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Coping Strategies among Religiously Committed Survivors of Hurricane Katrina in the State of Mississippi

Walter Lee Frazier

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COPING STRATEGIES AMONG RELIGIOUSLY COMMITTED SURVIVORS
OF HURRICANE KATRINA IN THE STATE OF MISSISSIPPI

By

Walter Lee Frazier

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Counselor Education
in the Department of Counseling and Educational Psychology

Mississippi State University

May, 2009
COPING STRATEGIES AMONG RELIGIOUSLY COMMITTED SURVIVORS OF HURRICANE KATRINA IN THE STATE OF MISSISSIPPI

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In this study, the role of positive and negative religious coping was evaluated for their interrelationship with demographic variables, religious variables, and the outcome of mental health distress. A sample of 253 United Methodist Church leaders from counties throughout the state of Mississippi completed a survey including measures for demographic characteristics, religious coping, general coping, and mental health distress. Through regression analysis and path analysis, the relationships among the variables were measured to determine the importance of religious coping strategies while controlling for demographic variables and general forms of coping.

Through regression analysis, the subjective report of personal losses immediately after Hurricane Katrina, participation in religious activities, and involvement in recovery efforts significantly predicted the presence of mental health distress among United Methodist Church leaders in Mississippi. In particular, religious participation insulated
against the presence of mental health distress while personal losses and recovery involvement promoted the likelihood of mental health distress.

Positive forms of general coping as well as religious forms of coping provided no significant contribution to the presence or absence of mental health distress, but negative forms of general coping did predict higher levels of mental health distress. Among this religiously oriented sample, religious forms of coping was not significantly predictive of the presence of mental health distress after accounting for general forms of coping which suggested that religious coping may be indistinguishable from forms of coping that are more generalized in nature.

Through path analysis, negative religious coping significantly influenced the increased presence of mental health distress but did not serve as a mediator between mental health distress and other religious and demographic variables. A surprising finding in this study was the important mediating role of recovery involvement between mental health distress and other factors including religious participation, religious salience, and status as an ordained minister. Additionally, at nearly three years after the storm, persons reporting to currently live in close proximity to the disaster and persons continuing to experience loss due to the disaster reported a higher prevalence of mental health distress. Implications for the current literature and the need for further research were discussed.

Key Words: religious coping, disaster, mental health distress, recovery involvement
DEDICATION

I would like to dedicate this research in memory of Warren Grabau. Warren was 78 years old when he died, about the time I was putting the final edits on this dissertation. Warren always reminded me and many others that statistics is like holding Jello, don’t hold on to it too tightly. He also encouraged us to explore and keep asking questions. He exemplified this until the very day he died, and while he will be missed deeply, he has deeply impacted many, so we live knowing he is still with us.
ACKNOWLEDGEMENTS

This project has been a very long process, and I have many people to thank. My first gratitude goes to my wife, Terri Cowart Frazier, who has watched me struggle through this process, dealt with my moments of frustration and excitement, and stood beside me, sometimes with her own frustration, throughout the entire effort.
Additionally, my entire family and extended family has continued to be a constant cheering squad. Thank you.

I am appreciative of my dissertation co-chair, Dr. J. Scott Young, who kept me on track and encouraged me throughout the process, and Anastasia Elder, my other co-chair, who helped tremendously with editing and shaping this dissertation, particularly the reporting of the statistical analysis. I am grateful to the other committee members, Dr. Dale Lynn Holt, Dr. Deb Wells, and Dr. Joe Ray Underwood, for their contributions and advice that helped accomplish this project.

I also want to extend a special thanks to my best friend, Howell Jones, who constantly reminded me of the goal and the bigger picture. I also have close friends and colleagues, John Hawkins, Tommy Fonseca, and Donna Barefoot, all of whom have been at different stages of this process in their own dissertations while providing me encouragement, accountability, and support. I thank all three of you, too.
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CHAPTER I
INTRODUCTION

Background

On August 29, 2005, Hurricane Katrina made landfall on the Gulf Coast region of the United States causing far reaching devastation throughout the state of Mississippi as well as the states of Louisiana and Alabama. Katrina was the third most deadly hurricane and the most expensive natural disaster in U.S. history. Approximately 1,500 people were killed, and over $80 billion in damages were amassed. When adjusted for inflation, Hurricane Katrina cost nearly double that of Hurricane Andrew in 1992 (Blake, Rappaport & Landsea, 2007). With a storm surge as high as 27 feet and reaching inland as far as twelve miles and hurricane force winds moving inland approximately 200 miles, some 900,000 square miles were declared a disaster area, and more than 500,000 people were evacuated (US Congress, 2006). Seventy-five counties and parishes in Mississippi, Alabama, and Louisiana were declared Federal Disaster Areas where individuals and families could receive federal assistance. In Mississippi, 50 of 82 counties qualified for this designation (FEMA, 2005 Federal Disaster Declarations).

In the three coastal counties of Mississippi (Jackson, Hancock and Harrison) approximately 66,000 people lost their homes to severe damage from flooding and wind (US Congress, 2006). The Federal Emergency Management Agency (FEMA) reported
25,871 temporary housing units such as travel trailers and mobile homes were put in service. (FEMA, April 24, 2007). The U.S. Census Bureau estimated that the three coastal counties of Mississippi decreased in population by 13.5% or nearly 50,000 people between July 1, 2005 and January 1, 2006 (U.S. Census Bureau, Special Population Estimates for Impacted Counties in the Gulf Coast Area). Although the statistics of Katrina are staggering, equally important are the psychological impacts associated with the storm. Understanding how people cope with such an overwhelming natural disaster is an important question for mental health professionals.

The Psychological Impact of Disasters

Victims of events such as hurricanes, tornados, earthquakes, tsunamis, or even large scale human-made disasters and violence face the challenge of higher levels of emotional distress (Assanangkornchai, Tangboonngam, & Edwards, 2004). Surprisingly, the vast majority of persons experience little or no distress as a result of such calamities (Bonanno, 2004). Human resiliency protects against distress for the majority of persons experiencing the trauma of disaster, but among those that do experience Mental Health Distress (MHD), it would be of benefit to counselors to understand what factors contribute to increased levels of distress.

Numerous variables including age of the survivor, the presence of pre-existing mental health conditions, and the survivor’s proximity to the disaster have been measured in previous studies in an effort to determine who may be more psychologically vulnerable in the aftermath of a disaster. North, Smith, and Spitznagel (1997) conducted a longitudinal study of disaster survivors which found that comorbidity of various
psychiatric disorders was prevalent among 25% of their sample. They also determined that a pre-disaster psychiatric diagnosis significantly predicted post-disaster post-traumatic stress disorder symptoms.

In a meta-analysis of 52 studies measuring psychological outcomes following various types of natural and technical disasters, Rubonis and Bickman (1991) found a positive correlation between psychopathology and disaster, estimating that the disaster increased the prevalence of psychopathology by 17.4%. In 36 of the studies reviewed, between 7% and 40% of victims demonstrated some kind of psychopathology. In particular, the authors identified anxiety as the most prevalent condition among disaster victims.

In a review of 225 articles covering 132 disaster events including natural, technological, and mass violence, Norris (2005) demonstrated that mental health conditions including depression, anxiety, and post-traumatic stress as well as somatic complaints were typically exacerbated by disaster. The level of impact upon mental health variables by the disaster seemed to be effected by the severity of the disaster as well as variables associated with the particular sample being evaluated.

Specific to the disaster brought by Hurricane Katrina, estimates by the Substance Abuse and Mental Health Services Administration (SAMHSA) made soon after the hurricane were that 500,000 individuals might need some kind of mental health treatment as a result of the storm (Strong, 2006).

The World Health Organization conducted a pre- and post-disaster comparative study of persons living in the area affected by Hurricane Katrina. The authors utilized baseline data from the Centers for Disease Control National Comorbidity Survey-
Replication (NCS-R) (Kessler & Merikangas, 2004) conducted between February of 2001 and February of 2003, prior to Hurricane Katrina in 2005. Data collected by survey researchers between January and March of 2006 (Kessler, Galea, Jones, & Parker, 2006) revealed that incidents of mental disorders including depression and anxiety related disorders (i.e., major depression, generalized anxiety, post-traumatic stress disorder, specific phobia, social phobia, and agoraphobia) had doubled following Hurricane Katrina, increasing from 15.7% to 31.2% of those surveyed. The researchers also found that geographic location determined differences in prevalence rates. Approximately 50% of those surveyed from the New Orleans, Louisiana, area exhibited mood and anxiety related disorders while about one-fourth of persons from areas outside of the New Orleans Metro area reported these disorders (Kessler et al.).

