 point Likert scale (1 = strongly disagree to 6 = strongly agree). There are 10 positively worded and 10 negatively worded items. Examples of negatively worded items are "I feel like an outsider" or "I don't feel related to most people" and examples of positively worded items are "I fit in well in new situations" and "I see people as friendly and approachable". The negatively worded items are reverse scored and summed together with the positive items. The item scores are summed and a range of 20 to 120 is possible. A stronger sense of social connectedness is reflected in a higher score (Lee et al., 2001).

In the original study by Lee et al. (2001) which examined the relationship between social connectedness, interpersonal behaviors and psychological distress in 100 college students, the Social Connectedness Scale-Revised's internal item reliability had an alpha coefficient of .92 which demonstrates good internal reliability in this population and setting. Significant differences by gender and race were not demonstrated in previous uses of the scale. In the same study, the revised edition of the Social Connectedness Scale demonstrated good test-retest correlation ($r = .96$) (Lee et al., 2001). Convergent validity was evidenced by the scale correlation with measures of collective

self-esteem and negative correlation with the concepts loneliness, social distress and avoidance ($r = -.57$), depression, hostility, and social discomfort (Lee et al., 2001).

A second study by Lee et al. (2008) examined social connectedness as distinct from extraversion and as a mediation variable in the relationship between extraversion and subjective well-being in a college student sample ($N = 205$) and a sample of lesbian, gay, and bisexual individuals ($N = 148$). Factor analysis indicated social connectedness was a unique construct from extraversion in the college sample. A two-factor solution was suggested with factor 1 containing 18 of the 20 Social Connectedness Scale-Revised items and factor 2 contained all of the extraversion items and 2 of the Social Connectedness Scale-Revised items. The same results were noted in the lesbian, gay, and bisexual sample (Lee et al., 2008).

Spiritual Perspective Scale

The Spiritual Perspective Scale measures the subjects' perceptions of the extent to which they hold spiritual beliefs and values and participate in spiritually-related activities. Spirituality is defined broadly so organized or non-organized expressions of spirituality can be used. Only one item uses the word God and it is accompanied by "or a higher power" as an alternative (Reed, 1987).

The Spiritual Perspective Scale is a 10-item scale which uses a 6-point Likert scale. Four items relate to the frequency of spiritual behaviors such as "How often do you engage in private prayer or meditation?" These item's choices include 1 = Not at all, 2 = less than once a year, 3 = about once a year, 4 = about once a month, 5 = about once a week, and 6 = about once a day. Six items relate to spiritual beliefs, such as "My spirituality is a significant part of my life". The belief items choices are 1 = strongly

disagree, 2 = disagree, 3 = disagree more than agree, 4 = agree more than disagree, 5 = agree, and 6 = strongly agree. Higher scores indicate a higher level of spirituality or spiritual perspective (Reed, 1987).

Reed reported the psychometric properties of the Spiritual Perspective Scale are good. Initially the scale was tested on over 400 adults of all ages and variety of health statuses. The Spiritual Perspective Scale has been used since 1987 in many studies and the reliability and validity of the scale have been upheld. The reliability using Cronbach's alpha was consistently rated above .90 with little redundancy among items (Reed, 1987; Jesse & Reed, 2004; Reed & Larson, 2005; Dailey & Stewart, 2007; Reed & Rosseau, 2007). The average inter-item correlation's range was within .54 to .60 across the groups. All scale items correlations were above .60. Criterion-related and discriminate validity were demonstrated with the Spiritual Perspective Scale in many studies (Reed & Larson, 2005; Reed & Rosseau, 2007; Reed, 2008).

Construct validity was evidenced by respondents who reported a religious affiliation scored higher on the Spiritual Perspective Scale in the three groups of the original study (Reed, 1987). Humphreys (2000) found in a study of 50 women in a battered women's shelter, the women who scored higher on the Spiritual Perspective Scale participated in a higher number of spiritual practices. Age was positively correlated with higher levels of spirituality and higher levels of spirituality were negatively correlated with symptoms of psychological distress (Humphrey, 2000).

Dailey & Stewart (2007) recently tested the psychometric characteristics of the Spiritual Perspective Scale in a sample of 102 pregnant African-American women. The internal consistency in this study was .91 with a range of corrected item-total correlations

of .54-.85. The internal consistency for the three groups in Reed's original study ranged from .93 to .95 (1987). In the Dailey and Stewart study (2007) the Spiritual Perspective Scale correlated positively with church attendance, religiosity and self-reported spirituality and negatively with depression, anxiety and stress.

Center for Epidemiologic Studies Depression Scale - Revised

The Center for Epidemiologic Studies Depression Scale - Revised is a revised version of the original scale developed by Radloff (1977) and designed to more reliably reflect the nine primary symptoms of a major depressive episode and general dysphoria according to the American Psychiatric Association's DSM-IV criteria (American Psychiatric Association, 2000; Eaton et al., 2004). The Center for Epidemiologic Studies Depression Scale Revised items measure sadness (dysphoria), loss of interest (anhedonia), appetite, sleep, thinking/concentration, guilt/worthlessness, fatigue, movement and suicidal ideation. This scale was not designed to provide clinical diagnostic criteria but to offer health care providers a screening tool for depression. Further diagnostic evaluations should be conducted if the person scores high for depression on this depression scale (Radloff, 1977; Eaton et al., 2004).

The Center for Epidemiologic Studies Depression Scale - Revised consists of 20 items on a 5 point Likert type scale. Respondents are given instructions to identify how often they might have felt and behaved in certain time frames ranging from 0 = not at all or less than 1 day, 1 = 1-2 days, 2 = 3-4 days, 3 = 5-7 days, and 4 = nearly every day for 2 weeks. Revisions made to the Center for Epidemiologic Studies Depression Scale were the addition of the last time frame "nearly every day for 2 weeks", simplification of two existing items, removal of items which failed to meet the modern criteria of

depression and addition of items which reflect loss of interest, psychomotor movements, and suicidal ideations (Eaton et al., 2004). The higher the score is indicative of more depressive symptoms occurring more frequently. The range for scores is 0-80 with a mean range of 0-4.

Van Dam and Earleywine (2011) conducted a validation study of the Center for Epidemiologic Studies Depression Scale Revised using a large community sample ($N = 7,389$) and a smaller student sample ($N = 245$). “The Center for Epidemiologic Studies Depression Scale Revised exhibited good psychometric properties, including high internal consistency, strong factor loading and theoretically consistent convergent and divergent validity with anxiety, schizotypy, and positive and negative affect” (Van Dam & Earlywine, 2011, p. 128). The internal consistency was indicated by a Cronbach alpha of .92 - .93. The inter-item correlation was .94 - .97 indicating possible redundancy. Convergent validity was demonstrated in the above study with a large positive correlation between the Center for Epidemiologic Studies Depression Scale - Revised and cognitive and somatic anxiety measured by the State-Trait Inventory for Cognitive and Somatic Anxiety ($r = .737$ and $r = .653$; $p < .01$). A medium positive correlation was seen between the Center for Epidemiologic Studies Depression Scale - Revised and the Schizotypal Personality Questionnaire – Brief ($r = .436$ and $r = .426$; $p < .01$) and negative affect ($r = .576$; $p < .01$). Divergent validity was noted in a negative correlation between the Center for Epidemiologic Studies Depression Scale - Revised and positive affect ($r = -.263$; $p < .01$). Results indicated the Center for Epidemiologic Studies Depression Scale Revised was a reliable and valid instrument for use with general populations. An additional advantage to this scale is it is available free of cost.

Short Form-12 Version 2[®] Health Survey

The Short Form-12 Version 2[®] Health Survey is designed to measure eight domains of health-related quality of life. The Short Form-12 Version 2[®] Health Survey is a self-reported, multi-purpose measure consisting of 12 items on a 5 point Likert scale. The eight domains of health are: Physical Functioning, Role Limitations due to Physical Functioning, Bodily Pain, General Health Perception, Vitality, Social Functioning, Role Limitations due to Emotional Problems and Mental Health. The data obtained from the 8 subscales are aggregated to provide summary measures of the respondent's physical health and mental health (Ware et al., 1996; Ware, Kosinski, Turner-Bowker, & Gandek, 2002; Ware et al., 2010).

The Short Form-12 Version 2[®] Health Survey is a shortened and revised version of the original Short Form-36[®] Health Survey developed by Ware (1990). A subset of 12 items from the Short Form-36[®] was selected to yield Physical Component Summary and the Mental Component Summary scores comparable to the original scale. The Short Form-12 Version 2[®] Health Survey contains one item for each of the eight health domains and the items were taken directly from the Short Form-36[®] Health Survey (Ware et al., 1996; Ware et al., 2002; Ware et al., 2010).

The Short Form-12 Version 2[®] Health Survey has a reported internal consistency reliability of .91 for the Physical Component Summary (PCS) measure and .87 for the Mental Component Summary (MCS) measure (Ware et al., 2010). The health domain scale reliability, estimated by correlating each Short Form-12 Version 2[®] Health Survey scale with the theta score for its corresponding item bank, range from .64 to .86. Ware et al. (1996) compared the Short Form-12 Version 2[®] Health Survey and the Short Form-36

Version 2[®] Health Survey surveys in order to observe how well the Short Form-12 Version 2[®] Health Survey reproduces the PCS and the MCS scores of the Short Form-36 Version 2[®] Health Survey. The two test-retest correlations were observed at .89 (PCS) and .76 (MCS) in a general U.S. population ($N = 232$). Construct validity was evident (.95 and .96 respectively). The criterion validity was evidenced by how well SF-12[®] reproduces the PCS and MCS scores of the SF-36[®]. Convergent and discriminatory validity was judged adequate and good in this study.

There are numerous studies listed in both editions of the User's Manual for the Short Form-12 Version 2[®] Health Survey which attest to the validity of this survey's health domain scales and component summary measures (Ware et al., 2002; Ware et al., 2010). Evidence of construct validity was demonstrated in findings from factor analysis. Tests of convergent and discriminant validity were documented as well as criterion validity as evidenced by correlations with other similar measures (concurrent validity), relationships with future events such as hospitalization (predictive validity) and inclusion in randomized controlled trials. Content validity was supported by the content representing the health domains being included in widely used health surveys (Ware et al., 2010).

Several studies worldwide have examined the psychometric properties and factor structure of the Short Form-12 Version 2[®] Health Survey. Overall results have showed the instrument as a reliable and valid measure that can be used in a variety of groups. A recent validation study of the Short Form-12 Version 2[®] Health Survey was conducted involving a large sample of a general population ($N = 3685$) in Tehran, Iran (Montazeri et al., 2011). The researchers discovered satisfactory internal consistency as evidenced by a

Cronbach's alpha for the PCS-12 of .87 and for the MCS-12 of .82. In general, the results of the study indicate “the SF-12v2[®] is a reliable and valid measure of health-related quality of life among Iranian population” (Montazeri et al., 2011, p. 12).

Lam, Lam, Fong, and Huang (2011) investigated whether the Short Form-12 Version 2[®] Health Survey was a valid and equal replacement for the Short Form – 36 Version 2[®] Health Survey for the Chinese. Their findings indicated good internal consistency and test-retest reliabilities (range .67 - .82). The Short Form-12 Version 2[®] summary scores explained > 80% of the total variances of the Short Form – 36 Version 2[®] scores. Construct validity was confirmed by significantly lower Short Form-12 Version 2[®] scores in subjects with chronic diseases than those without. Relative validities were greater than 0.7 between the two surveys. The researchers concluded the Short Form-12 Version 2[®] Health Survey was a valid and reliable instrument that was equivalent to the Short Form-36 Version 2[®] Health Survey (Lam et al., 2011).

Procedure

The dissertation proposal was filed in the University of Northern Colorado's Graduate School in December, 2012. Application to the University of Northern Colorado's IRB was made and exemption status was granted December 27, 2012 (Appendix A). Data collection began in January, 2013. Amendments to the IRB application to add two additional collection sites were requested and granted (Appendix A).

Dates were arranged with the three retail stores in January and February to set up a data collection table on separate Saturdays. Two extra data collection dates were arranged at two of the retail stores due to the low volume of participants. Flyers were

displayed explaining the study and advertising the financial incentive (Appendix C). Each participant was eligible to win a \$100.00 gift card to the participating store which was awarded in a drawing at the conclusion of the data collection period. These flyers were placed at the researcher's table. Subjects who appeared to be 18 years of age or older were approached by the researcher as they entered the store. They were told briefly about the study and asked if they would be interested in participating in the study. Those who indicated interest in participating were given a consent letter describing the purpose of the study, directions for completing the survey and the survey (Appendices D and E). The potential participants were assured that there was no obligation to participate and that they could stop the survey without penalty at any time. The consent letter informed participants that the only time requirement would be the completion of the survey which took an estimated 10-15 minutes. Several chairs were available at a table in a comfortable area for participants to use to complete the survey.

The same procedure was used at the 2 additional data collection sites. One was at a community recreation center during a health fair. The researcher had a table and chairs set up with other community resource organizations. The second additional data collection site was set up at the local hospital where a community 5K walk/run fundraiser was held. Again, a table and chairs with the research flyers were set up and potential participants were approached by the researcher.

The subjects were asked to place their completed survey into a large, slotted, locked box and if they desired, place a separate entry form for the drawing of three \$100.00 gift cards into the smaller, slotted, locked box. The entry forms for the gift card drawings required participants to provide their phone numbers and names on the form.

Entry forms were then placed into the slotted, locked box that is separate from the locked box used to collect the surveys. Three drawings were conducted and 3 names were picked blindly from the box by an employee not associated with the researcher. Each individual whose entry form was drawn was notified by phone and the gift card was mailed to the address they provided to the researcher at the time of the phone call.

Analysis Plan

The analysis plan was developed with consultation of the statistician, Dr. Carpenter. The scores for all four surveys were calculated per the published scoring guidelines for each and entered into an Excel spreadsheet along with the demographic data collected. There was one exception to the scoring of the surveys which is described below. Analysis of the data was conducted using the statistical software program, Statistical Package for the Social Sciences (SPSS™).