Given that disasters have such far reaching psychological consequences for survivors, the need to understand positive coping strategies is clear. Needless to say, to better understand the coping strategies that disaster survivors utilize to recover from these traumatic events is of great interest to practicing counselors who are often frontline crisis workers. What does seem clear is that individuals who experience natural and human made disasters are at higher risk for ongoing psychological difficulties.

Religious Coping among Disaster Survivors

In the face of overwhelming natural and human-made disasters, the expectation that religious involvement serves a positive role in the adjustment process seems plausible and certainly is a popular assumption (Ellison, 1991; Koenig, 2002). Unfortunately, the research to confirm or disprove this assumption is minimal.
Nevertheless, religious involvement is a coping strategy that is widely utilized. For example, Schuster et al. (2001) found among persons in the United States surveyed during the weekend following the September 11 terrorist attacks in New York and Washington, DC, 90% reported they turned to prayer, religious participation, or spiritual reflection to cope with the event. Park and Cohen (1993) found a moderate rate of utilization of religious coping in response to the death of a close friend. Thompson and Vardaman (1997) measured high scores of spiritually based coping and religious support among 150 persons that had experienced the homicide of a close family member within the previous one-and-one-half to five years. Group religious involvement and private religious behavior seem to be commonly utilized coping strategies.

According to Pargament (1997), religion offers more than just comfort in times of crisis or trauma. It also serves as a mechanism for searching for significance including spirituality, meaning, physical health, intimacy, and a better world. Furthermore, religious involvement is a strategy for coping with overwhelming circumstances when little else can be done. Pargament defines coping as “a search for significance in times of stress” (p. 90). Pargament further contends that religious forms of coping come at the intersection of religious lifestyles and stressful events. While religious behavior is practiced during the absence of stressful events, it is clear that religious forms of coping are utilized by many individuals specifically as a response to crises. What is less clear is if and how religious coping aids individuals in maintaining or regaining a sense of psychological stability following a devastating stressor such as a natural disaster. In reference to the above mentioned World Health Organization study before and after Hurricane Katrina, the rate of suicidality during the six months following the disaster
remained relatively equal to pre-disaster trends with 0.2% reporting suicide plans and 2.8% reporting suicidal ideation. The authors concluded that personal growth variables, some religious in nature, help explain the low levels of suicidality, suggesting that religious coping may be one effective strategy for dealing with the disaster (Kessler et al., 2006). Confounding these initial results, in a follow up study conducted 18 months after the disaster, Kessler (2007) reports an increase in suicidality (suicidal ideation up to 6.4% from 2.8% and suicidal plans up to 0.8% from 0.2%) and a slight increase in the prevalence of mood and anxiety related disorders (up to 33.9% from 30.7%). Geographic distinctions became less evident over the 12 months between the baseline study and the follow up study. Using the description of severe mental illness (SMI) to describe persons that presented with a diagnosable mental health disorder as defined by Diagnostic and Statistical Manual of Mental Disorders (4th ed.; DSM-IV; American Psychiatric Association, 1994) and experiencing a level of 60 or lower Global Assessment of Functioning (GAF), the authors determined that the prevalence of SMI within the New Orleans Metro area had not changed, but for those outside New Orleans, the prevalence increased to 13.2%, up from 9.4%, in the baseline survey. The prevalence of post-traumatic stress disorder nearly doubled in the areas outside of New Orleans (up to 20.0% from 11.8%) (Kessler, 2007). So, over time, it is important to determine what role if any religious coping actually plays.

**Positive Impact of Religious Coping**

For many individuals, religious forms of coping support positive adjustment following various life stressors (Ano & Vasconcelles, 2005; Pargament, 1997). Researchers have
found positive correlations between religious coping and a variety of stressors including; bereavement (Maton, 1989; Park & Cohen, 1993; Thompson & Vardamen, 1997), following a breast cancer diagnosis (Alferi, Culver, Carver, Arena, & Antoni, 1999), while serving as a caregiver (Abernethy, Chang, Seidlitz, Evinger, & Duberstein, 2002; Belavich & Pargament, 2002; Miltiades & Pruchno, 2002; Tarakeshwar & Pargament, 2001), among elderly persons (Boswell, Kahana, & Dilworth-Anderson, 2006; Koenig, Pargament, & Neilson, 1998; Lowis et al., 2005; Pargament, Smith, Koenig, & Perez, 1998), during a high risk pregnancy (Giurgescu, 2006), and among persons diagnosed with HIV/AIDS (Cotton et al, 2006; Woods, Antoni, Ironson, & Kling, 1999).

Unfortunately, it remains unclear exactly how or if religiousness contributes to individual coping with large scale disasters (Pargament, Ano, & Wachholtz, 2005). Findings have not been consistent as various other studies have demonstrated insignificant or even negative relationships between variables for religiousness and spirituality and variables for physical and mental health wellbeing. (Grossman, Lee, Kenny, McHarg, Godin & Chambers-Evans, 2000). A review of research comparing religious involvement variables to variables of anxiety produced an assortment of results including negative, positive, and zero relationships. Numerous spurious variables seem to confound the outcomes. The literature is predominated with cross-sectional and observational research which indicates the potential for relationships. The lack of experimental and longitudinal studies has limited researchers’ ability to clearly assess the direct causal relationship between religious variables and anxiety (Pressman, Lyons, Larson, & Gartner, 1992).
Studies which demonstrate that religion plays a role in physical and mental health have become more prevalent over the past two decades (Ellison & George, 1994; Ellison & Levin, 1998; George, Ellison, & Larson, 2002; Koenig, George, & Peterson, 1998; Pressman et al., 1992). In fact, this subject has been researched over the past century, but until recently results have not been definitive enough to argue for a consensus that religion has a direct, causal role in physical and mental health. While many would argue that religion plays some kind of etiological role in health outcomes, others contend that studying the relationship between religion and health has problematic methodological issues such as the lack of consensus on the definition of the variables for religion and spirituality, the variations in the role of religion in communities in different parts of the United States, and the relationship between health and religious variables may be extensively complex (Thoresen & Harris, 2002). Despite some objections, interest in this particular area of research is taking hold in a wide variety of scientific fields and popular culture (Ellison & Levin, 1998). Because consensus cannot be reached, continued investigation is warranted (Koenig, 2002; Levin, 1996). As the research community has taken greater interest in the role of religious variables associated with physical and mental health, Thoresen and Harris propose that a balanced study of the relationship between these variables is warranted. While the evidence is still mixed, the growing appreciation for investigating a potential relationship between health and religion is encouraging for contemporary researchers.
Religious Involvement and Mental Health

Researchers have investigated the role of religious involvement and its association to a number of variables related to mental and physical health. Variables that have been associated with religious involvement are a) lower levels of smoking, drug or alcohol use, pre-marital and extra-marital sex, etc.; b) the reliance upon faith and a certain belief systems to promote optimism; c) the use of ritual in worship and life to promote relaxation or other benefits; d) the presence of social networks through congregational gatherings and interaction; e) indications of subjective religious identity, life satisfaction, and personal happiness; and f) the possibility of supernatural or paranormal events often attributed by religious belief (Ellison & George, 1994; Ellison & Levin, 1998; Levin, 1996; Rabin, 2002; Schumaker, 1992). Noticeably missing from this list is the benefit of religious involvement in coping with disaster. In fact, the review of literature conducted for this study revealed that this issue has been largely ignored by researchers.

Ellison and Levin (1998) found that religious involvement may contribute to better mental health by encouraging behaviors that reduce the chance for stress and problems while also encouraging involvement in positive, intimate relationships. They argue that religious involvement enhances the development of social networks, encourages building of self-esteem, promotes positive coping skills, teaches positive expression of emotion, and encourages positive outlooks on life. These benefits of religious involvement translate to behaviors that promote improved physical and mental health. However Ellison and Levin’s research, like much that has been conducted, did not consider how or if people utilize religious coping when they are faced with extraordinarily devastating natural disasters. Events which are unusually taxing for
people as they are faced with many levels of loss (i.e., home, job, social networks, familiar surroundings, access to daily living needs, death, illness, etc), which raises an intriguing question as to the role religious involvement might play. The saying, “there are no atheists in foxholes” captures the widespread belief that when humans encounter overwhelming circumstances they naturally turn to religion for solace. Yet for the practicing counselor, what is needed is a systematic investigation of how people who have survived such an event employ religious coping for the purpose of psychological benefit. More specifically, counselors need to know what religious or spiritual behaviors contribute to or reduce levels of mental health distress? Considering the complicated nature of spirituality and religiousness, do certain types of religious affiliations and religious behaviors contribute to coping strategies, particularly positive as well as negative religious coping? Finally, does positive and negative religious coping provide a distinctively different effect from general coping strategies?

**Evaluating the Mediating Role of Religious Coping and Recovery Involvement**

In light of the potentially complex interrelationships among demographic variables, religious variables, and coping variables when predicting levels of mental health distress, the researcher sought to understand how the variables accounted for variance in participant’s presence of mental health distress using the statistical tools of regression analysis and path analysis (Wright, 1921; Hair, Anderson, Tatham, & Black, 1998). Numerous studies have utilized path analysis to evaluate the complexity of various religious variables. For example, Nooney and Woodrum (2002) conducted a study utilizing path analysis to explain the relationship between religiousness and
spirituality and depression. Maltby and Day (2003) identified through path analysis that persons who utilize positive religious coping recognize stressors as “challenges” (rather than threats or losses) which contributed to these individuals’ positive growth. Ai, Peterson, and Huang (2003) completed a study with a group of Muslim refugees from Kosovo and Bosnia. It was found that a number of variables such as gender, education level, and trauma score in addition to religious coping impacted outcomes (i.e., participants’ levels of hope and optimism) through an interrelated path demonstrated by path analysis. Consistent with Pargament’s (1997) analysis of the religious coping, these studies demonstrate the complexity of the association between religiousness and spirituality and variables related to psychological adjustment and mental health. The compendium of research seems to suggest that how person experience stressful events is affected both by their styles of religious coping and with cognitive and behavioral attributes, demographic factors, and other religious variables.

To date, researchers have not yet examined the impact of involvement in disaster recovery efforts upon religiously affiliated individuals who participate in recovery efforts as an expression of their religious commitment. Nevertheless, the potential for vicarious trauma certainly exists. Persons of faith often feel compelled by religious mission to become intimately involved in providing care and concern for one another and others within their community affected by the disaster. These persons, both volunteers and professionals coordinated by religious institutions, may be at risk for mental health distress due to their direct involvement in a disaster setting. In fact, this issue was raised by the Mississippi Annual Conference of the United Methodist Church in concern about the church leaders including both clergy and laity in professional and volunteer roles,
exhibiting stress through prolonged exposure to recovery efforts throughout the disaster area in Mississippi (Personal Interview with Steve Casteel, Director of Connectional Ministries, Mississippi Annual Conference, April 18, 2008). Because measures for religious coping (Pargament, 1997) predominately represent cognitive attributes, measurements of recovery involvement, a more behavioral attribute, may offer additional complexity to the interrelationships of variables in predicting mental health distress among United Methodists in Mississippi.

**Purpose of the Study**

The purpose of the current study was to evaluate the role of demographic variables such as age, gender, proximity to Hurricane Katrina, religious and spirituality involvement, and religious and general forms of coping play in overall levels of mental health distress among survivors of Hurricane Katrina. Specifically this study considered the levels of mental health distress among religious leaders of the United Methodist Church living in the state of Mississippi during and after Hurricane Katrina on August 29, 2005. Using regression analysis and path analysis (Wright, 1921; Hair et al., 1998) this study analyzed the interrelationships between demographic, religious, and coping variables as they influenced mental health distress in the sample. With the time frame of the study occurring nearly three years after the disaster, the long term effects of the disaster upon mental health were evaluated.
Research Questions

1. Among United Methodist survivors of Hurricane Katrina in Mississippi, what combination of demographic and religious variables best predict variance in levels of Mental Health Distress (MHD) nearly three years after the storm?

2. Among United Methodist survivors of Hurricane Katrina in Mississippi, how important are positive and negative religious coping strategies as compared to general coping strategies in relation to MHD?

3. Among United Methodist survivors of Hurricane Katrina in Mississippi, what are the interrelationships between all demographic, religious, and religious coping variables in relation to MHD?

Definition of Terms

- **Religious Coping** – the religiously oriented strategies and activities used by a person that has experienced a traumatic event or significant life changing event to manage the stressors and adjustments caused by the event. In this study, religious coping was measured using the Brief Religious Coping Scale which distinguishes between positive and negative forms of coping (Pargament, 1997).

- **Positive Religious Coping** – religious coping that involves activities or strategies that are benevolent, collaborative, and supportive in nature (i.e., working with God to get through hard times, looking to God for strength, seeking support from other members of a religious congregation, and offering spiritual support to others) (see Table 3.1 and Appendix H) (Pargament, 1997).
• Negative Religious Coping – religious coping that involves activities or strategies that include religious pain, turmoil, or frustration (i.e., feeling the trauma is God’s way of punishing, questioning the existence of God, expressing anger toward God, and thinking about turning away from God or the religious congregation) (see Table 3.1 and Appendix H) (Pargament, 1997).

• General Coping – a broad spectrum of behavioral and cognitive strategies used to manage stress that may or may not include overtly religious forms of coping. In this study, general coping was measured by using the Brief Coping Orientation to Problems Experienced Scale which measures both positive and negative forms of general coping (Carver, 1997).

• Positive General Coping – generally positive forms of coping strategies that include behavioral and cognitive strategies such as actively seeking solutions, planning strategies to reduce stressors, reframing and accepting situations that cause stress, the use of humor as well as religion to manage stress, and seeking instrumental and emotional support from others (see Table 3.2 and Appendix I) (Carver, 1997).

• Negative General Coping – generally negative forms of coping strategies that include behavioral and cognitive strategies such as finding ways to distract attention, disengage, and deny issues associated with the stress as well as excessive use of venting of feelings, self-blame, and use of substances to manage the stress (see Table 3.2 and Appendix I) (Carver, 1997).

• Religiousness and Spirituality – two terms that may be used interchangeably to represent the quest for the sacred both individually and communally through
prescribed rituals, behaviors, beliefs, and philosophies. While these two terms may be defined separately, the effort to do so is the context of a different course of study and will not be distinguished in the present study (Zinnbauer & Pargament, 2002).

- Mental Health Distress – mental health outcomes utilized to manage the impact of disaster related stress (i.e., the severity of symptoms of anxiety and depression related disorders) (Ano & Vasconcelles, 2005; Rubonis & Bickman, 1991) (measured by the General Health Questionnaire – 12) (see Appendix G).

- Proximity – the level of exposure measured by geographic closeness to the damage of Hurricane Katrina based on county of residence. In this study, two time frames were utilized for measuring proximity. A person’s proximity to Hurricane Katrina at the time of landfall on August 29, 2005 was referred to as Proximity – Katrina. A person’s proximity to Hurricane Katrina at the time data was collected in June of 2008 was referred to as Proximity – Current (see Figure 3.1 and Appendix M – Questions 68 and 69).

- Subjective Loss – a person’s self-report of personal losses due to Hurricane Katrina was measured at two different times. The person’s perceived level of losses at the time of landfall of Hurricane Katrina on August 29, 2005 was referred to as Subjective Loss – Katrina while losses experienced at the time of data collection in June of 2008 was referred to as Subjective Loss – Current (see Appendix M – Questions 66 and 67).

- Religious Salience – a person’s self-report of how religious one believes him or herself to be (see Table 3.3) (Smith, Pargament, Brant, & Oliver, 2000)
• Religious Conservatism – a person’s level of religious values as measured by questions pertaining to the literal interpretation of the Bible and the applicability of the Bible to life’s problems (see Table 3.3).

• Religious Participation – a person’s frequency of involvement in religious activities such as worship service attendance, use of religious materials, and participation in prayer (see Table 3.3).

• Recovery Involvement – a person’s frequency of participation in disaster recovery activities associated with Hurricane Katrina in the year prior to the data collection of this survey (see Table 3.3 and Table 4.8).

• Previous Mental Health Treatment – a person’s report of participation in in-patient or out-patient mental health treatment prior to Hurricane Katrina (see Table 3.3)

• Ordination Status – the indication of whether or not a person is a United Methodist minister or minister of another Christian denomination ordained for the vocation of Christian ministry (see Table 3.3).
CHAPTER II
REVIEW OF THE LITERATURE

Major life events touch people spiritually as well as emotionally, socially, and physically. Crises can be viewed through a spiritual lens as threats, challenges, losses, or opportunities for the growth of whatever the individual may hold sacred. In coming to terms with trauma and tragedy, people can draw on a number of resources that have been prescribed by the religions of the world for thousands of years (Pargament, Ano, & Wachholtz, 2002, p. 479).

The current research specifically assess the role of religious coping in response to a large scale disaster and the outcome of mental health distress (MHD) experienced by United Methodist Church leaders including both clergy and laity throughout the state of Mississippi. Hurricane Katrina’s catastrophic impact upon Mississippi offers a unique environment to evaluate the role of religious coping among the survivors in the state. Often described as the heart of the “Bible Belt,” Mississippi is critically poised for the study of how religious people respond to the greatest natural disaster in U. S. history, even nearly three years into the recovery from that disaster. A research study measuring demographic characteristics, religious variables, coping strategies, and the outcome of the presence or absence of MHD among the church leaders of Mississippi, particularly members of the Mississippi Annual Conference of the United Methodist Church, will offer insight that is lacking in the literature pertaining to disaster recovery and religious coping. This literature review presents research that has been conducted that relates to the current study. Studies assessing the psychological impact of disaster are presented
followed by a review of studies measuring religious coping among disaster survivors. Research measuring the positive impact of religious coping is presented as well as the relationship between religious involvement and mental health. Finally, a discussion of the mediating roles of religious coping and recovery involvement in disaster are discussed.