The descriptive demographic data variables collected were 1) age, 2) gender, 3) income level, 4) race/ethnicity, 5) length of time the subject had resided in the county, 6) how many family members lived within 30 miles of the subject and 7) if the subject lived in incorporated or unincorporated areas of the county. Nominal variables include gender, race/ethnicity, and area of residence in the county (incorporated or unincorporated). The variables of age and income level were ordinal variables as the subjects were given ordered ranges for age and income levels from which to choose. Race/ethnicity data were collected using the United States Bureau of Census categories and included White/Non-Hispanic, African-American, Native American/Pacific Islander, Hispanic or Latino, Asian, and Multi-racial. The final two demographic characteristics were the continuous variables of the length of time a subject has resided in the county recorded in

months and how many family members live within 30 miles of the subject but are not in the same household.

Descriptive statistics analyzed and reported for the demographic variables were mean, standard deviation, frequencies, percentages and cumulative percentages. The demographic analysis allowed comparison of the population data to the sample data to assess for significant differences in the two.

The Social Connectedness Scale - Revised was scored on a 6 point Likert scale. There were 10 negatively worded items which were reverse scored and summed together with the 10 positively worded items. The range of possible scores for the Social Connectedness Scale - Revised was 20 to 120. The higher the score reflected a stronger sense of social connectedness (Lee et al., 2001).

The Spiritual Perspective Scale scoring instructions required the 10 items on a 5 point Likert scale be summed and the mean calculated. The range of possible scores was 0-50; mean range of 0 – 5. The higher an individual's score on the Spiritual Perspective Scale, the higher the level of spirituality or spiritual perspective (Reed, 1987).

The Center for Epidemiologic Studies Depression Scale - Revised scoring instructions detailed summation of the 20 items on a 5 point scale and calculation of the mean. The range of possible scores was 0 - 100, with a mean range of 0 – 5. The higher the score, the more often symptoms of depression occur (Eaton et al., 2004).

The Short Form – 12 Version 2[®] Health Survey scores were calculated by summing the 10 items with a 5 point Likert scale and converting the other 2 items which were on a 3 point Likert scale to a 5 point by making a 1 = 1, 2 = 3 and 3 = 5. After adding up all the scores, the mean was calculated. This method did not follow the survey

scoring instructions which required converting the raw scores into z scores so that individual scores could be compared to everyone else's scores. Since the purpose of this study was to understand a person's perceived health status based on the original scale rather than relative to everyone else's, this alternative method of scoring was developed in consultation with Dr. Carpenter and used for this analysis. The mean, standard deviation, reliability coefficient and potential/actual ranges for all four scales were calculated and reported.

The sample data were analyzed using hierarchical multiple regression to determine how much of the variance in the dependent variables (depression and perceived health) were attributable to each of the independent variables (social connectedness and spiritual perspective). This approach allowed determination of the effect of each independent variable on the dependent variable.

A two-step process was followed. A baseline model with the demographic variables (gender, age, race/ethnicity, income, time a subject lived in the county, area of the county where the subject lived, and number of family members who lived within 30 miles of subject) entered as a block was conducted with one of the dependent variables. Next an independent variable was introduced in the second step of the regression analysis. The unstandardized beta, the standard beta error, the standardized beta and confidence intervals were reported. In addition the F ratio, significance (p), variance (R^2) and change in variance (ΔR^2) were reported for each 2-step regression model. The models included 1) social connectedness as the independent variable and perceived health as the dependent variable, 2) social connectedness as the independent variable and self-reported depression as the dependent variable, 3) spiritual perspective as the independent

variable and perceived health as the dependent variable and 4) spiritual perspective as the independent variable and self-reported depression as the dependent variable. In addition, two models were conducted to analyze the effects of social connectedness and spiritual perspective on perceived health and self-reported depression while controlling for the other independent variable.

Threats to Internal and External Validity

Threats to Internal Validity

Instrument reliability. Reliability of the study was dependent on the reliability of the quantitative instruments used. The reliability and validity of each measurement in previous works were described above. All measures have demonstrated acceptable reliability and validity measures in previous studies using these instruments and are considered accurate for measuring the variables each is designed to measure. In order to assure reliability of the different measurement instruments for this study, internal consistency was assessed using the coefficient alpha (Cronbach's alpha).

Other factors can affect the reliability of the instruments. The length of the survey or number of items is influential in self-reported scales. A delicate balance was required between having enough items to assure reliability and not so many items to cause fatigue in the respondents who were completing the surveys. There was a concern in the proposed study of respondent fatigue as the total number of items required was sixty nine (including demographic data). Wording the questionnaire and consent letter at a level understandable to a fifth grade reading level was also used to increase response accuracy. Providing a comfortable, quiet area for the participants to complete the survey was another method of increasing response rate and accuracy of answers. Inaccurate data

entry and scoring by the researcher was another threat. All data entries and scores was reviewed and rechecked twice by the researcher for accuracy.

Other threats to reliability occurred when surveys were not completed or were missing data. One method of dealing with incomplete surveys is to discard any incomplete questionnaire. When this is done, there is a potential threat to internal validity by removing surveys in a non-random manner.

For this study, two methods were used to deal with missing data. One was to assess for any systematic or non-random patterns to the missing data and this was done by careful review of each survey with missing data for blank items. Then an analysis was done for the missing data in order to identify if any patterns were significant. There were eight surveys with complete sections left blank as if the participants were deliberately skipping certain scales such as the depression or spiritual perspective tools. Feelings of discomfort or unwillingness to share their thoughts on these subjects may explain why the participants left these items blank. The missing data test was significant and therefore, bias was a concern. If there had been no significant pattern to the missing data, a deletion method to deal with the issue would be appropriate. But since there was significance in the missing data test, it was decided to conduct multiple imputations of the data (Polit & Beck, 2008; Baraldi & Enders, 2010; Carpenter, personal communication, 2013).

The second method of addressing missing data concerns was by conducting multiple imputations of the data followed by the regression analyses. These multiple versions estimated what the missing data might be thus allowing incomplete surveys to be included. There are three steps in this process: imputing the data, analyzing the data,

and pooling the results (Baraldi & Enders, 2010). For this study, five different data sets were imputed and analyzed in SPSS™. A ‘pooled’ data set which is the average of all five was then produced. This method was valuable due to the small sample size and to assure adequate power.

Another justification for using multiple imputations to deal with missing data was to reduce the possibility of subject bias. The reason subjects refuse to answer certain questions can introduce bias. An example might be why some people refuse to answer the income question. They might not want to answer because they make too much money or too little money. Those reasons are often correlated with how they answer other questions. Deletion of surveys with missing income data can cause the loss of other substantive responses that may impact the variance (Carpenter, personal communication, 2013). According to Polit and Beck (2008), the value of using multiple imputation strategies is the realistic reflection of the uncertainty of missing data. Multiple imputation technique is strongly recommended in the methodological literature as it is a sophisticated method to address missing data that mitigate the problems encountered in more traditional techniques such as deletion or single imputation (Baraldi & Enders, 2010).

Selection or non-response bias. Selection or non-response bias was a threat to internal validity in this study because of the sampling method. The participants were able to self-select whether they completed the survey or not. Thus, there was a risk that people who feel more socially connected would be more likely to complete the survey than those who don't. The researcher attempted to mediate this problem by approaching people as they enter the store and if they agreed to participate, asked them to complete

the survey then and not take the surveys with them. Also keeping the area quiet and calm may have helped those who are less socially connected feel more comfortable to participate.

Other selection bias issues occurred with the addition of the two other data collection sites. Since these sites were located at health promoting events (a health fair and a community fun run) people who were interested in their health and perceived themselves as healthy were more likely to attend and were possibly more likely to agree to complete the survey.

Threats to External Validity

External validity is concerned with how well the study results can be generalized or the extent to which the relationships observed in a study will hold true in other samples, conditions, or settings (Polit & Beck, 2008). As this study was conducted in one county in western Colorado, generalization to a larger population is not likely. Replication studies using similar samples in other rural settings would decrease this threat.

Another method to enhance external validity was to make the inclusion and exclusion criteria of the sample representative of the population (Polit & Beck, 2008). The inclusion criteria for this study were adults who are 18 years or older who have the ability to understand and read English. Excluded were persons less than 18 years of age, inability to understand or read English, and adults over 18 years of age residing in nursing homes, prisons, or other non-residential settings.

The inclusion and exclusion criterion were broad enough to generate a sample similar to the population. One limitation of concern was the possibility of not reaching

the Hispanic population of the county. Hispanics compose 28.6% of the county's population. It is unknown how many of these people are unable to read or speak English. It was difficult to obtain an adequate percentage of Hispanics to participate. This was a limitation of the study, but a thorough analysis of the data was completed to determine the similarity of the sample to the population of this rural region and is discussed in Chapter 5.

The collection of demographic data aided in assessing whether the sample was similar to the population. The demographic data collected were 1) age, 2) gender, 3) income level, 4) ethnicity, 5) length of time the subject had resided in the county, 6) how many family members lived within 30 miles of the subject and 7) if the subject lived in incorporated or unincorporated areas of the county. These variables were chosen because of their possible confounding effects in the regression analysis. Comparison of these characteristics of the sample to the population allowed analysis of how representative the sample is of the general county population.

Ethical Considerations and Protection of Human Subjects

Prior to all research activity, institutional review board approval was obtained from the university to ensure protection of the human subjects. The research study was granted the exempt review category as it presented no more than minimal risk to human subjects. In order to conduct ethical research, the consent letter offered full disclosure of the study goals, details of the study, type of data, procedures, nature of the commitment, potential benefits and risks of participation, utilization of the results and the assurance of privacy and confidentiality (Appendix D). In addition, all subjects were assured that participation was strictly voluntary and they would have the right to withdraw from the

study or withhold information at any time. The participants were also assured that the data would only be used for research purposes and that no information would be given to any other entity. These assurances were contained in the informed consent letter. All of the information and surveys were written in English. Consent was implied if surveys were completed and this statement was included in the letter.

Few threats to participants were anticipated in the research design. Because of the interaction between the researcher and participant, anonymity and confidentiality were a concern for this study. Anonymity could not be guaranteed as the researcher approached customers for participation. To ensure confidentiality the surveys did not ask for any identifying information and the subjects were asked to avoid adding any identifying information or markings on the surveys. After completion of the survey, the participants were asked to drop it in a locked box. Additionally, all the surveys will be stored in a locked file cabinet in the research advisor's office and all digital data (spreadsheets, statistical files) will be kept on a secure, password protected drive only accessible to the lead investigator and research advisor. All data will be destroyed within three years after completion of the lead investigator's dissertation defense or at the time of publication.

There was a small, potential risk of emotional discomfort when discussing attitudes, beliefs, and experiences of social connectedness, spirituality, and depression. There was also a risk of discomfort from the stress of taking an exam-like survey. The participants were informed of these risks in the informed consent letter and were assured that they could discontinue participation at any time. In addition, there was a possibility of the participants scoring high on the depression scale. Since the researcher did not have access to contact information for those who returned the survey, a phone number to a

local mental health resource organization was included in the informed consent letter with the instructions to call this group for consultation if depression concerns were discovered while taking the survey.

Summary

A descriptive, cross sectional study using survey methods was conducted to explore the relationship between the social resources of social connectedness and spirituality on rural resident's level of self-reported depression and perceived health. The sample was drawn from a rural county in western Colorado. The county fits the United States Bureau of Census (2010) and the Omnibus Appropriations Bill of 2004 definitions of rural areas. A convenience sample was obtained by recruiting participants at three local retail stores in the county. An informed consent letter was given to potential participants explaining the purpose of the study as well as other informed consent information (Appendix D). Consent was implied if the participant completes the survey. The participants were allowed to enter a drawing for a \$100.00 gift card to the store as an incentive to complete the survey. The entry forms for the drawing and the surveys will be kept in separate locked boxes. There were drawings for three gift cards and those participating in the study were eligible. Three winners were chosen at random and the gift cards were sent in the mail to each winner.

A survey consisting of a 7 item demographic questionnaire, the 20 item Social Connectedness Scale - Revised (Lee et al., 2001), the 10 item Spiritual Perspective Scale (Reed, 1987), the 20 item Center for Epidemiologic Studies Depression Scale - Revised (Eaton et al., 2004) and the 12 item Short Form-12v2[®] Health Survey (Ware, et al., 1996) was used to collect the data (Appendix E). No identifying information was included in

the survey and all attempts to maintain confidentiality were exerted. A power analysis revealed at least 380 completed surveys were needed; however, adequate power was gained with 144 completed surveys.

Descriptive analysis was completed on the demographic questionnaire and instrument statistics and reliability coefficients were analyzed. Multiple regression analysis using hierarchal regression methods were conducted to analyze the relationship between the two independent variables, social connectedness and spiritual perspective, on the two dependent variables, level of self-reported depression and perceived health of rural residents. A panel of demographic variables was controlled for in the regression analysis models.

The expectation was social connectedness and/or spiritual perspective would have a predictive, positive relationship on perceived health and a predictive negative relationship on the level of self-reported depression. The overall expectation according to the theoretical framework was the higher levels of social connectedness and/or spiritual perspective will lead to improved community and individual well-being.

CHAPTER IV

ANALYSIS

Populations at higher risk of adverse physical, mental and social health outcomes due to lack of resources and higher numbers of risk factors are considered vulnerable populations (Aday, 1994, 2003). Rural populations often fit the classification of vulnerable populations due to increased risk factors such as obesity, chronic disease and mental illness and lack of resources such as access to quality healthcare, social isolation, poverty and lack of social resources (Institute of Medicine, 2005; Leight, 2003). Rural populations rate their health lower than urban populations and are at higher risk of undiagnosed and/or self-treated depression than urban populations (National Rural Health Association, 2010; Probst et al., 2006).

Determinants of health include an individual's physical characteristics and behaviors as well as their physical, social and economic environments (World Health Organization, 2012a). When assessing the health status of individuals it is important to assess the social determinants of health, including the socioeconomic conditions, social interactions and social support (United States Department of Health and Human Services, 2011). These social resources have as much an impact on health as an individual's behaviors or the physical environment (Barr, 2008).