**The Psychological Impact of Disasters**

Naturally, one might assume that large numbers of persons would exhibit major distress in the wake of a large scale natural disaster where entire communities were destroyed, hundreds of thousands of residents were displaced from their homes, and entire economic systems were disrupted for months or even years. Human resiliency offers protection against such distress, and surprisingly, it is much more prevalent than the major distress often expected following a devastating event such as a hurricane.

In a review of articles about human resilience in the face of loss and trauma, Bonanno (2004) argues that the vast majority of people experience only minor reactions to major traumatic events. Bonanno provides evidence that resiliency tends to be a distinctive reaction to loss and trauma, and that multiple mechanisms of resiliency exist. He argues that resiliency is an alternative reaction to trauma from that of recovery. Where recovery presumes loss of functioning in some fashion (i.e., development of pathological distress such as post-traumatic stress disorder), resiliency suggests a person experiences continued psychological and physical functioning (i.e. the absence of pathological levels of depression or anxiety) in the wake of trauma and loss. He points to an article (Ozer et al., 2003) that indicates that within the United States, 50% to 60% of
persons experience traumatic events, but only 5% to 10% actually develop post-traumatic stress disorder (PTSD). He cites other studies that demonstrate severely traumatic events often result in a higher prevalence of diagnoses of post-traumatic stress disorder (PTSD) (6.6% and 9.9%, 1992 Los Angeles riots, Hanson, Kilpatrick, Freedy, & Saunders, 1995; 12.5%, Gulf War veterans, Sutker, Davis, Uddo, & Ditta, 1995; 16.5%, hospitalized motor vehicle accident victims, Ehlers, Mayou, & Bryant, 1998; and 17.8%, victims of physical assault, Resnik, Kilpatrick, Dansky, Saunders, & Best, 1993). While these prevalence rates account for a large number of persons, the vast majority appear to have experienced an absence of pathological reactions.

Bonanno (2004) uses the terms resiliency and coping interchangeably, and he describes several forms of coping that may explain alternative paths following trauma and loss including hardiness, repressive coping styles, and positive emotion with laughter. He suggests more research needs to be conducted to better understand the multiple paths of resiliency, but he does not make any specific comments or recommendations regarding the role of religiousness or spirituality in coping. From the perspective that resiliency or coping is the prevalent response to traumatic events such as disaster, the literature lacks sufficient evidence that religious coping serves as an important mechanism in the human response to natural disaster.

Hurricane Katrina was the most significant natural disaster in United States history (Blake, Rappaport & Landsea, 2007). Apparently, resiliency has been the most prevalent response to that disaster. As noted earlier in Chapter 1, Kessler (2007) testified before the United States Senate in October of 2007 that in a follow-up survey one year after his initial post-disaster survey, the incidents of PTSD among persons outside New
Orleans nearly doubled to 20%, up from 12% at six months after the disaster. The levels within New Orleans remained relatively the same in the follow-up. As for suicidality at the initial and follow-up surveys, the incidents of suicidal ideation increased to 6.4%, and suicidal plans increased to 0.8% among persons in and outside of New Orleans, combined. Even with increasing rates of PTSD and suicidality approximately 18 months after the disaster, Bonanno’s question of the importance of resiliency still stands. Among the vast majority of persons that do not exhibit symptoms of psychopathology, what resources depict better coping or resiliency? At nearly three years after the disaster, how has religious coping served to insulate against MHD?

Researchers have reviewed various survivor related characteristics that appear to be related to varying levels of mental health distress. Variables such as age, proximity or exposure to the disaster, type of disaster, personal and financial loss associated with the disaster, pre-existing medical and mental health conditions, and time following the disaster have been studied as independent variables contributing to mental health related outcomes among disaster victims. These studies offer important insights regarding risk variables for psychological distress in the wake of a disaster. Canino, Milagros, Rubio-Stipec, & Woodbury, (1990) reported that following the 1985 Puerto Rico floods, with a sample of 912 participants, incidents of dysthymic, depressive, somatic, and alcohol dependency symptoms significantly increased for persons directly exposed to the disaster as compared to person that were not exposed to the disaster even after controlling for variables such as gender, age, education, and pre-disaster symptoms.

Assanangkornchai et al. (2004) reported a study conducted among persons that had suffered a flood in Hat Yai in November of 2000. In this report, 10 weeks following
the flood, 509 respondents completed a questionnaire that included the Thai version of the GHQ-12 used to measure MHD along with the Impact of Event Scale (IES) (Horowitz, Wilner, & Alvarez, 1979) which measures symptoms of post-traumatic stress. Demographic information and information about the exposure intensity (experiencing injury or illness, seeing dead people, loss of relatives, and perceived intensity of damage) and subjective responses to the flood were documented as well. The authors report that 40% of the respondents had GHQ-12 scores that indicated mental health problems. With a potential score of 45, the average IES score was 13.4. When comparing two groups, those with and without elevated GHQ-12 scores, the mean IES score was significantly different between groups. Compared to persons that did not have elevated scores on the GHQ-12, persons that perceived that they had severe losses were more than twice as likely (2.22 to 1) to have elevated scores on the GHQ-12. Also, persons with households of 3 to 6 persons and persons that were exposed to the sight of a dead person in the flooding were nearly twice as likely to have elevated scores on the GHQ-12 (ratios of 1.95 and 1.98 to 1, respectively). Opposite of what was expected, persons that were able to collect nearly all their possessions were twice as likely (2.14 to 1) to experience elevated scores of the GHQ-12 as compared to persons that lost everything.

Chung, Easthope, Chung, & Clarke-Carter, (2003) found that the type of disaster and the proximity to the disaster demonstrated a significant effect among persons that had suffered technological disasters. One hundred and forty-eight participants in this study were residents of two different communities in the United Kingdom, one in Willenhall, Covington where a Boeing 737 had crashed, killing all five members of the crew on board (there were no passengers) and barely avoiding hundreds of persons on the ground,
and the other in Rickerscote, Stafford, where a freight train carrying liquid carbon dioxide collided with a postal train killing all aboard the postal train and requiring an evacuation of the residential area surrounding the crash site. Participants completed a questionnaire that contained the Impact of Events Scale (IES; Horowitz, Wilner & Alvarez, 1979), the General Health Questionnaire – 28 (GHQ-28; Goldberg & Miller, 1979), and the Ways of Coping Checklist (WOC; Folkman and Lazarus, 1988). Because the primary purpose of the article was to determine the effects of age upon coping and reactions to different disasters, participants were categorized by age as young, 18 – 39; middle-aged, 40 to 64; and elderly, 65 and older. Through an analysis of variance, age categories did not demonstrate a significant difference in terms of coping strategies utilized or mental health reactions as measured by the IES or the GHQ-28. On the other hand, residents that experienced the aircraft accident demonstrated higher levels of distress as measured by the GHQ-28, higher levels of PTSD symptoms as measured by the IES, and numerous coping strategies as measured by the WOC. Also, residents that reported high intensity exposure to the two disasters reported significantly higher levels of all three measures (GHQ-28 and numerous coping strategies).

Lewin, Carr, and Webster (1998) conducted a study of earthquake victims longitudinally. Their surveys included measures for mental health distress, symptoms of post-traumatic stress, personality traits, types of coping strategies, and mental health diagnosis history. Of the 845 participants in the study, 66.8% were classified as low morbidity, indicating that they were not exhibiting significant symptoms of mental health distress and post-traumatic stress symptoms. Persons that exhibited high morbidity but recovered within 12 months made up 18.8% while the remaining 14.4% exhibited high
levels of morbidity over two years after the disaster. In this study, values for statistical comparisons were not reported, but the authors indicated that persons that demonstrated higher levels of distress and post-traumatic stress symptoms over a period of 114 weeks after the disaster tended to be older, have a history of psycho-pharmaceutical treatment six months prior to the earthquake, and utilize avoidant types of coping strategies.

In a study following the Exxon Valdez oil spill in Prince William Sound near Cordova, Alaska, in March of 1989, Arata, Picou, Johnson, and McNally (2000) report the results of 125 fishermen that completed a survey six and one-half years after the disaster. This survey measured symptoms of anxiety, depression, and post-traumatic stress disorder (PTSD) along with demographic variables, coping strategies, and the personal and financial losses experienced by the participants. Among the men surveyed, prevalence of depression, anxiety, and PTSD was 39%, 23%, and 34%, respectively. For women, the prevalence was 20%, 13%, and 40%. Of the demographic variables, years of education was the only characteristic of the fishermen that was correlated with depression. Using multivariate analysis with each of the mental health variables measured (depression, anxiety, PTSD) as dependent variables and resource loss variables mixed with coping variables hierarchically inputted, passive coping contributed the most to the overall variance for depression and PTSD and served as a significant variable in the analysis of anxiety.

While so many variables have been studied to explain causes of distress among survivors of disasters, much less attention has been paid to the mechanisms of resiliency such as religious coping. This study seeks to focus upon the more prevalent reaction to disaster to determine what forms of coping relate to the lower likelihood of MHD.
Among the many mechanisms that may be available, religious coping could be a distinctive expression of those with religious and spiritual beliefs and practices.

**Religious Coping among Disaster Survivors**

As a specific expression of religiousness and spirituality, religious coping functions as a potential response to life changes that is uniquely characteristic of religious persons (Pargament, 1997). As such, any analysis of resiliency in the wake of a major natural disaster should consider the impact of religiousness and spirituality in the myriad of reactions exhibited by the survivors, especially among person living in a state where religion serves as a profoundly important aspect of the social fabric. In terms of how religious coping serves as a response to life changing events, Pargament et al. (1990) describe a framework of coping from the precipitating event to the outcomes of coping. First, life situations present themselves in a variety of forms, either positive or negative, causing some kind of change. Second, an individual appraises that situation by determining the cause and then primarily evaluating its impact and then secondarily measuring his or her ability to handle the situation. Finally, various coping activities may be employed bringing about multidimensional outcomes including, but not limited to, psychological reactions. Coping itself is determined by a variety of influences including competence, personality, beliefs, financial resources, physical wellbeing, and social network.

In their review of research pertaining to religious coping, Pargament et al. (2002) emphasize that religious coping can be understood as much more comprehensive than simply a method of reducing anxiety, promoting denial, or functioning as a passive
system of beliefs. Whereas many of the variables for religiousness and spirituality measured in research presented above measures the “how much” of religion, these authors suggest the religious coping should be measured by asking “how.” For instance, religious coping combines several components including interaction with others (i.e., pastors, congregations, and God) and use of various behaviors (i.e., prayer, worship, religious study) during times of distress (acute and chronic). It occurs both as a private function as well in the context of a congregation, and it is used to accomplish various outcomes including to find meaning as well as to gain control. Understandably, mental health outcomes associated with religiousness and spirituality variables may demonstrate positive as well as negative outcomes (Pargament, 1997; Pargament et al., 1998; Pargament et al., 2002).

Ano and Vasconcelles (2005) conducted a meta-analysis of 49 studies measuring the impact of religious coping upon psychological adjustment and concluded that religious coping serves an important role in psychological outcomes. Many of these studies measured religious coping from a dispositional perspective as participants were asked to reflect upon their method of religious coping in general. Several other studies focused upon stress in general over a period of time, often 2 years. Specifically, 16 of the studies focused upon health conditions, caregivers (professional and family members), or death of a friend or loved one as the specific stressor. Only two of the studies focused upon a specific disaster, one natural (Smith, Pargament, Brant, & Oliver, 2000) and the other human made (Ai et al., 2003).

In the Smith et al. (2000) article, the authors conducted a study among victims of the 1993 widespread flooding in the Midwestern United States six weeks and then four
months after the flooding. With a sample of 131 participants that completed questionnaires on both occasions, the authors measured various variables for religious dispositions, attributes, and coping. Additionally, psychological (GHQ-12) and religious outcomes were measured. Level of exposure to the flood and demographic variables were also measured. Religious salience, a person’s self-report of how religious one believes him or herself to be, was significantly correlated with positive psychological outcomes at six weeks, but it was not significant at four months. Several of the Religious Attributes and Religious Coping Activities were significant at both administrations of the surveys. For instance, God’s Love or Reward was positively correlated with positive psychological outcomes at 6 weeks and 4 months. Religious Discontent was negatively correlated with positive psychological outcomes at 6 weeks, but it was not significant at four months. Good Deeds, Religious Focus, and Spiritually Based were all significant at six weeks, but only Good Deeds was significant while Religious Focus was moderately significant at four months. In the regression analysis, the combination of all religious variables significantly predicted both psychological and religious outcomes at both time periods.

Ai et al. (2003) report a link between religious coping and measures of optimism and hope among Muslim refugees from Bosnia and Kosovo. Using path analysis with a sample of 138 participants, the authors report that positive religious coping served as a mediator between religiousness and optimism where religiousness was directly associated with positive religious coping and positive religious coping was directly associated with optimism. Negative religious coping was directly associated with lower levels of hope, and negative religious coping mediated between trauma scores and hope. Therefore,
negative religious coping tended to decrease the amount of hope a refugee experienced while positive religious coping contributed to higher levels of optimism.

In the meta analysis of 49 studies described above, Ano and Vasconcelles (2005) evaluated the relationship between situation specific religious coping, specifically positive and negative religious coping, and various measures of psychological adjustment to stress. Additionally, these 49 studies utilized bivariate correlational analysis thereby excluding other studies that used other forms of statistical analysis and allowing a uniform comparison of the group of studies. The total sample size of the combined 49 studies was 13,512. After analyzing the total group, positive religious coping was moderately correlated with positive psychological adjustment. With 38 studies, positive religious coping was moderately and inversely correlated with negative psychological adjustment. As for negative religious coping, the authors found that it was not associated with positive psychological outcomes with 16 studies analyzed, but it was modestly correlated with negative psychological outcomes with 22 studies.

In their article presenting the psychometric proprieties of the Brief Religious Coping Scale (Brief COPE), Pargament et al. (1998) demonstrated that positive and negative religious coping strategies tend not to be correlated or only moderately correlated suggesting that they both represent distinctive styles of religious coping. Additionally, both types of religious coping correlate with various other measures of mental health and religious outcomes. For instance, in their analysis of 296 church members from Oklahoma City, Oklahoma, following the 1993 bombing of the Alfred P. Murrah Federal Building demonstrated the correlation between positive and negative religious coping was not significant, but positive religious coping was significantly
correlated with PTSD, stress-related growth, and religious outcomes. Negative religious coping, on the other hand was significantly correlated with PTSD, callousness, and stress-related growth. Among 540 college students in Oklahoma City at the same time, positive and negative religious coping were slightly correlated, and positive religious coping was again correlated with stress-related growth and religious outcomes. Negative religious growth was somewhat related to emotional distress, stress-related growth, decreased physical health, and higher scores on the General Health Questionnaire. Apparently, religious coping, in both forms, appears to play a role between precipitating events, such as a disaster, and various outcomes including mental health variables.

**Positive Impact of Religious Coping**

In the infancy of psychiatry and psychology, influential explorers of the field such as Freud chose what was believed to be a more analytical perspective of mental health. The role of religion in relation to mental health was promulgated as a neurotic worldview of antiquity (Andreasen, 1972). As Pargament et al. (2002) explain, Freud argued that “religion is rooted in the child’s sense of helplessness in the face of a world filled with dangerous and uncontrollable forces” (p. 480). If it was not altogether ignored, religion was at least believed to be a dysfunctional practice viewed to be antithetical to scientific inquiry of the human psyche.

But times have changed. From the perspective of one who may be religious, the distinction between mental health and religiousness or spirituality may not be readily bifurcated. One may perceive him or her self profoundly guilty and saddened for sins committed or believed to be committed. As such, religious practice may be viewed as a
potential aid in relieving the depressive symptoms through forgiveness and liberation while also serving as the cause of the depressive symptoms as a result of a system of criticism and judgment (Andreasen, 1972). Mental health practitioners have demonstrated an increasing interest in the relationship between religiousness and spirituality with variables of distress and mental health adjustment (Zinnbauer, et al., 1997; Hill, et al., 2000; Paloutzian & Park, 2005). With a growing amount of empirical evidence, researchers are realizing that religiousness and spirituality have something to offer for improving and sustaining medical and mental health (Ano & Vasconcelles, 2005; Pargament, 1997; Powell, Shahabi, & Thoresen, 2003).

Religiousness and spirituality have been measured in numerous ways including attendance at religious ceremonies, frequency of religious behaviors, and affiliation in religious groups. Many researchers have settled with using these simplistic measures to isolate the relationship between religion and mental health outcomes, and the results are encouraging and important for evaluating specific aspects of how religiousness and spirituality contribute to wellbeing. For instance, McCullough, Hoyt, Larson, Koenig, & Thoresen, (2000) conducted a meta analysis of the impact of religious involvement and mortality. With a total of 42 studies accumulating 125,826 participants, the authors report that religious involvement contributes to lower levels of mortality. They indicate that the effect size was small but sufficient to conclude that persons that scored higher on the religious involvement scales were 29% more likely to live longer than those that scored lower. The authors also acknowledge concern that 23 of the 42 studies utilized very rudimentary religious involvement measures such as religious attendance or subjective measures of religiosity. More sophisticated and specific measures of
religiousness and spirituality may better explain the role of religion in outcomes of health and mental health.