Social connectedness and spirituality are two social resources that have been shown to impact physical, mental and social health of individuals in a variety of populations (Ashida & Heaney, 2008; Cacioppo & Hawley, 2003; Hill, 2006; Chester et

al., 2006; Jesse et al., 2005; Jesse & Reed, 2004; Daaleman et al., 2001). Lack of social connectedness and spirituality can lead to increased vulnerability for developing poor health outcomes while feeling connected to others and having high levels of spiritual perspectives can have a positive impact on health (Lee & Robbins, 1998; Flaskerud & Winslow, 1998; Meyer, 2003; Mitchinson et al., 2008).

This research study was designed to determine the relationships between social connectedness and spiritual perspectives on the level of self-reported depression and perceived health in rural residents of a western Colorado county. The Framework for Studying Vulnerable Population (Aday, 1994, 2003) served as a conceptual framework for the study.

There were limited studies investigating the social resources of social connectedness and spirituality in the literature and none that analyzed the relationships of these resources on self-reported depression and perceived health in rural populations. The expectation was that social connectedness and spiritual perspectives would significantly predict the level of self-reported depression and perceived health. Exploration of these relationships will hopefully assist rural health care providers, researchers and community leaders in identifying and addressing individual and community physical, social, and psychological health needs and develop action plans to address these needs.

Power Analysis

A convenience sample of rural inhabitants was collected. The sample consisted of 144 subjects. In order to establish the number of subjects needed, two power analyses were conducted prior to data collection. A sample size of 380 was calculated based on

confidence intervals and population size indicated in order to achieve a margin of error of 5%, with a 95% confidence interval and a population of 41,000. In addition, a traditional power analysis for regression was done using an effect size of .20, a p -value of .5, seven regression predictors and power of .80. This power analysis indicated a sample of 70 was needed.

The sample power was calculated after 144 surveys had been collected. The analysis that examined the relationship between social connectedness and perceived health had a power of .83. The analysis with social connectedness and depression had a power of .99. The power values for the analyses that examined the relationship between spiritual perspective and perceived health and depression were much lower at .24 and .52. When both independent variables were added to the regression analysis the power was .99 for perceived health and .94 for depression.

These results indicated that there was an 83% chance of detecting an effect of social connectedness on perceived health and a 99% chance of detecting an effect of social connectedness on depression. This was sufficient power to allow confidence that any effect that might have existed was detected.

However, the power obtained in the spiritual perspective analyses indicated very low power. There was only a 24% chance of detecting an effect of spiritual perspective on perceived health and a 52% chance of detecting an effect of spiritual perspective on depression. This was not sufficient power to give the researcher confidence that any effect that might have existed was detected. A replication study with more participants to increase the power would be warranted.

Demographic Characteristics

The demographic data from this study included the following nominal variables: gender, income, race/ethnicity, and area of residence in the county (incorporated or unincorporated). The variables of age and income level are ordinal variables as the subjects were given ordered ranges for age and income levels from which to choose. Race/ethnicity data were collected using the United States Bureau of Census categories and the percentage of each group is listed in Table 1. However, for statistical purposes the ‘non-white’ groups were clustered together in the models as there were too few participants within each non-white group to do the regression analyses. Table 1 lists the demographic characteristics of the sample subjects.

Table 1

Demographic Characteristics of Sample Subjects: Gender, Age, Income, Race/Ethnicity, and Geographic Location

<i>N</i> = 144	<i>n</i>	%	<i>cumulative %</i>
Gender			
Female	102	72.86	72.86
Male	38	27.14	100.00
Age			
18-30	19	13.38	13.38
31-40	27	19.01	32.39
41-50	22	15.49	47.89
51-60	32	22.54	70.42
61-70	26	18.31	88.73
71-80	12	8.45	97.18
>80	4	2.82	100.00

Table 1 continued			
<i>N</i> = 144	<i>n</i>	%	<i>cumulative %</i>
Income			
<10,000	7	5.11	5.11
10,000-20,000	11	8.03	13.14
21,000-30,000	12	8.76	21.90
31,000-40,000	13	9.49	31.39
41,000-50,000	15	10.95	42.34
51,000-65,000	19	13.87	56.20
66,000-100,000	38	27.74	83.94
>100,000	22	16.06	100.00
Race/Ethnicity			
White	125	86.81	86.81
African American	1	0.69	87.50
Native American	2	1.39	88.89
Hispanic	14	9.72	98.61
Asian	1	0.69	99.31
Multi-Race	1	0.69	100.00
Area of County			
Unincorporated	58	42.34	42.34
Incorporated	79	57.66	100.00

The final two demographic characteristics were the continuous variables of the length of time a subject had resided in the county and how many family members lived within 30 miles of the subject but are not in the same household. The length of time a subject had resided in the county was measured in months and the average (mean) was 197.01 months. The number of family members living within 30 miles averaged 2.26. Table 2 lists the demographic data of the sample for these two characteristics.

Table 2

Demographic Characteristics of Sample Subjects: Time in County and Family Members Living in County

<i>N</i> = 144	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Range</i>
Time in County (months)	196.51	144	172.66	2	1020	1018
Family Members in County	2.22	0	4.8	0	40	40

Survey Instrument Characteristics

The survey instrument used in the study was made up of five sections: a demographic questionnaire, the Social Connectedness Scale - Revised (Lee et al., 2001), the Spiritual Perspective Scale (Reed, 1987), the Center for Epidemiological Studies Depression Scale - Revised (Eaton et al., 2004), and the Short Form-12v2[®] Health Survey (Ware et al., 1996). The Cronbach's α reliability coefficients for the four survey instruments used in the study ranged from .871 to .968 which indicated the instruments were internally consistent using an acceptable level of $\alpha = .8$ or greater.

Social Connectedness Scale - Revised

The Social Connectedness Scale-Revised measured social connectedness as a psychological sense of belonging or how the individual rated their closeness with others in the social environment. The instrument consisted of 20 items on a 6 point Likert scale (1 = strongly disagree to 6 = strongly agree). A stronger sense of social connectedness was reflected in a higher score (Lee et al., 2001).

Reverse scoring was required on the 10 negatively worded items after which all of the items were summed together. Scores were reported as the sums and not the mean, according to the scale developer (Lee et al., 2001). The actual range of scores in this

sample was 57 to 119 out of a possible range of 20 to 120. The mean sum of the sample scores for the Social Connectedness Scale-Revised was 93.42 (*SD* 14.47, *SE* 205.99). Cronbach's α in this study was .915. These sample results indicated more people rated themselves high in social connectedness.

Spiritual Perspective Scale

The Spiritual Perspective Scale measured the subjects' perceptions of the extent to which they held spiritual beliefs and values and participated in spiritually-related activities. The instrument was a 10-item scale which used a 6-point Likert-type scale. Four items related to the frequency of spiritual behaviors. These item's choices included 1 = not at all, 2 = less than once a year, 3 = about once a year, 4 = about once a month, 5 = about once a week, and 6 = about once a day. Six items related to spiritual beliefs and those items were rated as 1 = strongly disagree to 6 = strongly agree. Higher scores indicated a higher level of spirituality or spiritual perspective (Reed, 1987).

All the responses were summed and the mean calculated for each participant. The actual range of mean scores on this scale in this study was 0 to 5 out of a possible range of 0 to 5. The mean for the Spiritual Perspective Scale in this sample was 3.63 (*SD* 1.33, *SE* 1.72). The reliability coefficient Cronbach's α was .968. These results indicated a fairly normal distribution of scores on the scale in this sample.

Center for Epidemiologic Studies Depression Scale – Revised

The Center for Epidemiologic Studies Depression Scale – Revised was designed to measure the nine primary symptoms of a major depressive episode and general dysphoria according to the American Psychiatric Association's DSM-IV criteria (American Psychiatric Association, 2000; Eaton et al., 2004). The scale consisted of 20

items on a 5 point Likert type scale. Respondents were asked to identify how often they might have felt and behaved in time frames ranging from 0 = not at all or less than 1 day, 1 = 1 - 2 days, 2 = 3 - 4 days, 3 = 5 - 7 days, and 4 = nearly every day for 2 weeks.

The score was obtained by adding each item and calculating the mean. A higher score was indicative of more depressive symptoms and symptoms occurring more frequently. The possible range for scores was 0 to 4 and the actual range for this study was 0 to 2.3. The mean for the Center for Epidemiologic Studies Depression Scale – Revised in this sample was 0.43 (*SD* .45, *SE* .23). Cronbach's α was .907. The sample results for the scale demonstrate that more subjects reported few depressive symptoms.

Short Form-12 Version 2[®] Health Survey

The Short Form-12 Version 2[®] Health Survey measured the subject's perception of their physical and mental health and was designed to measure eight domains of health-related quality of life. The eight domains of health were: physical functioning, role limitations due to physical functioning, bodily pain, general health perception, vitality, social functioning, role limitations due to emotional problems and mental health (Ware et al., 1996; Ware et al., 2002; Ware et al., 2010).

The survey was a self-reported, multi-purpose measure consisting of 10 items on a 5 point Likert scale and 2 items on 3 point scales. The survey scores were calculated converting the two 3 point Likert scale items to a 5 point Likert scale by making a 1 = 1, 2 = 3, and 3 = 5. After adding up all the scores, the mean was calculated. The actual range for this sample was 2 to 5 out of a possible range of 1 to 5. The mean for the Short Form-12 Version 2[®] Health Survey in this study was 4.14 (*SD* 0.62, *SE* 0.38). The

reliability coefficient, Cronbach's α , was .871. A fairly normal distribution is seen in this sample's results. Table 3 summarizes the instruments' statistical characteristics.

Table 3

Survey Instrument's Statistical Characteristics

Instrument	Σ	$M(SD)$	Potential Range	Actual Range	Cronbach's α
Social Connectedness	93.20		20 – 120	57 – 119	.915
Spiritual Perspectives		3.63(1.33)	0 – 5	0 – 5	.968
Depression		0.43(0.45)	0 – 4	0 – 2.3	.907
Health and Well-Being		4.14(0.62)	1 – 5	2 – 5	.871

Regression Analysis

The sample data were analyzed using hierarchical multiple regression to determine how much of the variance in the dependent variables (self-reported depression and perceived health) were attributable to each of the independent variables (social connectedness and spiritual perspective). This approach allowed determination of the effect of each independent variable on the dependent variable.

Social Connectedness and Perceived Health

The hierarchical multiple regression analysis for social connectedness and perceived health can be seen in Table 4. The model described in Step 1 listed the statistics for a baseline regression model composed of the seven demographic variables (gender, age, income, ethnicity, length of time a subject had resided in the county, area of residence in the county, and number of family members who lived within 30 miles of a

subject). In the model described in step 2, social connectedness was added to the baseline model and the change in variance on perceived health was compared.

Table 4

Effects of Social Connectedness on Perceived Health

Step 1	B_i	$B SE$	β	$\frac{95\% CI}{(LL-UL)}$
Intercept	3.95	0.21		(3.53 – 4.37)
Gender	0.17	0.12	.12	(-0.06 – 0.40)
Age	0.00	0.04	.00	(-0.07 – 0.08)
Income	0.04	0.03	.12	(-0.02 – 0.09)
Time in County	0.00	0.00	.00	(0.00 – 0.00)
Family Member	0.02	0.01	.13	(-0.01 – 0.04)
Race	-0.12	0.17	-.07	(-0.45 – 0.21)
Area of County	0.03	0.11	.03	(-0.19 – 0.25)
F	0.71			
p	.67			
R^2	0.01			
Step 2	B_i	$B SE$	β	$\frac{95\% CI}{(LL - UL)}$
Intercept	2.49	0.39		(1.72 – 3.26)
Gender	0.19	0.11	.14	(-0.03 – 0.41)
Age	-0.01	0.04	-.03	(-0.08 - 0.06)
Income	0.04	0.03	.14	(-0.01 – 0.09)
Time in County	0.00	0.00	.03	(0.00 – 0.00)
Family Members	0.01	0.01	.11	(-0.01 – 0.04)

Table 4
continued

Step 2	B_i	$B SE$	β	95% CI (LL – UL)
Race	-0.05	0.16	-.03	(-0.37 – 0.26)
Area of County	0.00	0.11	.00	(-0.21 – 0.21)
Social Connectedness	0.02	0.00	.35*	(0.01 – 0.02)
F	3.14			
p	< .001			
R^2	0.11			
ΔR^2	0.10			

Note: B_i = Unstandardized beta; $B SE$ = beta standard error; β = standardized beta
 Predictor: Social Connectedness Dependent variable: Perceived Health
 * $p < .05$

The model shown in step 2 indicated social connectedness was a significant predictor of perceived health and that it was a positive relationship. In other words, as social connectedness increased, an individual's perceived health increased.

The R^2 values from the baseline model noted in step 1 indicated approximately 1% of the variance in the dependent variable, perceived health, was explained. The model which included social connectedness in step 2, explained about 11% of the variance. This indicated approximately 10% of the explained variance of perceived health was attributable to social connectedness.

The standardized coefficients (B_i^*) allowed a direct comparison of the effects of each variable. The results in step 2 indicated social connectedness appeared to be the overall strongest predictor of perceived health.

Spiritual Perspective and Perceived Health

The hierarchical multiple regression analysis for spiritual perspective and perceived health is found in Table 5. The model described in Step 1 listed the statistics for a baseline regression model composed of only the seven demographic variables (gender, age, income, ethnicity, length of time a subject had resided in the county, area of residence in the county, and number of family members who lived within 30 miles of a subject). Spiritual perspective was added to the baseline model in Step 2.