Religious involvement may lead to more concrete forms of social support, religious salience, and religious behavior that more directly affect mental health outcomes. In a study measuring the link between religious involvement and social ties, Ellison and George (1994) report that more frequent participation in religious events, especially among conservative Protestants, leads to larger networks of non-kin relationships, greater levels of contact with others both in-person as well as by telephone, enjoy greater levels of instrumental support and socio-emotional support, and report greater levels of subjective feelings of support from others (the authors indicate that with each increased step of religious attendance, a 17% increase in the score for subjective feelings of social support increase, no scores were reported).

Ellison and Levin (1998) reviewed articles pertaining to the role of religion in promoting health, and in their review of articles regarding religions influence on mental health, they report that religious involvement appears to enhance mental health outcomes by reducing risk for stress and encouraging closer family and social ties. They point out that religious involvement promotes lifestyle norms (i.e., abstinence from tobacco or alcohol use, avoidance of deviant behaviors, etc.) by which members of religious groups feel compelled to uphold; these lifestyle behaviors coincide with improved health and mental health.

Religious salience or the strength of a person’s religiousness or spirituality seems to be an important variable associated with mental health outcomes. Ross (1990) conducted a study comparing levels of distress among adults reporting varying levels of
religious involvement including persons describing themselves as having no religion. This study included 401 respondents that were contacted through a telephone survey using random digit-dialing in the Chicago area. Psychological distress was measured using eight items assessing symptoms of anxiety and depressions over the previous 12 months. Demographic variables were measured including gender, race, education, age, and marital status. In addition to denominational affiliation, various religious variables were measured with items seeking subjective responses to religion oriented questions. For example, “strength of religious belief” was measured by asking the respondent the question, “Would you call yourself a strong, somewhat strong, or not very strong United Methodist?” (Ross, p. 239). Also, two aspects of religious belief were measured by a series of questions that measured personal efficacy and trust in God. The results of this study demonstrated that strong religious belief and no religious belief both proved to be associated with lower levels of mental health distress. Weak and moderate levels of religious belief were connected to higher levels of distress. Personal efficacy and education seemed to be related in the analysis of mental health distress. Also, income levels tended to contribute to lower levels of mental health distress.

Fitchett, Rybarczyk, DeMarco, and Nicholas (1999) conducted a study of 114 medical rehabilitation patients admitted to a rehabilitation hospital. Interviews were conducted when the patients were admitted, prior to discharge, and through a follow-up phone interview four months after discharge. Data was collected through interviews, surveys, and chart reviews. Religiosity was measured both publicly (attendance and familiarity with other worshipers) and privately (self-report religiosity and subjective strength and comfort obtained from religion). The Brief Religious Coping Scale
(Pargament, 1998) was used to measure positive and negative religious coping. Several other scales were used to measure health and mental health including an 11-item scale for measuring depression and a five-item scale for measuring adjustment. The results of this study demonstrated correlations between the variables for religiosity and positive religious coping with variables for recovery and lower levels of depression, but when the authors entered the variables into a regression analysis, none of the religious variables, including the coping variables, were significant in relation to depression or the health variables.

Schnittker (2001) conducted an analysis of variables collected in a national longitudinal survey that was conducted on two occasions, 1986 and 1989. With 2,836 respondents that completed measured variables on both administrations of the survey, Schnittker analyzed variables for religious involvement (i.e., service attendance, religious salience, and religious help-seeking) and depression and found mixed results. After controlling for demographic variables such as age, gender, race, income, education, and marital status as well as controlling for stress buffering measures such as positive and negative social support, functional health status, and social integration, the author reports that depression was not significantly impacted by service attendance. In the same analysis, he reports that religious help-seeking was significant for reducing symptoms of depression. Also, he reports finding a significant U-shaped curve regarding religious salience which was measured by the question, “In general, how important are religious or spiritual beliefs in your day-to-day life?” (p. 399). This U-shape indicates that persons with very low and very high levels of religious salience reported higher levels of depression than those that reported moderate levels of religious salience.
Persons that utilize religious coping do so out of their personal connection with faith, God, and/or sense of the sacred (Pargament, 1997; Pargament et al., 1998). While various studies demonstrate that religious participation and self-rated scores of religiousness seem to be related to positive outcomes, religious forms of coping, both positive and negative, may be instrumentally involved. This current study will measure simplistic variables of religiousness and spirituality such as church attendance, frequency of religious behaviors, and religious beliefs, much like previous studies noted above. At the same time, positive and negative religious coping, will be measured to determine which variables have the greatest impact upon MHD. Previous research has not demonstrated how these different variables interact. For instance, does a frequent worship service attendee tend to use more negative or positive religious coping strategies? Does use of frequent religious behaviors encourage or discourage either of the two different types of religious coping? It would seem that religious coping could serve as a mediating variable between the simplistic variables and a measure for MHD.

In addition to the religious variables, other characteristics of survivors may influence the choice of using positive or negative religious coping strategies. For instance, Osborne and Vandenberg (2003) found that Catholics were more likely to utilize pleading with God and to experience feeling of discontent than Disciples of Christ women. In the same study, participants indicated that they would choose different coping strategies for different stressors (i.e., the death of a loved one versus a job promotion versus experiencing a storm while in a sailboat). Ai et al., (2003) report that adult Muslim Refugees from Kosovo and Bosnia demonstrated a tendency to utilize negative religious coping and were inversely related to hope when scoring higher on measures of
the level of trauma. For persons that reported higher levels of religiousness and education, positive religious coping was higher and led to optimism. Koenig et al. (1992) interviewed 850 men aged 65 and older that had been admitted to a Veterans Administration hospital and had no current mental health diagnosis. The surveys asked participants questions regarding their religious affiliation, religious coping strategies, self and observer rated depression, and demographic variables. In the authors’ first analysis, religious coping was identified as the dependent variable in a hierarchical stepwise regression model with all other variables added stepwise and removing insignificant variables at each step. Variables for religious affiliation proved to be the most significant predictors of religious coping, particularly Protestants from conservative, black, or fundamentalist traditions. Also, men that were older, black, had a history of psychiatric problems, and had greater social support were more likely to utilize religious coping. Alcohol use proved to be negatively predictive of religious coping. In their second analysis, the authors measured the correlation between symptoms of depression and religious coping. Both self-reported and observer rated symptoms were significantly positively correlated with religious coping.

It seems that simply conducting studies that statistically measure the relationships between certain religious or demographic variables and mental health related outcomes fails to explain the complexity of Pargament’s definition of religious coping. If coping is the response of religious persons to life changing events, and those religious coping strategies seem to promote improved mental health outcomes, how does religious coping interplay between the religious and demographic variables and the outcomes?
Research methods can be fashioned to evaluate the interplay between these variables. Fabricatore, Handal, Rubio, & Gilner (2004) utilized structural equation modeling to determine the mediating and moderating roles of religious coping among 175 college undergraduates. They concluded that “religiousness would be indirectly related – through collaborative religious coping – to favorable mental health outcomes in the presence of stressors.” (p. 103). In this study, they utilized Pargament’s et al (1988) Religious Problem-Solving Scales which is an early version of the Brief Religious Coping Scale (Pargament et al., 1998). The authors also measured satisfaction with life, positive and negative affect, and MHD. MHD was measured using the General Health Questionnaire – 30 (GHQ-30; Goldberg, 1972). In a model assessing the role of collaborative religious coping, the authors report that it significantly mediated between measures of religiousness and distress. Additionally, the model showed that collaborative religious coping mediated between religiousness and well-being. The authors report there was not interaction between stressors and collaborative religious coping in affecting the mental health outcomes. In a model assessing the role of deferring religious coping, stressors were significantly related to distress but not well-being. Deferring religious coping was significantly related to both distress and well-being. When stressors and deferring religious coping were interacting together, they were significant for only well-being. The authors concluded based upon these models that collaborative religious coping (which they describe as active coping) did not function as a moderator with stress (stress X collaborative religious coping, it did not reduce the stress) for affecting mental health outcomes, but it did mediate between religiousness and the outcome measures. As for deferring religious coping (which the authors describe as
passive), it did moderate with stress (stress X passive religious coping) to affect mental health outcomes, but it only exacerbated (decreased) well-being as a mediator between stress and well-being.