Table 5

Effects of Spiritual Perspective on Perceived Health

Step 1	B_i	$B SE$	β	$\frac{95\% CI}{(LL-UL)}$
Intercept	3.95	0.21		(3.53 – 4.37)
Gender	0.17	0.12	.12	(-0.06 – 0.40)
Age	0.00	0.04	.00	(-0.07 – 0.08)
Income	0.04	0.03	.12	(-0.02 – 0.09)
Time in County	0.00	0.00	.00	(0.00 – 0.00)
Family Member	0.02	0.01	.13	(-0.01 – 0.04)
Race	-0.12	0.17	-.07	(-0.45 – 0.21)
Area of County	0.03	0.11	.03	(-0.19 – 0.25)
F	0.71			
p	.67			
R^2	0.01			

Table 5
continued

Step 2	B_i	$B SE$	β	95% CI ($LL - UL$)
Intercept	4.14	0.28		(3.59 – 4.69)
Gender	0.15	0.12	.11	(-0.09 – 0.28)
Age	0.00	0.04	.01	(-0.07 – 0.08)
Income	0.04	0.03	.12	(-0.02 – 0.09)
Time in County	0.00	0.00	-.02	(0.00 – 0.00)
Family Members	0.02	0.01	.14	(-0.01 – 0.04)
Race	-0.14	0.17	-.08	(-0.47 – 0.20)
Area of County	0.04	0.11	.03	(-0.18 – 0.26)
Spiritual Perspective	-0.05	0.04	-.10	(-0.13 – 0.04)
F	0.78			
p	.63			
R^2	0.01			
ΔR^2	0.00			

Note: B_i = Unstandardized beta; $B SE$ = beta standard error; β = standardized beta
 Predictor: Spiritual Perspective Dependent variable: Perceived Health
 * $p < .05$

Spiritual perspective was not a significant predictor of perceived health in this sample. The explained variance of perceived health in step 1 was 0.01 and was the same in step 2. This indicated none of the explained variance was due to spiritual perspective.

Social Connectedness and Depression

The hierarchical multiple regression analysis for social connectedness and self-reported depression can be seen in Table 6. The model described in Step 1 listed the statistics for a baseline regression model composed of the seven demographic variables.

In the model described in step 2, social connectedness was added to the baseline model and the change in variance on depression was compared.

Table 6

Effects of Social Connectedness on Self-Reported Depression

Step 1	B_i	$B SE$	β	$\frac{95\% CI}{(LL-UL)}$
Intercept	0.48	0.16		(0.17 - 0.79)
Gender	-0.17	0.09	-.16*	(-0.34 - 0.01)
Age	-0.07	0.03	-.24*	(-0.13 - -0.01)
Income	-0.01	0.02	-.03	(-0.05 - .003)
Time in County	0.00	0.00	.00	(0.00 - 0.00)
Family Member	-0.01	0.01	-.05	(-0.02 - 0.01)
Race	0.31	0.12	.22*	(0.07 - 0.55)
Area of County	-0.03	0.08	-.03	(-0.20 - 0.14)
F	2.10			
p	.05			
R^2	0.05			
Step 2	B_i	$B SE$	β	$\frac{95\% CI}{(LL - UL)}$
Intercept	1.80	0.28		(1.25 - 2.34)
Gender	-0.19	0.08	-.18*	(-0.34 - -0.03)
Age	-0.06	0.03	-.20*	(-0.11 - -0.01)
Income	-0.01	0.02	-.04	(-0.05 - 0.03)
Time in County	0.00	0.00	-.04	(0.00 - 0.00)
Family Members	0.00	0.01	-.03	(-0.02 - 0.01)

Table 6
continued

Step 2	B_i	$B SE$	β	95% CI (LL – UL)
Race	0.25	0.11	.18*	(0.03 – 0.47)
Area of County	0.00	0.08	.00	(-0.15 – 0.15)
Social Connectedness	-0.01	0.00	-.41*	(-0.02 – -0.01)
F	6.08			
p	< .001			
R^2	0.22			
ΔR^2	0.17			

Note: B_i = Unstandardized beta; $B SE$ = beta standard error; β = standardized beta
 Predictor: Social Connectedness Dependent variable: Depression * $p < .05$

Social connectedness was a significant predictor of self-reported depression as seen in Step 2 and accounted for approximately 17 % of the variance of self-reported depression in this sample. The coefficient for social connectedness was a negative number thus indicating as social connectedness increased, depressive symptoms decreased.

As noted from the R^2 values, the baseline model in step 1 explained approximately 5% of the variance in the dependent variable depression. The model which included social connectedness in step 2, explained about 22% of the variance. This indicated approximately 17% of the explained variance of self-reported depression in step 2 was attributable to social connectedness.

The standardized coefficients (B_i^*) allowed a direct comparison of the effects of each variable. The results indicated social connectedness appeared to be the strongest predictor of self-reported depression.

Spiritual Perspective and Depression

The hierarchical multiple regression analysis for spiritual perspective and self-reported depression can be seen in Table 7. The model described in Step 1 listed the statistics for a baseline regression model composed of the seven demographic variables. Step 2 added spiritual perspective to the baseline model.

Table 7

Effects of Spiritual Perspective on Self-Reported Depression

Step 1	B_i	$B SE$	β	<u>95% CI</u> (<i>LL-UL</i>)
Intercept	0.48	0.16		(0.17 - 0.79)
Gender	-0.17	0.09	-.16*	(-0.34 - 0.01)
Age	-0.07	0.03	-.24*	(-0.13 - -0.01)
Income	-0.01	0.02	-.03	(-0.05 - .003)
Time in County	0.00	0.00	.00	(0.00 - 0.00)
Family Member	-0.01	0.01	-.05	(-0.02 - 0.01)
Race	0.31	0.12	.22*	(0.07 - 0.55)
Area of County	-0.03	0.08	.03	(-0.20 - 0.14)
F	2.10			
p	.05			
R^2	0.05			
Step 2	B_i	$B SE$	β	<u>95% CI</u> (<i>LL - UL</i>)
Intercept	0.45	0.21		(0.04 - 0.86)
Gender	-0.16	0.09	-.15	(-0.34 - 0.01)
Age	-0.07	0.03	-.24*	(-0.13 - -0.01)

Table 7
continued

Step 2	B_i	$B SE$	β	95% CI (LL – UL)
Income	-0.01	0.02	-.03	(-0.05 – 0.03)
Time in County	0.00	0.00	.00	(0.00 – 0.00)
Family Members	-0.01	0.01	-.06	(-0.02 – 0.01)
Race	0.31	0.12	.22*	(0.07 – 0.55)
Area of County	-0.03	0.09	-.03	(-0.20 – 0.14)
Spiritual Perspective	0.01	0.03	.02	(-0.06 – 0.07)
F	1.84			
p	.08			
R^2	0.05			
ΔR^2	0.00			

Note: B_i = Unstandardized beta; $B SE$ = beta standard error; β = standardized beta
 Predictor: Spiritual Perspective Dependent variable: Depression * $p < .05$

Spiritual perspective was not a significant predictor of self-reported depression in this sample. As noted from the R^2 values, the baseline model in step 1 explained approximately 5% of the variance in the dependent variable self-reported depression. The statistics in step 2 which included spiritual perspective had virtually the same percentage of the variance (5%) as the baseline model. This indicates there was no change in the variance of depression when spiritual perspective was added to the analysis.

Social Connectedness, Spiritual Perspective and Perceived Health

Two other models were run to analyze the effects of both independent variables on each dependent variable. The hierarchical multiple regression analysis for social

connectedness and spiritual perspective on perceived health can be seen in Table 8. Step 1 described the baseline regression model composed of the seven demographic variables (same as above). Step 2 added social connectedness and spiritual perspectives to the baseline model.

Table 8

Effects of Social Connectedness and Spiritual Perspective on Perceived Health

Step 1	B_i	$B SE$	β	<u>95% CI</u> (<i>LL-UL</i>)
Intercept	3.95	0.21		(3.53 – 4.37)
Gender	0.17	0.12	.12	(-0.06 – 0.40)
Age	0.00	0.04	.00	(-0.07 – 0.08)
Income	0.04	0.03	.12	(-0.02 – 0.09)
Time in County	0.00	0.00	.00	(0.00 – 0.00)
Family Member	0.02	0.01	.13	(-0.01 – 0.04)
Race	-0.12	0.17	-.07	(-0.45 – 0.21)
Area of County	0.03	0.11	.03	(-0.19 – 0.25)
F	0.71			
p	0.67			
R^2	0.01			
Step 2	B_i	$B SE$	β	<u>95% CI</u> (<i>LL – UL</i>)
Intercept	2.70	0.40		(1.91 – 3.49)
Gender	0.15	0.11	.11	(-0.07 – 0.37)
Age	-0.01	0.04	-.03	(-0.08 – 0.06)
Income	0.04	0.03	.14	(-0.01 – 0.09)

Table 8
continued

Step 2	B_i	$B SE$	β	95% CI (LL – UL)
Time in County	0.00	0.00	.00	(0.00 – 0.00)
Family Members	0.02	0.01	.12	(-0.01 – 0.04)
Race	-0.08	0.16	-.05	(-0.39 – 0.23)
Area of County	0.01	0.10	.00	(-0.20 – 0.21)
Social Connectedness	0.02	0.00	.39*	(0.01 – 0.02)
Spiritual Perspective	-0.08	0.04	-.17*	(-0.16 – 0.00)
F	3.35			
p	< .001			
R^2	0.13			
ΔR^2	0.12			

Note: B_i = Unstandardized beta; $B SE$ = beta standard error; β = standardized beta
 Predictors: Social Connectedness and Spiritual Perspective
 Dependent variable: Perceived Health * $p < .05$

When social connectedness and spiritual perspective were both added to the baseline model for perceived health both were significant predictors of perceived health. The relationship between social connectedness and perceived health was a positive one. As social connectedness increases, a person's perceived health increased. However, the negative sign in front of the unstandardized coefficient indicated a negative relationship between spiritual perspective and perceived health. As spiritual perspective increased, perceived health decreased.

The explained variance on perceived health in step 2 was about 13%. Compared to the baseline model, this indicated social connectedness and spiritual perspectives explained approximately 12% of the variance in the dependent variable, perceived health.

Social Connectedness, Spiritual Perspective and Depression

The second model which looked at the effects of both independent variables on a dependent variable can be seen in Table 9. This regression analysis studied the effect of social connectedness and spiritual perspective on self-reported depression while controlling for the other independent variable. Step 1 described the baseline regression model composed of the seven demographic variables (same as above). Step 2 added social connectedness and spiritual perspectives to the baseline model.

Table 9

Effects of Social Connectedness and Spiritual Perspective on Self-Reported Depression

Step 1	B_i	$B SE$	β	<u>95% CI</u> (LL-UL)
Intercept	0.48	0.16		(0.17 - 0.79)
Gender	-0.17	0.09	-.16*	(-0.34 – 0.01)
Age	-0.07	0.03	-.24*	(-0.13 – -0.01)
Income	-0.01	0.02	-.03	(-0.05 - .003)
Time in County	0.00	0.00	.00	(0.00 – 0.00)
Family Member	-0.01	0.01	-.05	(-0.02 – 0.01)
Race	0.31	0.12	.22*	(0.07 – 0.55)
Step 1	B_i	$B SE$	β	<u>95% CI</u> (LL-UL)
Area of County	-0.03	0.08	-.03	(-0.20 – 0.14)
F	2.10			
p	.05			
R^2	0.05			

Table 9 continued				
Step 2	B_i	$B SE$	β	95% CI (LL - UL)
Intercept	1.70	0.29		(1.13 - 2.26)
Gender	-0.17	0.08	-.16*	(-0.33 - -0.01)
Age	-0.06	0.03	-.20*	(-0.11 - -0/01)
Income	-0.01	0.02	-.05	(-0.05 - 0.02)
Time in County	0.00	0.00	-.02	(0.00 - 0.00)
Family Members	0.00	0.01	-.04	(-0.02 - 0.01)
Race	0.26	0.11	.19*	(0.04 - 0.48)
Area of County	0.00	0.08	-.01	(-0.16 - 0.15)
Social Connectedness	-0.01	0.00	-.43*	(-0.02 - -0.01)
Spiritual Perspective	0.04	0.03	.10	(-0.02 - 0.10)
F	5.63			
p	< .001			
R^2	0.23			
ΔR^2	0.18			

Note: B_i = Unstandardized beta; $B SE$ = beta standard error; β = standardized beta
 Predictor: Social Connectedness and Spiritual Perspective
 Dependent variable: Depression * $p < 0.05$

In this model, social connectedness was again a significant predictor of self-reported depression but spiritual perspective was not. An increase in social connectedness was related to a decrease in self-reported depression. The explained variance noted in step 2 was 23%. Compared to the baseline model, this indicated social connectedness and spiritual perspectives explained about 18% of the variance, most of which is due to the effect of social connectedness.

Summary

The Health People 2020 report discussed the importance of examining many aspects of a person's health, including social determinants of health (United States Health and Human Services, 2011). Social connectedness and spiritual perspectives are known to have a positive effect on an individual's perception of physical and mental health in many settings and in many populations. However, these concepts have not been fully explored in rural settings. In this study we found that social connectedness was a significant predictor of self-reported depression and perceived health in rural residents of a western Colorado county. However, unlike previous work, spiritual perspective did not significantly predict self-reported depression or perceived health. These findings further support the notion that attending to the social needs of individuals within a community is important as a contributor to their overall health.

CHAPTER V

DISCUSSION AND CONCLUSIONS

According to the World Health Organization (2012a) and the United States Healthy People 2020 (US Department of Health and Human Services, 2011), determinants of health include an individual's social, economic, and physical environments as well as personal characteristics and behaviors. Social determinants of health are the conditions in which people are born, live, work and age and include socioeconomic conditions, social norms, social support and social interactions (US Department of Health and Human Services, 2011). Social support and social interactions relate to how connected an individual feels to friends, family and others in the community. These social determinants have a strong impact on health, but are not examined often when looking at the overall health of an individual.

Spirituality is related to connectedness as connectedness to others, a higher being, God, self or nature is an important part of its definition (Campbell et al., 2010; Stranahan, 2001; Vance, 2001). Individuals often express their spirituality in faith communities. Faith communities offer the opportunity to develop relationships with others as well as with a higher being or self and these relationships can provide social support, social identity and a sense of trust and belonging (Krause & Bastida, 2011).