**Religious Involvement and Mental Health**

Given that religious coping may serve an important function in encouraging variables of resiliency (outcomes of well-being, optimism, and mental health distress) among hurricane victims, it may be reasonable to clarify the differences between religious coping and methods of coping that are not specific expressions of religious or spiritual perspectives. Research has demonstrated that religious coping contributes above and beyond non-religious measures, and therefore it may be important to control for non-religious methods of coping. Pargament et al. (1990) conducted a study of 586 church members who indicated they utilized religion as part of their dealing with the most significant life event over the year prior to the survey. Participants were given a survey that included items measuring religious and nonreligious coping strategies as well as the appraisal of a significant life event. Outcome measures were conducted including an instrument for mental health status as measured by the General Health Questionnaire (GHQ-12; Goldberg, 1972, 1991). With the GHQ-12 serving as the dependent variable, religious and non-religious variables were inputted into multiple regression analysis, and the both types of variables contributed to the variance of GHQ-12 scores. For instance non-religious appraisals and coping activities were moderately significant in predicting the GHQ-12 scores after controlling for demographic variables. Likewise, after controlling for demographic variables and religious predisposition, religious coping
variables added to the predictability of the variables. When incrementally inputting the
demographic variables, the non-religious coping variables, and the religious coping
variables into the equation, the religious coping variables significantly added to the
equation even after the variance for the non-religious variables was calculated. Finally,
variables for non-religious coping were highly correlated with variables for religious
coping. For example, spiritually based coping was correlated with non-religious
variables for focus on the positive, problem solving, and general support and religious
support was correlated with non-religious variables for focus on the positive and general
support and avoidance.

In another study, Pargament et al. (1994) sought to determine distinctive
difference between religious and non-religious coping methods among psychology
students (N=214) at the time of and immediately following the Gulf War associated with
Iraq’s invasion of Kuwait in 1991. The authors utilized an early version of the Religious
Coping Scale (RCOSE) (Pargament, Koenig, & Perez, 2000) along side a 32-item coping
scale (Moos, Connkite, Billings, & Finney, 1983) that preceded Carver’s (1989) coping
scale. The authors also measured the student’s affective reactions to the Gulf War as well
as their level of MHD as measured by the GHQ-12 (Goldberg, 1972, 1991). Surveys
were administered on two occasions, one just as the United States initiated attacks on Iraq
in January of 1991, and the second just after hostilities ceased and the United States
declared victory just weeks later.

In the results of the first series of surveys, the authors report that after controlling
for demographic variables, both the religious and non-religious scales contributed unique
variance, even when controlling for the competing type of coping strategies, when
predicting positive and negative affect. Only the religious coping scores predicted the GHQ-12 scores at a significant level after controlling for non-religious coping.

When controlling for the variables in the first evaluation, the authors sought to determine the variance contributed by the two different types of coping in predicting the change in the outcome scores after the second round of surveys. This analysis was used to determine the role of religious and non-religious coping over time. Religious coping was slightly responsible for predicting positive affect and GHQ-12 scores while non-religious coping showed a slightly significant level of variance for predicting GHQ-12 scores, only. The authors did not report an analysis of variance when controlling for the opposite coping strategy on the second set of variables.

Religious and non-religious coping scores were correlated (r = .32), particularly in the area of active coping. In this study, sub scales of religious and non-religious coping variables were evaluated to distinguish between different sub-types of coping. Because there were strong correlations between several religious sub-types and active-behavioral coping (a sub-type of non-religious coping), Pargament et al. (1994) argued that religious coping may be strongly associated with active coping strategies rather than more passive strategies as had been argued in earlier studies. At the same time, the above results suggest that religious coping may have its own value separate from non-religious coping strategies, particularly when it pertains to MHD.

Apparently, religious coping strategies offer unique contributes to coping over and beyond non-religious coping, but no studies have evaluated the distinctive impact of religious coping following a significant natural disaster, particularly after nearly three
years of recovery. It would be interesting to know if religious coping sustains for such a long period of time.

In teasing apart the multiplicity of influences on mental health, it quickly becomes clear that a consistent, robust, and unidirectional relationship between mental health and religiosity or spirituality is an illusion – the reality is far more subtle and complex (Miller & Kelley, 2005, p. 462).

One possible explanation for the mixed results found in studies evaluating the link between faith and mental health may be associated with the measures used to assess faith. In a study by Pressman, Lyons, Larson, and Strain (1990), 30 women who had sustained and were being treated for broken hips were surveyed to study the link between religious belief and depression. In this study religious belief was measured by asking the participants about religious service attendance, self-perceived level of religiousness, and degree to which they believe God provides them strength. While the religiousness scores did not significantly predict depression scores for the women at intake, it did significantly predict scores at discharge, even after controlling for severity of their condition in a hierarchical regression analysis.

In a study including 832 older medical inpatients, Koenig, et al. (1995) found that higher scores of religious coping were associated with cognitive symptoms of depression but not related to somatic symptoms of depression. The authors argued that the distinction between cognitive and somatic symptoms may be an important variable when evaluating older adults and may explain some variability in previous studies assessing the link between faith and mental health.

Research has demonstrated a relationship between faith and mental health well being, but the conclusions have been mixed. Some studies demonstrate a positive link
while others suggest that faith may play a negative role in promoting mental health wellbeing. Miller and Kelley (2005) emphasize that measures of religious attendance or religious values tend to fail to recognize the life-spanning and cultural influences that religion plays for persons; therefore, measures of religiousness that capture only perfunctory or one-dimensional characteristics of faith fail to capture the essence of the influence of spirituality or religiousness. They emphasize that religiousness over the lifespan, including childhood, adolescence, and adulthood, should be considered when evaluating mental health outcomes. Additionally, researchers must not over-generalize findings as religiousness varies over context and culture. What may be found among one religious group, Muslims, may be different among another such as Christians. Likewise, ethnic or national difference may influence outcomes in addition to religious variables.

Attendance and Involvement Variables

Thoresen and Harris (2002) suggest that the collection of research relating health and religiousness has primarily focused upon religious affiliation and attendance variables. Research has utilized measures for denominational membership and religious service attendance with only occasional inclusion of variables that measure subjective valuations of religious beliefs. These authors also identify the tendency of these studies to fail to utilize controls for competing variables that tend to influence health outcomes.

In their analysis of research regarding the relationship between religious variables and health outcomes, George et al. (2002) point out that links between religious participation and health outcomes should be better understood. Because many recent articles include controls for confounding variables, they specify a need for research that
measures influences upon health while controlling for demographic variables, socioeconomic status, and social stress.

These three authors offer their insight regarding different mechanisms by which religious participation interacts with health. First, they suggest that more healthy lifestyles are often promoted or required of religious members. This specific mechanism focuses upon behaviors that impact physical health such as abstinence from smoking, drinking, and pre-marital sex as well as promoting certain diets and family interaction. Another important mechanism identified by George et al. (2002) is social support. This includes four variables most often studied: a. the size of the social network which helps to measure the availability of social support to a person through sheer numbers of persons in the organization, b. social interaction which measures the level to which a person utilizes the social network, c. instrumental assistance which measures the level of support provided to the individual by persons in the social network, and d. the person’s level of satisfaction with the social network. A third mechanism offered by George et al., sense of coherence or meaning, which they suggest helps a person define his or her world view as well as explains a person’s intrinsic or extrinsic motivation. The fourth mechanism, psychosocial resources, defined by George et al. relates to self-esteem, self-efficacy, and mastery which the authors believe may demonstrate a mediating role between religious participation and health outcomes.

In an example of research accounting for some of features of religious involvement, Koenig et al. (1998) reported mixed results in an evaluation of the relationship between remission of depression and various religious variables. Inpatient participants age 60 and older that were diagnosed with depression were monitored with a
12-week interval follow-up phone interview were measured for physical health, mental health status, and various religious variables including intrinsic religiosity as measured by a 10-items about religious belief and experience, religious activities such as prayer or medication separate from organized religious events, and activities related to participation in organized religion such as church attendance and denominational affiliation. Remission of depression was measured through the follow-up interviews, and just over half of the patients experienced remission of depression with an average time of remission of 30 weeks after their initial evaluation. Intrinsic religiosity was significantly correlated with remission of depression. The other two variables, religious attendance and religious affiliation, were not significantly correlated to time of remission.

Pargament (1997) argues that religious coping serves at the intersection between religious lifestyles and life stressors. While research has attempted to evaluate this concept, identifying the nuances of religious involvement such as attendance, social support, intrinsic and extrinsic values, and other variables continues to be unclear. This leaves the question of how does religious participation affect health.