This research study focused on the two resources, social connectedness and spirituality, which have been shown to positively predict mental, physical and social

health in a variety of populations (Ashida & Heaney, 2008; Cacioppo & Hawley, 2003; Hill, 2006; Chester et al., 2006; Jesse et al., 2005; Jesse & Reed, 2004; Daaleman et al., 2001). Specifically the study sought to examine the relationships of social connectedness and spirituality on the development of self-reported depression and on an individual's perceived health. The population of interest was rural inhabitants as these individuals are often vulnerable to poor health outcomes due to lack of resources, isolation and poverty.

The contribution of social resources, such as social connectedness and spirituality, on rural residents' perceived mental and physical health had not been extensively studied. A better understanding of how these social resources impact the mental and physical health of rural residents would offer a better understanding of the full complexity of health and disease in this population.

The purpose of this study was to analyze the relationships between social connectedness and spirituality on the level of self-reported depression and perceived health in a population of rural inhabitants of western Colorado. A more thorough understanding of these relationships would assist rural health care providers and community leaders in identifying and addressing the unique physical, social, and psychological health needs of individuals within rural populations. The ultimate goal of the study was to improve physical, mental and social health outcomes of rural residents through identification of how the social resources of social connectedness and spirituality impacted the perceived health and level of depression in rural populations.

The research question for this study was:

Is there a relationship between the resources of social connectedness and spirituality and the level of self-reported depression and the overall level of perceived health in persons living in rural Colorado?

From this question, four hypotheses were developed from the research question. The hypotheses for the study were:

- H1 Social connectedness significantly predicts perceived health in rural residents after controlling for age, gender, income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.
- H2 Spiritual perspective significantly predicts perceived health in rural residents after controlling for age, gender, income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.
- H3 Social connectedness significantly predicts self-reported depression in rural residents after controlling for age, gender, and income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.
- H4 Spiritual perspective significantly predicts self-reported depression in rural residents after controlling for age, gender, and income level, ethnicity, length of time in the county, how many family members live within 30 miles and living in incorporated or unincorporated areas of the county.

To answer the question and explore the nature of the relationships between the variables, the study used a quantitative, cross-sectional, correlational survey method design with a convenience sample of rural residents of a county in western Colorado. The participants were recruited at retail grocery stores and community events located in different areas of the county. The study examined the relationships between the two independent variables, social connectedness and spiritual perspective, and the two dependent variables, self-reported depression and perceived health, using hierarchical multiple regression analyses to determine the effects of a panel of demographic variables and each independent variable on each dependent variable.

Discussion

Demographics

Analysis of the descriptive data demonstrated that the sample was only somewhat representative of the county's population. The sample was similar to the population in regards to area of residence, but was dissimilar in the demographics of age, income, race and gender. The sample was fairly evenly divided between residents of unincorporated areas (42.3%) and incorporated areas of the county (57.7%). These sample results were similar to the population data of 40.4% of the county population resided in unincorporated areas and 59.6% of the population lived in incorporated areas of the county (United States Bureau of Census, 2011).

According to the 2010 United States Bureau of Census, the county population 18 year or older was 73.1% with 8.9% over the age of 65 years. The age inclusion criterion for the study was 18 years or older thus 18 years was the age the demographic data started. Therefore, 100% of the sample was 18 years or older. The sample population ages 61 years old and older totaled 29.6% which was much higher than the overall population numbers. The sample data were fairly evenly distributed with younger adults 18 – 50 years old comprising 47.9% of the sample compared with 52.1% of the sample were 51 years old and older. However, the sample data for age did not reflect the counties' population data. The sample was skewed toward older adults. An explanation for this was not examined but may be related to two of the data collection sites, a grocery store and the community center where the health fair was held, are located in a community of retirees and older adults. Older adults are not the only population in the community but possibly make up a large percentage. The researcher was unable to

obtain this data on the community as it is an unincorporated part of the county. The validity of the study may have been affected due to the higher number of older adults.

The statistics for gender show that approximately 48% of the county's population is female and 52% is male (United States Bureau of Census, 2011). In this study, however, more females than males completed the survey; 72% female and 28% male. The reason for this difference was not investigated, but it was noted that more females than males agreed to complete the survey when approached by the researcher. This may be a gender characteristic that females are more willing to participate in health surveys than men. Another explanation of why more females than males completed the surveys may exist with the data collection sites. Possibly more females than males are responsible for the grocery shopping in the rural county or females are more interested in health events such as health screenings and community fun runs. Nevertheless, because the sample was skewed toward the female gender, the validity of the study's results could be affected.

The 2010 United States Census reported 68.5% of the county's population was white and 28.6% was Hispanic or Latino. Of the individuals who participated in the study, 86.81% were white and only 9.72% were Hispanic or Latino. In fact, the percentage of non-white participants was only 13.18%. Again, the reason for the difference in the numbers of persons of different races/ethnicities was not investigated but the reasons why some people agreed to participate and others didn't could possibly explain the low numbers of non-white participants. The question of whether the Hispanic population that the researcher approached could speak and/or read English could also

have contributed to the skewed sample numbers for race/ethnicity and may have decreased the external validity of the study.

The county's median annual income in 2010 was \$28,457 with 9.2% of the county's residents living below the poverty level (United States Bureau of Census, 2011). The sample data did not reflect this but was skewed toward the higher income levels (57.67% of the sample reported annual income of \$51,000 or greater). It is unclear why the sample was skewed toward individuals who claimed higher incomes. Attempts were made to reach persons of all income levels, as the three grocery retail stores were the only ones located in each of three towns and were not located in upper income neighborhoods. These establishments are frequented by all residents in the respective towns. The community events may have attracted more middle and upper income individuals and could have possibly led to the sample data not reflecting the income levels reported in the 2011 census. In any case, the lack of representative data on income in the sample could have had a major impact on the results obtained. If the income data had been less skewed to the higher end, perhaps it would have affected the results as people with lower socioeconomic status may have had different perceptions of their overall health, depression, social connectedness, or spirituality.

Other descriptive data collected included time a subject had lived in the county measured in months and the number of family members that lived within 30 miles of the subject. There are no population statistics on these two demographic data. The sample data indicated the average time of residence in the county was 197 months or 16.42 years and the average number of family members living within 30 miles was 2.26. The large number of years the majority of subjects lived in the county indicated the sample was not

a transient population but had been well established in the community for a long time. The smaller number of family members may have revealed a majority of the sample either had no family in the area or had family members living farther than 30 miles, which may not be unusual in this remote region.

Effect of Social Connectedness on Perceived Health

In the regression analysis, social connectedness was a significant predictor of perceived health and there was a positive relationship between social connectedness and perceived health. The more socially connected a person felt, the more they perceived themselves as physically and mentally healthy based on the health and well-being scale.

The baseline model revealed 1% of the variance in perceived health was explained by the demographic variables. When social connectedness was added to the model, the data revealed 10% of the variance in perceived health was explained social connectedness. None of the demographic variables were significant predictors of perceived health. Social connectedness appeared to be the strongest predictor of perceived health based on the standardized coefficient results. Based on the results, the null hypothesis was rejected.

Previous research supported the study's finding that higher levels of social connectedness were related to higher levels of perceived health. Social connectedness has been associated positively with health status in older adults (Ashida & Heaney, 2008; Giummarra et al., 2007) and in young women in rural communities (Hinton & Earnest, 2009; Jackson et al., 2011). Lack of social connectedness has been associated with negative health outcomes (Lee & Robbins, 1998; Flaskerud & Winslow, 1998; Mitchinson, et al., 2008). Social isolation, which is the opposite of social connectedness,

has been associated with poorer self-reported health in young adults (Cacioppo & Hawley, 2003) and increased mortality (Step toe, Shankar, Demakakos, & Wardle, 2013). Step toe et al. (2013) conducted a large scale study involving 6,500 men and women age 52 and older in England. The results revealed social isolation was significantly associated with mortality.

The literature also indicates other factors that influenced perceived health that was not identified in this study. Social issues such as socioeconomic levels, social capital and other social resources influence how individual perceive their health (Flaskerud & Winslow, 1998; Aday, 1994, 2003). People who have higher levels of income can afford health insurance which allows access to quality healthcare (Marmot, 2005).

The Effect of Social Connectedness on Self-Reported Depression

Social connectedness was found to be a significant predictor of self-reported depression in the study and an inverse relationship between social connectedness and depression was noted. The more socially connected a person felt, the less depressive symptoms they reported as measured by the depression scale. Statistically, approximately 17% of the variance of depression was explained by social connectedness after controlling for the demographic variables.

This is a somewhat significant percentage of the variance of depression even though other factors contribute to the overall depression levels in individuals. Socioeconomic issues such as poverty, drug and alcohol abuse, chronic illnesses and lack of social capital have been identified in the literature as contributors to depression in rural residents (Probst et al., 2006; Fortney et al., 2009; Kemppainen et al., 2009).

However, the literature also supported the research finding that social connectedness had a significant but inverse relationship to depression. Armstrong and Oomen-Early (2009) found an increase in social connectedness predicted a decrease in depression ($p < .001$) in college athletes. A longitudinal study of teenagers found similar results; strong social connectedness was associated with lowest risk of depressive symptoms (Bond et al., 2007). And two studies from Australia found social connectedness was a protective factor against depressive symptomatology in 15-24 year olds and young adults who had attempted suicide (Donald & Dower, 2002; Donald et al., 2006).

One of the findings in this study was that the participants tended to rate themselves high in social connectedness and low in depressive symptoms. This could certainly impact the results. Highly connected individuals with lower depression rates would skew the data toward finding social connectedness is negatively related to depression and could bias the study's conclusions.

Effect of Spiritual Perspective on Perceived Health

The statistical results did not demonstrate a significant relationship between spiritual perspectives and perceived health. In other words, whether a person rated themselves high on the spiritual perspectives scale or not did not influence the perception of their health they reported. The hierarchical regression analysis revealed the explained variance of perceived health by spiritual perspective and the panel of demographic variables was approximately 1%; the same percentage as the demographic variables without spiritual perspective included. This indicated no change in variance when spiritual perspective was added. The study failed to reject the null hypothesis due to the

study's results that spiritual perspective was not a significant predictor of perceived health.

The only time, spiritual perspective significantly predicted perceived health was when the effect of social connectedness was controlled for in the model. However, the data in this analysis indicated a negative relationship between spiritual perspective and perceived health and a positive relationship between social connectedness and perceived health. As spiritual perspective increased; perceived health decreased and as social connectedness increased; perceived health increased. Approximately 12% of the variance in perceived health was explained by social connectedness and spiritual perspectives.

The literature supports the hypothesis that spiritual perspective significantly predicts an individual's perceived health. One of the positive outcomes of spirituality in three studies was better physical health (Campbell, et al., 2010; Coyle, 2002; McCord, et al., 2004). These studies suggested spiritual perspectives affected not only perceived physical health; but perceived psychological and social health as well. Chester et al. (2006) found a positive association between the spirituality of African-American women and health-promoting behaviors. This study found positive associations in individuals who practiced healthy eating and physical activity with stress management, health responsibility and spiritual growth. A qualitative study (Daaleman et al., 2001) explored patient-reported health related spirituality. The participants who reported spiritual core beliefs viewed their life events and experiences in a positive manner. Better physical health and improved quality of life are reported by individuals who have spiritual beliefs regarding a loving God (Campbell et al., 2010; Leak et al., 2008).

Pargamenti et al. (2004) investigated the association between religious beliefs and coping in various patient populations including HIV/AIDS patients. The studies found positive relationships between spirituality and religion and improved immune system functioning. The lack of psychometrically tested instruments to measure spirituality as well as the many other confounding variables have limited the number of studies that attempt to show direct effects of spirituality on physical health. The Spiritual Perspective Scale (Reed, 1987) is one spirituality instrument that has had strong reliability and validity results in many studies which is why it was chosen for this study.

Significant positive relationships were found between spiritual perspective, improved quality of life, well-being at the end of life and psychological well-being in pregnant women from Appalachia (Jesse & Reed, 2004), breast cancer survivors (Gibson, 2003; Leak et al., 2008), and terminally ill patients (Reed & Rosseau, 2007). These studies used the Spiritual Perspective Scale (Reed, 1987) to measure spiritual perspective but different types of health measurement tools.

The finding that spiritual perspective had an inverse relationship to perceived health when social connectedness was controlled for was an unanticipated finding. The expectation was that spiritual perspective would have a positive relationship to perceived health. There are several possible explanations for the fact that spiritual perspective was not a significant predictor of perceived health. The insufficient power obtained in the spiritual perspective analyses could be one explanation. This low power does not allow adequate confidence in the results. More participants were needed to increase the power of the analyses and to detect an effect of spiritual perspective on perceived health if one existed.

Flaws in the research design, such as the lack of random sampling and location of data collection might also explain some of these unanticipated findings. In addition, spirituality is a more abstract concept than social connectedness and perhaps individuals have ambivalent feelings toward their spirituality leading to a less direct relationship to their health than reported in previous studies. Many individuals compartmentalize the physical, mental, emotional and spiritual aspects of their lives. Spirituality may not impact health, physically or mentally, in individuals living in rural areas as hypothesized. Further investigation of the spirituality aspect is needed in this population to fully describe this complex phenomenon and its relation or non-relation to health.

Effect of Spiritual Perspective on Self-Reported Depression

When spiritual perspective was added to the baseline model in the hierarchical regression analysis, the data revealed spiritual perspective was not a significant predictor of self-reported depression. The explained variance on self-reported depression by spiritual perspectives was approximately 5%, virtually the same as the baseline model. The lack of explained variance by spiritual perspective on self-reported depression was an expected result since no significant relationship was found between spiritual perspective and perceived health.

The study failed to reject the null hypothesis due to the study's results that spiritual perspective was not a significant predictor of self-reported depression after controlling for the demographic variables. The lack of adequate statistical power in this analysis (52%) could be a factor in the failure to reject the null hypothesis. A power of at least 80% is needed detect any effect of spiritual perspective on self-reported depression

that may exist. More participants in the sample would hopefully increase the power and allow greater confidence in the results.

Most of the literature supports that spiritual perspective has a negative relationship with self-reported depression. Dailey and Stewart (2007) used the Spiritual Perspective Scale and the Center for Epidemiological Studies Depression Scale-Revised to evaluate spiritual perspectives and depression in 102 pregnant African-American women. The results indicated spiritual perspective was negatively correlated with depression. Additionally, spirituality, as measured by spiritual perspective, has been seen as a protective factor against depression in many studies (Dew et al., 2010; Dailey & Stewart., 2007; Jesse et al., 2005). A meta-analysis of 49 studies found positive religious coping is related to lower levels of distress, anxiety and depression. However, negative forms of religious coping is associated with increased levels of all three and poor psychological adjustment (Ano & Vasconelles, 2005).

There was not a lot of literature that supported the current study's findings that spiritual perspective was not significantly predictive of depression. An older study compared the relationship between spiritual perspective, social support and depression in two groups of adults: caregiving wives of dementia victims and non-caregiving wives of healthy adults. The Spiritual Perspective Scale and the Center for Epidemiological Studies Depression Scale-Revised were also used to measure spiritual perspectives and depression in this study. Expressed support and social network lists were used to measure social support. Results indicated in the caregiver group spiritual perspective was not significantly related to social support or depression however, increased social support

was associated with decreased depression (Robinson & Kaye, 1994). These results were similar to the results found in the current research study.

The lack of relationship of spiritual perspective on either depression or perceived health is perplexing and may relate to the abstractness of the concept, spirituality. The impact of spirituality on health may be due to the other characteristics of spirituality such as meaning and purpose to life, transcendence and advocacy of a healthy lifestyle. In addition, not all outcomes of spirituality are positive. Some negative outcomes are guilt, inner conflicts and beliefs that lack of spirituality lead to misfortunes, negative emotions, and loss of serenity (Bolletino, 2001; Carson, 2008). These outcomes could very well have negative impact on perceived health and level of depression.

There was less explicit literature on the relationship between spiritual perspective and the dependent variables than on the relationship between social connectedness and depression or perceived health. The relationship between spirituality and connectedness was not explored in this study even though the link between these two concepts is evident in the literature. The reason for this lack of exploration was primarily due to the instrument chosen to measure spiritual perspectives. The Spiritual Perspective Scale (Reed, 1987) was chosen for its strong psychometric properties; however, this tool is limited in what data it captures. The Spiritual Perspective Scale captures the amount of time spent in spiritual practices as well as spiritual beliefs. This tool does not look at the negative outcomes or other characteristics of spirituality. It also does not examine the connectedness characteristic of spirituality which would have been valuable data to collect in this study. No instrument or tool exists that this researcher is aware of that measures the connectedness issue of spirituality. There is a Spiritual Transcendence

Scale by Reed that assesses an individual's beliefs concerning the transcendence characteristics. This tool was not chosen as it would not provide data for spiritual perspective or connectedness.

Limitations

The possibility existed that there were other important or confounding variables that might influence the relationship between social connectedness and spirituality on depression and perceived health or other important social resources that have a significant contribution to health outcomes that were not included in this study. Other social resources such as adaptability, resilience, social isolation and attachment might also be factors whose influence may have been missed in the outcomes of perceived health and depression (Bekker & Croon, 2010; Ashida & Heaney, 2008; Cacioppo & Hawley, 2003). Additional studies of other potentially contributing or confounding variables are needed to fully explore the complex interaction of social resources and health outcomes in rural inhabitants.

The necessity of using a convenience sample and the lack of randomization led to potential selection bias which decreases the generalizability of the findings. There was the possibility of selection bias on the part of the researcher when deciding who to approach in the retail stores and at the community events and also by those individuals who agreed to participate in the study. In an effort to avoid selection bias on the part of the researcher, each person who came by the data collection table was asked to participate.

The demographic statistics revealed the sample did not match up with the population statistics. The sample was older, more female, whiter and higher income than

the average county resident. This could have led to selection bias. The location of the data collection could also have led to selection bias as only customers of the stores and participants in the community events were available to be selected for the sample. Participants who were more socially connected or less depressed might have been more willing to participate. This could have led to the skewed results on the Social Connectedness Scale - Revised and the Center for Epidemiologic Studies of Depression Scale - Revised. Also, inability to leave home due to poor health or depressive symptoms might have excluded some individuals from participation. The addition of the two community events which were health related events might have caused the sample to be skewed toward healthier individuals or individuals with greater interest in their health. There was also the possibility that wealthier individuals attended these community health events and this may explain the data trend toward subjects with higher incomes.

Another potential limitation to this study was the length of the survey which may have led to respondents' burden or fatigue and non-response bias and the sensitive nature of some of the scales. The questionnaire consisted of 69 items and took approximately 10-15 minutes to complete. Of the 144 surveys, 16 had one or two items randomly left blank which could be explained by carelessness or fatigue on the part of the participants. One way of decreasing the number of items would have been to potentially use the Short Form-12 Version 2[®] Health Survey for assessment of physical and mental health and omitting the Center for Epidemiologic Studies of Depression Revised Scale, which may have similar findings.

Additionally, eight surveys had whole scales, such as the Center for Epidemiologic Studies of Depression Scale - Revised or Spiritual Perspective Scale, left

blank. This may indicate that participants were uncomfortable with the subject matter of these scales or didn't want to share their thoughts on this subject with others. It most likely was not due to respondents' fatigue because these surveys were located in the middle of the questionnaire. Those who left blank the depression scale and/or spiritual perspective scale completed the health and well-being scale which was at the end of the survey

Due to the low sample size and to assure adequate power, two methods were used to deal with the missing data. An assessment to locate any systematic patterns to the missing data was done. Each survey that had missing data was studied for the items left blank. Then a missing data analysis was conducted. The results of this analysis indicated there was a significant pattern noted and there was concern that bias might be introduced.

The second method for dealing with missing data concerns was conduction of multiple imputations of the data followed by the regression analyses. Using multiple imputations is a highly recommended missing data technique that produces unbiased estimates and is superior to more traditional techniques such as deletion and mean imputation techniques (Baraldi & Enders, 2010). However, any time a researcher attempts to manipulate missing data or guess what a participant's response might be, a risk of invalidating the results occur. The possibility of false findings occurs with any missing data methodology however, the literature supports the use of multiple imputations especially in research involving survey method.

A final limitation of this research study was the small sample and corresponding low power on the spiritual perspective analyses. While there was strong power on the analyses where social connectedness was the independent variable, the power was not

adequate in the analyses for spiritual perspectives. Therefore, the researcher feels 83% confident that the effect noted in the regression analysis of social connectedness on perceived health exists and 99% confident that the effect noted of social connectedness on depression exists. But there is only 24% and 52% confidence that the effect of spiritual perspective on perceived health and depression actually exists. A sample with more participants, closer to the 380 subjects originally planned, would help to increase the power and as a result, the confidence in the findings.

Implications for Nursing

The determinants of health have a greater influence on an individual's health status than access to and quality of health care services. Health care contributes only one fourth to the nation's health status (Lazzio-Mourey et al., 2005). The personal, environmental, economic and social factors which determine health should be taken into consideration as much or more than quality and access to health care. This study's results showed the lack of social connectedness in rural communities negatively impact health. Strategies to improve social connectedness will be beneficial to rural communities and individuals.

Social connectedness and social relationships are essential in the maintenance of health; however in modern societies, the number of people living alone in the United States is increasing according to the most recent census data (United States Bureau of Census, 2011; Steptoe et al., 2013). This and other studies suggest that the lack of social connectedness has detrimental effects on physical and mental health. Feeling connected to others leads to physical and psychological well-being and has a positive impact on

health (Lee & Robbins, 1998; Lee et al., 2002; Lee et al., 2008; Flaskerud & Winslow, 1998; Mitchinson et al., 2008).

Populations such as rural inhabitants, older adults, the poor and minorities are the most vulnerable to poor health outcomes and may benefit from looking more closely at the social determinant of their health as potential areas for intervention. Particularly in many rural areas, there often are few opportunities for social connectedness to develop (Barenholdt et al., 2010; Edwards & Cheer, 2007; Cacioppo & Hawley 2003) which may impact their health, as demonstrated in this study. Rural community leaders and health care professionals must accept the importance of these social determinants in their community's and individual members' physical and mental health.

Recommendations from the World Health Organization (2012a), Healthy People 2020 and the Institute of Medicine's Committee on the *Future of Rural Health Care* (2005) stress each rural community should conduct a health needs assessment, set priorities for addressing the individual and population's health needs, and develop and implement action plans to address the identified health needs. These entities recommend all determinants of health, including social determinants, be included in the needs assessment. Unfortunately, the social determinants of health are not often examined when assessment of individual or community health is being conducted. In particular, the social support and relationships are infrequently assessed, but are important to the overall health of rural community members as demonstrated in this study.

Analysis of social determinants including social connectedness in a rural population could lead to the development of strategies which address the unique health needs and improve the mental, physical and social health status of rural populations.

Community centers which advocate physical activities, group meetings and social events could be constructed to provide opportunities for social interactions. Churches might become partners with the community in reaching more socially isolated individuals. Other community partnerships could be established with schools, athletic organizations and businesses in the rural communities.

Urban planners have discovered the need for social connectedness in many large cities. In these cities, residential areas of apartments, townhomes, or condos along with shops, gyms and other entertainment venues are built clustered together so inhabitants can walk from place to place and meet with other residents of the neighborhood. Faith communities are locating more often in these neighborhood areas to provide closeness and convenience for their members. Similar areas which meet physical, mental, spiritual and social health needs could be developed in rural communities as well.

Health care professionals should become aware of the importance of social connectedness in individual patients. Health assessment must include determination of a patient's social relationships and support systems. These support systems should be consulted in the treatment decision making processes in order to assure compliance with the management plan. An example of this would be a diabetic patient who receives two meals a day at a local senior citizen center. One could assume the center would be an important social determinant of this patient's health in terms of social relationships and connectedness. By including the senior citizen center's coordinator in the treatment plan, the patient could maintain his social connectedness to the center while maintaining a healthy diet that will meet his diabetes requirements.

Another important consideration is inclusion of patient's support systems in patients' treatment and care decisions. Many hospitals and health care providers exclude significant others who have informal personal relationships that are important to the patient in order to comply with confidentiality regulations. An example would be a patient who is socially isolated and lacks any family relations but has a next door neighbor who provides personal care, meals and company. Often this neighbor would be excluded from discussions with health care providers in fear of compromising patient confidentiality. Inclusion of the neighbor, with the patient's permission, in the treatment discussion could lead to better health outcomes for the patient and reduced readmissions and length of stay for the hospital. This study highlights the importance of understanding a patient's social connectedness to developing a patient centered care plan. Determining social goals of the patient is important in assisting a patient to reach their functional goals.

Nursing is in a unique position to improve and increase social connectedness for individuals which can lead to decreased vulnerability and risk of adverse health outcomes for these individuals living in rural communities. Educating community leaders and organizations, developing health policies at the local, state, and national level to address the need for more social support and social interactions; and forming coalitions to improve rural health are within nurses' scope of practice. Nursing should be at the forefront in the effort to improve health of our communities and individuals by addressing all determinants of health.

Recommendations for Further Research

Additional research into the relationships of social connectedness and spiritual perspective on physical and mental health is needed. A replication study with a larger sample more consistent with the demographics of the population would be beneficial and would perhaps give better insight into the effect of spiritual perspective on depression and perceived health.

Additionally, the regression analysis suggested that there may be some significant differences in how gender, age, and race perceive the contribution of social connectedness and spiritual perspective on the overall health and depression. In this study, there were not enough participants from the various demographic groups to make any conclusions of these results, but research specifically examining the effects of gender, age, or race on these variables would be very beneficial to see if there is a difference in perspective for people of different backgrounds.

The current study revealed spiritual perspective was not a significant predictor of perceived health except in the presence of social connectedness. Examination of the effect of connectedness on spirituality would be beneficial in gaining understanding of the concept of spirituality and its effect of physical and mental health. Further research on this topic would benefit from development of an instrument which measures an individual's feelings on connectedness to others, to a higher being or to self.

Much research has been done on the benefits of social support but little has been conducted to identify interventions that foster social connectedness (Haun et al., 2008). This is an area where more research by nursing is needed. Most of the research that has been conducted on social connectedness has been in the sociology and psychology realm.

More quantitative studies by nurse researchers to investigate how and where nursing can intervene and prevent the ill effects of social disconnectedness are needed. Identifying methods to improve and increase social connectedness could lead to decreased vulnerability or risk of adverse health outcomes.

One area of research needed is examination of the effects of social media on social connectedness. Social media includes Facebook, Twitter, and other forms of internet social interactions. There is some research being conducted which investigates how virtual relationships impact an individual's sense of trust and belonging and feelings of connectedness is important as these internet communities continue to expand. More research is needed to answer the question: "What effects do social media have on a person's ability to form relationships and gain social support?"

The current study and much of the literature investigated the relationships between the social connectedness and spiritual perspective on physical and mental health from a quantitative viewpoint. While much has been learned in these studies, there is a lack of in-depth knowledge concerning the lived experience of social connectedness and spiritual perspective. A qualitative study could give insights into how rural populations experience social connectedness and spiritual perspective, how social connectedness and spiritual perspective affect their perception of their health specifically, and the level of importance they attach to the variables and addition variables that might influence the relationships between the variables. A qualitative viewpoint would provide more complex data for rural community health care providers to aid in understanding the relationships between social connectedness and spiritual perspectives on perceived physical and mental health.

Summary

In summary, the purpose of this dissertation research was to examine the relationships between social connectedness and spirituality on the level of depression and perceived health in a population of rural inhabitants of western Colorado. We found that social connectedness was a significant predictor of perceived health and self-reported depression in rural residents of a western Colorado county but, unlike previous work, spiritual perspective did not significantly predict self-reported depression or perceived health.

There are many implications from the results of this study for rural community leaders and health care providers. First, understanding the importance of social connectedness and spirituality on physical and mental health is essential and must be communicated to rural health and elected officials. Second, social determinants of health including social support and relationships must be taken into consideration when health needs assessments of communities and individuals are being conducted. Treatment decisions and interventions should take these social relationships into consideration for improved patient centered care, better health outcomes and healthy patients and communities. And finally, health care policies at the local, state and federal levels must be developed which will address the social determinants of health and health inequalities that arise from lack of social resources in rural communities. Policies that address social determinants of health must also address the socioeconomic, social support and social capital issues. Lack of resources and increased risk factors in vulnerable rural populations should also be explored.

Further research, both quantitative and qualitative, is needed to increase the knowledge base of the relationships between social connectedness and spirituality on level of depression and perceived health in rural populations. In addition, studies to develop interventions to increase social connectedness would have great impact on the physical and mental health of socially isolated individuals.

Nurses have a tremendous opportunity to make a difference in rural patients' lives, and by increasing our understanding of the contributions to their overall physical and mental health we can develop treatment plans that are more inclusive and better tailored to their health needs. Nursing is in a unique position to influence local, state and national health policies to assure the social determinants of health are addressed for all communities and individuals, both urban and rural.

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APPENDIX A

**UNIVERSITY OF NORTHERN COLORADO INSTITUTIONAL
RESEARCH BOARD VERIFICATION OF EXEMPT STATUS
OF ORIGINAL APPLICATION AND AMMENDMENTS**

UNIVERSITY of
NORTHERN COLORADO



Institutional Review Board

DATE: January 3, 2013
TO: Ann Galloway
FROM: University of Northern Colorado (UNCO) IRB
PROJECT TITLE: [391162-1] RELATIONSHIPS BETWEEN SOCIAL CONNECTEDNESS AND SPIRITUALITY ON DEVELOPMENT OF DEPRESSION AND PERCEIVED HEALTH STATUS IN RURAL POPULATIONS
SUBMISSION TYPE: New Project
ACTION: VERIFICATION OF EXEMPT STATUS
DECISION DATE: December 27, 2012

Thank you for your submission of New Project materials for this project. The University of Northern Colorado (UNCO) IRB verifies that this project is EXEMPT according to federal IRB regulations.

Ann - Hello, and thank you for your extreme patience in the IRB review process. I'm one of the co-chairs of IRB and I sincerely apologize for my delay in reviewing your application. Kudos on a very well-prepared application. In particular the provision of all of the permissions (grocery stores and measures) was great to see in your initial materials.

I have no requests for revisions that need to be submitted for subsequent review but have two points that need your attention:

1) please change the contact information at the end of your consent form to correctly reflect that if a participant believes he/she has been mistreated or has questions about protection of their rights as a participant in research the Office of Sponsored Programs (not Sponsored Programs for Academic Research Center) should be contacted and correct the phone number to 970-351-2161.

2) please note that any identifiable data (e.g., the names and numbers of individuals) needs to be maintained for 3 years after the completion of data collection and then it needs to be destroyed. Also, this data should be stored on the UNC campus in a secure location such as your advisor's office.

I will trust that you heed these two points and make the necessary changes before data collection begins. I do not need to review a revised consent form.

Your research has therefore been verified/approved exempt.

Best wishes with your data collection and don't hesitate to contact me if any IRB-related concerns arise.

Sincerely, Dr. Megan Stellino

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

UNIVERSITY of
NORTHERN COLORADO



Institutional Review Board

DATE: March 1, 2013

TO: Ann Galloway
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [391162-2] RELATIONSHIPS BETWEEN SOCIAL CONNECTEDNESS AND SPIRITUALITY ON DEVELOPMENT OF DEPRESSION AND PERCEIVED HEALTH STATUS IN RURAL POPULATIONS

SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS

DECISION DATE: March 1, 2013

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

UNIVERSITY of
NORTHERN COLORADO



Institutional Review Board

DATE: March 27, 2013
TO: Ann Galloway
FROM: University of Northern Colorado (UNCO) IRB
PROJECT TITLE: [391162-3] RELATIONSHIPS BETWEEN SOCIAL CONNECTEDNESS AND SPIRITUALITY ON DEVELOPMENT OF DEPRESSION AND PERCEIVED HEALTH STATUS IN RURAL POPULATIONS
SUBMISSION TYPE: Amendment/Modification
ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE: March 27, 2013

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

APPENDIX B
LOCATION PERMISSION LETTERS

UNIVERSITY of
NORTHERN COLORADO



Project Title: Relationships between Social Connectedness and Spirituality on Development of Depression and Perceived Health Status in Rural Populations

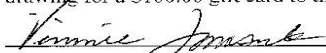
Researcher: Ann Galloway, PhD student, Nurse Practitioner at Grand River Student Health Center

Phone Number: (719)565-9983

e-mail: gall3378@bears.unco.edu

To Whom It May Concern:

Ms. Galloway has permission to conduct a research study in the retail facility, Clark's Market in Battlement Mesa, Colorado. The purpose of the study is to help rural health care providers and community leaders identify the health care needs of Garfield County residents. I understand that this will involve obtaining a convenience sample of our customers. Participants will be asked to complete a pen and paper survey. Ms. Galloway will be allowed to set up a small card table and chairs in an area that will be non-obtrusive to the facility. I also understand as an added incentive, all participants may enter a drawing for a \$100.00 gift card to this retail facility.



Manager's Signature

285-5667

11-18-12

Date

UNIVERSITY of
NORTHERN COLORADO



Project Title: Relationships between Social Connectedness and Spirituality on Development of
Depression and Perceived Health Status in Rural Populations

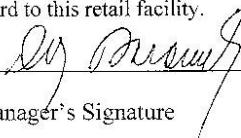
Researcher: Ann Galloway, PhD student, Nurse Practitioner at Grand River Student Health Center

Phone Number: (719)565-9983

e-mail: gall3378@bears.unco.edu

To Whom It May Concern:

Ms. Galloway has permission to conduct a research study in the retail facility, City Market in Rifle, Colorado. The purpose of the study is to help rural health care providers and community leaders identify the health care needs of Garfield County residents. I understand that this will involve obtaining a convenience sample of our customers. Participants will be asked to complete a pen and paper survey. Ms. Galloway will be allowed to set up a small card table and chairs in an area that will be non-obtrusive to the facility. I also understand as an added incentive, all participants may enter a drawing for a \$100.00 gift card to this retail facility.



Manager's Signature



Date

970-625-3080
Dita

UNIVERSITY of
NORTHERN COLORADO



Project Title: Relationships between Social Connectedness and Spirituality on Development of Depression and Perceived Health Status in Rural Populations

Researcher: Ann Galloway, PhD student, Nurse Practitioner at Grand River Student Health Center

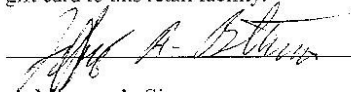
Phone Number: (719)565-9983

e-mail: gall3378@bears.unco.edu

To Whom It May Concern:

Ms. Galloway has permission to conduct a research study in the retail facility, City Market in New Castle, Colorado. The purpose of the study is to help rural health care providers and community leaders identify the health care needs of Garfield County residents. I understand that this will involve obtaining a convenience sample of our customers. Participants will be asked to complete a pen and paper survey.

Ms. Galloway will be allowed to set up a small card table and chairs in an area that will be non-obtrusive to the facility. I also understand as an added incentive, all participants may enter a drawing for a \$100.00 gift card to this retail facility.



Manager's Signature

11-15-12

Date

UNIVERSITY of
NORTHERN COLORADO



Project Title: Relationships between Social Connectedness and Spirituality on
Development of Depression and Perceived Health Status in Rural Populations

Researcher: Ann Galloway, PhD candidate, NP-C
Phone: 719-565-9983 e-mail: gall3378@bears.unco.edu

To Whom It May Concern:

Ms. Galloway has permission to conduct research data collection during the Battlement Mesa Health Fair on March 2, 2013 at the Battlement Mesa Activity Center. The purpose of the study is to help rural health care providers and community leaders identify the health care needs of Garfield County residents. This will involve obtaining a convenience sample of participants. Participants will be asked to complete a pen and paper survey.

Arilea Maddalene

Signature of Health Fair Coordinator

2/11/2013

Date

UNIVERSITY of
NORTHERN COLORADO



Project Title: Relationships between Social Connectedness and Spirituality on
Development of Depression and Perceived Health Status in Rural Populations

Researcher: Ann Galloway, PhD candidate, NP-C
Phone: 719-565-9983 e-mail: gall3378@bears.unco.edu

To Whom It May Concern:

Ms. Galloway has permission to conduct research data collection during the Gallop Run on April 6, 2013 at Grand River Hospital. The purpose of the study is to help rural health care providers and community leaders identify the health care needs of Garfield County residents. This will involve obtaining a convenience sample of participants. Participants will be asked to complete a pen and paper survey.



Signature of Gallop Run Coordinator

3/13/13

Date

APPENDIX C
RECRUITING FLYER

RESEARCH STUDY

UNIVERSITY of
NORTHERN COLORADO



PROJECT TITLE:

RELATIONSHIPS BETWEEN SOCIAL CONNECTEDNESS AND SPIRITUALITY ON DEVELOPMENT OF DEPRESSION AND PERCEIVED HEALTH STATUS IN RURAL POPULATIONS

WHAT: A health related survey conducted by Ann Galloway, FNP-C & PhD student at the University of Northern Colorado

WHERE: Clark's Market in Battlement Mesa, City Market in Rifle, and City Market in New Castle

WHEN: Dates in January, February and March, 2013

HOW: All participants will be asked to complete a pen and paper questionnaire on site.

TIME REQUIRED: 10-15 minutes only.

INFORMATION: All answers are kept confidential. You will not be identified in anyway

CONTACT INFORMATION

RESEARCHER:

ANN GALLOWAY, PHD STUDENT

PHONE NUMBER: (719)565-9983

RESEARCH ADVISOR:

MELISSA HENRY, PHD

PHONE NUMBER: (970)351-1735



APPENDIX D

**CONSENT FORM FOR HUMAN
PARTICIPANTS IN RESEARCH**

UNIVERSITY of
NORTHERN COLORADO



Project Title: Relationships between Social Connectedness and Spirituality on Development of Depression and Perceived Health Status in Rural Populations

Researcher: Ann Galloway, PhD student

Phone Number: (719)565-9983 e-mail: gall3378@bears.unco.edu

Research Advisor: Dr. Melissa Henry, PhD

Phone Number: (970)351-1735; e-mail melissa.henry@unco.edu

You have been selected to participate in a health related survey. This survey asks questions regarding the thoughts and feelings of Garfield County residents concerning their mental and physical health.

Your involvement, if you choose to participate, will consist of completing the attached survey and placing it in the slotted, locked box at the researcher's data collection table. The entire questionnaire will take 10-15 minutes to complete. The only cost to you is the time required to complete the survey.

The identity of everyone who decides to participate will be kept confidential. No identifying information should be included in the survey. The researcher will have no way of knowing who returns the survey as long as the person filling it out avoids writing anything on the survey other than answering the required questions. All returned surveys will be kept in a secure, locked file.

Completing this survey will help rural health care providers and community leaders identify the health care needs of Garfield County residents. Programs and resources can be developed to meet these needs based on your responses. You may benefit from becoming more aware of your personal thoughts and feelings concerning your own health.

As an added thank you, all participants may enter a drawing for a \$100.00 gift card to the store where you completed the survey. There are entry forms for the drawing available and you must provide a name and phone number. These entry forms will be collected into a separate locked box from your surveys. The drawing will be held as soon as the data collection period is over. You do not need to attend the drawing and the winner will be notified by phone.

The risks associated with this type of study are very few. There may be a risk of becoming tired or stressed while completing a pen and paper survey but the length of the survey has been kept short in order to reduce this risk. There may be a risk of emotional discomfort when discussing attitudes, beliefs, and experiences. If you have any emotional discomfort or if you scored high on the depression scale and would like to talk with a mental health professional, please contact Colorado West at 970-625-3582 (Rifle – 24 hour phone line) or 970-945-2583 (Glenwood Springs-24 hour phone line).

Participation is strictly voluntary and you have the right to withdraw and withhold information at any time. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Return of the survey implies consent to participate in this study.

If you choose to participate please complete the survey using the pen provided and follow the directions on each page. Place the completed survey in the designated box and don't forget to also complete the entry form for the gift card drawing and place it into the smaller designated box.

If you have any concerns about your selection or treatment as a research participant, please contact the Sponsored Programs and Academic Research Center, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1907.

APPENDIX E

**DIRECTIONS FOR COMPLETING THE SURVEY
AND SURVEY INSTRUMENT**

Directions for Completing the Survey

Thank you for taking time to complete this survey. The survey is designed to gather data concerning your personal thoughts and feelings. There is not a right or wrong answer on any item. All answers will be kept confidential and no identifying information will be gathered. Please do not write on the survey other than marking the answer you have chosen. Avoid any identifying marks or comments, please.

The first part of the survey is gathering of demographics. Please indicate the category that best describes you and your personal situation. The next sections require you to rate your answers based on how much you agree or disagree with the statement. The entire survey should take 10-15 minutes to complete. If you have any questions during the process, please ask the researcher for help. After you finish completing the survey, please place it into the large, slotted, locked box on the table.

You may also fill out the separate entry form to be entered into a random drawing for a \$100 gift card from this retail store. If you choose to participate in the drawing, write your name and phone number on the entry form and place the form into the smaller, slotted, locked box. The entry form and surveys will be kept separate so your anonymity will be maintained as much as possible. Drawings will be held when the data collection period is complete. You do not have to be present at the drawing in order to win. The winner will be notified by the researcher.

Demographics Survey

Gender: **Female** **Male**

Age:

18-30 years; **31-40 years;** **41-50 years;** **51-60 years;**

61-70 years; **71-80 years;** **>80 years**

Household Annual Income:

< \$10,000/year

\$41,000 - \$50,000/year

\$10,000 – \$20,000/year

\$51,000 - \$65,000/year

\$21,000 - \$30,000/year

\$66,000 - \$100,000/year

\$31,000 - \$40,000/year

> \$100,000/year

Ethnicity:

White/Non-Hispanic

Hispanic or Latino

African-American

Asian

Native American/Pacific Islander

Multi-racial

Length of time you have resided in Garfield County: _____ **months/years**

Do you live in incorporated (towns) or unincorporated areas of Garfield County?

_____ **Incorporated**

_____ **Unincorporated**

Except for family members living in the same house, how many family members live within 30 miles of you? _____

SOCIAL CONNECTEDNESS SCALE-REVISED

Directions: Following are a number of statements that reflect various ways in which we view ourselves. Rate the degree to which you agree or disagree with each statement using the following scale (1 = Strongly Disagree and 6 = Strongly Agree). There is no right or wrong answer. Do not spend too much time with any one statement and do not leave any unanswered.

	Strongly Disagree	Mildly Disagree	Disagree	Agree	Mildly Agree	Strongly Agree
	1	2	3	4	5	6
					Strongly	
					Strongly	
					<u>Disagree</u>	<u>Agree</u>
1. I feel comfortable in the presence of strangers.....	1	2	3	4	5	6
2. I am in tune with the world.....	1	2	3	4	5	6
*3. Even among my friends, there is no sense of brother/sisterhood.....	1	2	3	4	5	6
4. I fit in well in new situations.....	1	2	3	4	5	6
5. I feel close to people.....	1	2	3	4	5	6
*6. I feel disconnected from the world around me.....	1	2	3	4	5	6
*7. Even around people I know, I don't feel that I really belong.....	1	2	3	4	5	6
8. I see people as friendly and approachable.....	1	2	3	4	5	6
*9. I feel like an outsider.....	1	2	3	4	5	6
10. I feel understood by the people I know.....	1	2	3	4	5	6

*11. I feel distant from people.....	1	2	3	4	5	6
12. I am able to relate to my peers.....	1	2	3	4	5	6
*13. I have little sense of togetherness with my peers.....	1	2	3	4	5	6
14. I find myself actively involved in people's lives.....	1	2	3	4	5	6
*15. I catch myself losing a sense of connectedness with society.....	1	2	3	4	5	6
16. I am able to connect with other people.....	1	2	3	4	5	6
*17. I see myself as a loner.....	1	2	3	4	5	6
*18. I don't feel related to most people.....	1	2	3	4	5	6
19. My friends feel like family.....	1	2	3	4	5	6
*20. I don't feel I participate with anyone or any group...	1	2	3	4	5	6
				<u>Strongly Disagree</u>		<u>Agree</u>

* reverse score

Social connectedness scale-revised has two scoring options. The original scale consists of 8 items and the revised item consists of 20 items.

a) original = reverse score items 3,6,7,11,13,15,18,20 and sum 8 items.

b) revised scale = reverse score items 3,6,7,9,11,13,15,17,18,20 and sum all 20 items.

Code No. _____

SPIRITUAL PERSPECTIVE SCALE ©Reed, 1986

Introduction and Directions: In general, spirituality refers to an awareness of one's inner self and a sense of connection to a higher being, nature, others, or to some purpose greater than oneself. I am interested in your responses to the questions below about spirituality as it may relate to your life. There are no right or wrong answers. Answer each question to the best of your ability by marking an "X" in the space above that group of words that best describes you.

1. In talking with your family or friends, how often do you mention spiritual matters?

Not at all	Less than once a year	About once a year	About once a month	About once a week	About once a day
------------	--------------------------	----------------------	-----------------------	----------------------	---------------------

2. How often do you share with others the problems and joys of living according to your spiritual beliefs?

Not at all	Less than once a year	About once a year	About once a month	About once a week	About once a day
------------	--------------------------	----------------------	-----------------------	----------------------	---------------------

3. How often do you read spiritually-related material?

Not at all	Less than once a year	About once a year	About once a month	About once a week	About once a day
------------	--------------------------	----------------------	-----------------------	----------------------	---------------------

4. How often do you engage in private prayer or meditation?

Not at all	Less than once a year	About once a year	About once a month	About once a week	About once a day
------------	--------------------------	----------------------	-----------------------	----------------------	---------------------

Continued on next page

Spiritual Perspective Scale (continued)

Directions: Indicate the degree to which you agree or disagree with the following statements by marking an "X" in the space above the words that best describe you.

5. Forgiveness is an important part of my spirituality.

Strongly Disagree	Disagree	Disagree more than agree	Agree more than disagree	Agree	Strongly Agree
-------------------	----------	-----------------------------	-----------------------------	-------	----------------

6. I seek spiritual guidance in making decisions in my everyday life.

Strongly Disagree	Disagree	Disagree more than agree	Agree more than disagree	Agree	Strongly Agree
-------------------	----------	-----------------------------	-----------------------------	-------	----------------

7. My spirituality is a significant part of my life.

Strongly Disagree	Disagree	Disagree more than agree	Agree more than disagree	Agree	Strongly Agree
-------------------	----------	-----------------------------	-----------------------------	-------	----------------

8. I frequently feel very close to God or a "higher power" in prayer, during public worship, or at important moments in my daily life.

Strongly Disagree	Disagree	Disagree more than agree	Agree more than disagree	Agree	Strongly Agree
-------------------	----------	-----------------------------	-----------------------------	-------	----------------

9. My spiritual views have had an influence upon my life.

Strongly Disagree	Disagree	Disagree more than agree	Agree more than disagree	Agree	Strongly Agree
-------------------	----------	-----------------------------	-----------------------------	-------	----------------

10. My spirituality is especially important to me because it answers many questions about the meaning of life.

Strongly Disagree	Disagree	Disagree more than agree	Agree more than disagree	Agree	Strongly Agree
-------------------	----------	-----------------------------	-----------------------------	-------	----------------

If possible, please describe how you define spirituality on the back of this page, or provide any other comments you feel are important for the researcher to know about. Thank you.

©Reed, 1986

Center for Epidemiologic Studies Depression Scale – Revised (CESD-R)

Below is a list of the ways you might have felt or behaved. Please check the boxes to tell me how often you have felt this way in the past week or so.	Last Week				Nearly every day for 2 weeks
	Not at all or Less than 1 day	1 - 2 days	3 - 4 days	5 - 7 days	
My appetite was poor.	0	1	2	3	4
I could not shake off the blues.	0	1	2	3	4
I had trouble keeping my mind on what I was doing.	0	1	2	3	4
I felt depressed.	0	1	2	3	4
My sleep was restless.	0	1	2	3	4
I felt sad.	0	1	2	3	4
I could not get going.	0	1	2	3	4
Nothing made me happy.	0	1	2	3	4
I felt like a bad person.	0	1	2	3	4
I lost interest in my usual activities.	0	1	2	3	4
I slept much more than usual.	0	1	2	3	4
I felt like I was moving too slowly.	0	1	2	3	4
I felt fidgety.	0	1	2	3	4
I wished I were dead.	0	1	2	3	4
I wanted to hurt myself.	0	1	2	3	4
I was tired all the time.	0	1	2	3	4
I did not like myself.	0	1	2	3	4
I lost a lot of weight without trying to.	0	1	2	3	4
I had a lot of trouble getting to sleep.	0	1	2	3	4
I could not focus on the important things.	0	1	2	3	4

REFERENCE: Eaton, W. W., Smith, C., Ybarra, M., Muntaner, C., Tien, A. (2004). Center for Epidemiologic Studies Depression Scale: review and revision (CESD and CESD-R). In ME Maruish (Ed.). *The Use of Psychological Testing for Treatment Planning and Outcomes Assessment* (3rd Ed.), Volume 3: Instruments for Adults, pp. 363-377. Mahwah, NJ: Lawrence Erlbaum.

Your Health and Well-Being

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. *Thank you for completing this survey!*

For each of the following questions, please mark an in the one box that best describes your answer.

1. In general, would you say your health is:

Excellent	Very good	Good	Fair	Poor
▼	▼	▼	▼	▼
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

2. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	Yes, limited a lot	Yes, limited a little	No, not limited at all
	▼	▼	▼
a	Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.....		<input type="checkbox"/> 1..... <input type="checkbox"/> 2.....
b	Climbing <u>several</u> flights of stairs		<input type="checkbox"/> 1..... <input type="checkbox"/> 2.....

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

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
	▼	▼	▼	▼	▼
a. <u>Accomplished less than you would like</u>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
b. Were limited in the <u>kind</u> of work or other activities.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

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

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
	▼	▼	▼	▼	▼
a. <u>Accomplished less than you would like</u>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
b. Did work or other activities <u>less carefully than usual</u>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

5. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all	A little bit	Moderately	Quite a bit	Extremely
▼	▼	▼	▼	▼
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

6. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
	▼	▼	▼	▼	▼
a Have you felt calm and peaceful?.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
b Did you have a lot of energy?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
c Have you felt downhearted and depressed?.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

7. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

All of the time	Most of the time	Some of the time	A little of the time	None of the time
▼	▼	▼	▼	▼
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Thank you for completing these questions!

APPENDIX F

**PERMISSION TO USE SURVEY
INSTRUMENT LETTERS**

Pam Bartley [pbartley@qualitymetric.com]

To: Ann Galloway

Cc: gall3378@unco.edu

Attachments:

[University of Northern Col~1.pdf \(41 KB\)\[Open in Browser\]](#)

Wednesday, July 18, 2012 7:07 PM

Dear Ann:

I want to thank you for complying with all of my requests for documentation and information. The reason the qualification process for our OGSR Unfunded Student Program is so rigid is because our program is designed to help students working on their thesis or dissertation projects. We know that our academic colleagues usually do not have outside funding resources and often are working with very stringent budgetary confinement.

You will be happy to hear that your study has been qualified to our program. This means that you are being offered licensure, copies of the most updated version of our survey form (in both .pdf and MSWord formats), scoring software with scoring credits, MSE (Missing Score Estimator) scoring add-on feature, and an electronic version of the survey appropriate Quick Start Guide. These items usually cost hundreds or even thousands of dollars. It is important to us that you are able to fit our survey form into your study. Every publication, every study that utilizes our survey lends credence to the fact that our survey forms are widely used and “world standard”. For this reason, you will be receiving a license package which includes all of the above mentioned materials and licensure for FREE.

I will need for you to review, sign and return all pages of the attached document via scan/email or direct fax to: 401-642-9341. Once returned, I will be able to release the order to your email and will send you a countersigned copy of the Agreement for your records. I hope that this is good news to you and your study. Please let me know if I can assist in any way...

-Pam Bartley

Reed, Pamela [preed@nursing.arizona.edu]

To:

Ann Galloway

Attachments:

(2)Download all attachments

SPS packet rev for pdf.pdf (38 KB)[Open in Browser]; STS Packet 09.pdf (52 KB)[Open in Browser]

Tuesday, September 20, 2011 4:09 PM

You replied on 10/7/2011 9:13 AM.

Hello Ann,

Thank you for your interest in my work. I missed your earlier email, so thank you for resending this one. Your project sounds quite interesting! You are welcome to use my instruments. For permission, I ask only that complete and return the [Request Forms](#) by email to me, for my files. These forms are included in the attachments, which have the instruments and some background and coding information. As you know, many researchers have used the instruments with success and ease!

One quick comment -- by your interesting Research Question 2, it looks like you are examining the relationship between faculty SPS and STS scores AND some measure of level of interest or involvement in spiritual care education. You might also consider including an open-ended question here and there to obtain more data to help explain your findings.

Best wishes on your exciting education study! I'll look forward to hearing about it. If any questions arise, don't hesitate to contact me.

Sincerely, Pam

Pamela G. Reed, PhD, RN, FAAN

Professor University of Arizona College of Nursing

1305 Martin St.

Tucson, AZ 85721-0203 preed@nursing.arizona.edu

Reed, Pamela [preed@nursing.arizona.edu]

Monday, August 13, 2012 3:13 PM

Hello Ann,

Nice to hear from you. And you are welcome to use the SPS in your dissertation as revised. It sounds like a great topic of study!

Incidentally, the STS correlates very strongly with Depression across a variety of studies, but it will be interesting to see how the SPS relates to your variables too.

Best wishes! Any questions -- let me know.

Pam

Pamela G. Reed, PhD, MSN, RN, FAAN

Professor

The University of Arizona

College of Nursing

1305 N. Martin St.

Tucson, AZ 85721-0203

preed@nursing.arizona.edu

In response to the message from Reed, Pamela, 9/20/2011

To: Reed, Pamela [preed@nursing.arizona.edu]

Cc: Melissa.Henry@unco.edu

Sent Items

Sunday, August 12, 2012 6:08 PM

Hi Dr. Reed,

I requested permission to use the SPS and STS in the fall of 2011 for my dissertation research investigating the relationships between nursing faculty SPS and STS scores and the comfort levels of teaching spiritual care in nursing education. You graciously agreed and sent me the forms and scoring information (see email below).

I want to let you know that my dissertation topic has changed. My research topic now is *"Relationships between Social Connectedness and Spiritual Perspectives on Development of Depression and Perceived Health Status in Rural Populations"*.

I would still like to use the Spiritual Perspective Scale for this study if possible. I am interested in studying how spiritual perspectives relate to depression and health status in this particular population. And I am very interested in looking at the concept of connectedness in both social connectedness and the characteristic of connection in spirituality.

I look forward to hearing from you soon about this request.

Sincerely,

Ann

Richard Lee [richlee@umn.edu]

To:

[Ann Galloway](#)

Attachments:

[\(2\)Download all attachments](#)

[Lee Dean Jung \(2008\).pdf \(350 KB\)\[Open in Browser\]](#); [SCS for use in research.pdf \(21 KB\)\[Open in Browser\]](#)

Tuesday, July 17, 2012 12:04 PM

You replied on 7/17/2012 1:37 PM.

thank you for the interest in my measure. i have attached a copy of the measure, including different versions, scoring procedures, select references, and terms for usage. i also included a 2008 paper in which we dropped 5 items from the revised scale that overlap with extraversion. you can use any version. please read the terms for usage and let me know if they are acceptable prior to use of the scale. best, rich