**Evaluating the Mediating Role of Religious Coping and Recovery Involvement**

The complexity of the relationship between variables of religiousness and spirituality may be partially explained by the mediating role of positive and negative religious coping. For instance, among persons bereaving the loss of a family member, higher levels of stress contributed to more religious support which in turn provided better adjustment (Maton, 1989). Park and Cohen (1993) demonstrated the complexity of the role of religious coping by showing that orthodoxy positively correlated with religious
spiritual support (a positive religious coping variable) which in turn reduced levels of event-related distress. As for negative religious coping, months since the death of the loved one was mediated by religious pleading which led to increased levels of distress. Additionally, recovery involvement may prove to be an important mediator since church leaders in Mississippi have been actively involved both as volunteers and as extensions of professional roles in recovery efforts (Personal Interview with Steve Casteel, Director of Connectional Ministries, Mississippi Annual Conference, April 18, 2008).

Numerous studies have utilized path analysis to evaluate the complexity of various religious variables that give the current study some guidance. Nooney and Woodrum (2002) provided a study utilizing path analysis to explain the relationship between religiousness and spirituality and depression. With a national probability sample of 337 respondents, measures of religious activity, religious coping, and depression were taken. While church attendance and prayer did not independently relate to depression, they both indirectly related to depression through measures of religious coping. In both cases, when accounting for the mediating role of religious coping, depression demonstrated an inverse association. Additionally, attendance was also mediated by church-based social support in an inverse relationship. Fundamentalism demonstrated a direct, positive relationship to depression. Fundamentalism, attendance, and prayer were all three significantly correlated with one another. Maltby and Day (2003) identified through path analysis that positive religious coping contributed to the assessing stressors as challenges (rather than threats or losses) which related to psychological wellbeing. Along the same lines this same study evaluated the role of religious orientation and found that an extrinsic religious orientation, one in which a person uses religion as a form of
personal protection or social connection, decreased scores of psychological well-being by contributing to threat and loss perceptions of the stressor. Intrinsic religious orientations, characterized by persons that internalize their religious beliefs, contributed to an increase in well-being by reducing threat and loss appraisals. Ai et al. (2003) conducted a study with a group of Muslim refugees from Kosovo and Bosnia. Like the previous study, various variables in addition to religious coping impacted measured outcomes (hope and optimism). The outcome measures were correlated, but they were predicted by different paths in the study. In particular, religiousness and education were positively associated with optimism through positive religious coping, and both religiousness and education were predicted by gender, positively and negatively, respectfully. Education level was directly and positively associated with hope. Trauma score was inversely associated with hope when mediated through negative religious coping.

Coinciding with Pargament’s (1997) analysis of the religious coping, these studies further demonstrate the complexity of the association between religiousness and spirituality variables with variables of adjustment and mental health. Outcomes are affected by religious coping in conjunction with cognitive and behavioral attributes, demographics, and other religious variables.

Considering the available research on the subject of religious coping in times of natural disaster, much can be learned about the differences between positive and negative religious coping, how religious coping differs from general coping, and what demographic and religious variables seem to be interrelated with religious coping variables. In the case of Hurricane Katrina nearly three years after landfall, these variables may look very different. Much of the research already discussed presents
findings associated with events that were geographically contained within a small area unlike Hurricane Katrina which affected nearly the entire state of Mississippi. Also, research presented thus far predominately measures persons from the perspective the participants in the study are simply the victims of the disaster. Because Katrina had such a widespread impact upon the state of Mississippi, and because this study will occur nearly three years after the study, many of the variables previously studied may look very different as a result of the passage of time. Because this study will be assessing the role of persons intimately involved in the leadership of the United Methodist Church, the role of participants’ involvement in recovery efforts as a professional and voluntary expression of religious involvement may be a new variable to consider. The interrelationship of recovery involvement among church leaders and mental health distress is an important concern expressed by persons responsible for managing human resources in the Mississippi Conference of the United Methodist Church due to the prolonged recovery process occurring in Mississippi and the churches intimate involvement in the effort to overcome the impact of the disaster. (Personal Interview with Steve Casteel, Director of Connectional Ministries, Mississippi Annual Conference, April 18, 2008).

Therefore, the purpose of the current study was to utilized regression and path analysis (Wright, 1921; Hair et al., 1998) to evaluate the relationships among demographic variables such as age, gender, proximity to Hurricane Katrina, religious participation, religious salience, religious conservatism, and religious and general forms of coping as they influence mental health distress among survivors of Hurricane Katrina. Specifically this study considered the levels of mental health distress among clergy and
lay leaders of the United Methodist Church in the state of Mississippi during and after Hurricane Katrina.
CHAPTER III
METHODOLOGY

Research Design

This study utilized regression analysis and path analysis (Wright, 1921; Hair et al., 1998) to determine the impact of demographic, religious, and coping variables upon mental health distress (MHD) as measured by the General Health Questionnaire – 12 (GHQ-12) (Goldberg, 1972; Goldberg & Williams, 1991). The demographic variables measured age, gender, education, race, subjective loss at the time of Hurricane Katrina as well as at the time of data collection, proximity to the disaster at the time of Hurricane Katrina as well as at the time of data collection, recovery involvement, and previous mental health treatment. Religious variables included religious participation, religious salience, level of religious conservatism, and ordination status. Coping variables included positive religious coping and negative religious coping (Pargament, 1997; Pargament et al., 1998) as well as positive and negative forms of general coping (Carver, Scheier, & Weintraub, 1989; Carver, 1997).

Three research questions were asked in the study. For the first research question, regression analysis identified the most important variables among the demographic and religious variables for determining MHD by inputting all the demographic and religious variables into the model. For the second research question, an evaluation of the
importance of religious coping variables over and above the general coping strategies upon MHD was made using regression analysis. The final research question was answered using path analysis which identifies the direct effects of predictor variables upon MHD; but unlike regression analysis, path analysis can identify indirect relationships between the predictor variables that may clarify the presence or lack of direct relationships with MHD (Ahn, 2002). Therefore, path analysis was used to evaluate any interrelationship between the relevant demographic and religious variables and the positive and negative religious coping variables as they influence MHD. Because the focus of this study was upon the role of religious coping variables, the general coping strategies as measured by Carver’s (1997) Brief COPE were not included in the path analysis.

Participants

Participants in this study included clergy and church leaders within the United Methodist Church in attendance at the Mississippi Annual Conference of the United Methodist Church held between June 8 and 10, 2008, in Jackson, Mississippi. Approximately 2,500 persons attended this conference, and they ranged in age from less than 18 years old to over 80 years old. All participants were residents of the state of Mississippi both at the time of Hurricane Katrina’s landfall and at the time of completing the survey.

A total of 349 surveys were completed of which 273 were paper and pencil and 76 were computer entry formats. Due to a problem with the formatting of the computer based survey which resulted in the failure to obtain responses to numerous items
associated with the dependent variable, the computer entry survey results were excluded from the study. Of the remaining 273 paper and pencil surveys, 20 were dropped from the study due to significant missing data, particularly regarding missing variables associated with the dependent variable as well as some of the measures for coping. This left a total of 253 surveys that were used in the study.

The 253 participants reported an average age of 53.5 years with a range of 19 to 86 years. The participants included 52% males and 81% Caucasians with all the rest reporting to be African-American with the exception of 2 participants either reporting mixed race or Hispanic. Race was treated as dichotomous with Caucasian and non-Caucasian. Among the participants, 30 (12%) reported having received inpatient or outpatient mental health treatment prior to Hurricane Katrina. Due to the fact that obtaining a Master of Divinity is a common requirement for becoming ordained in the United Methodist Church, the sample represented a high level of education with 50.6 reporting to have received a Masters Degree. Another 20.9% reported receiving a Bachelor’s Degree as the highest level of education. A total of 101 (40%) of the participants reported being ordained ministers.

**Procedures**

A display booth was erected alongside other display booths just outside the main plenary session of the Mississippi Annual Conference of the United Methodist Church. Participants were invited to complete the surveys at the booth. Quarter-page size flyers were distributed throughout the conference announcing the survey and an incentive drawing for participants (See Appendix A). Permission to conduct this research was
provided by both the Mississippi Annual Conference of the United Methodist Church (see Appendix B) and the Mississippi State University Institutional Review Board (see Appendix C).

Prior to taking the survey, each participant was provided a consent form (see Appendix D) that explained the purpose of the research, an explanation that no known risks were associated with participating in the research, and assurance that participant names and identifiers would not be collected or connected to their responses. The consent form also explained that participants could discontinue the survey at any point with no negative consequences for doing so, and they could choose to skip any question on the survey. The consent form provided contact information for both the researcher and the dissertation chair in the event participants had questions or wished to report any problems associated with taking the survey and participating in the research.

Only participants age 18 and older were permitted to participate in the survey, and the survey was conducted using both online and paper and pencil formats. Participants were provided the option of taking either format. Participants that chose the online format were provided a laptop computer with internet connection to complete the survey. The computer was running with the survey instrument set at the start page ready to receive input. Persons that chose the paper and pencil survey were provided a paper copy of the survey. Both formats started with an instruction page with a reminder that questions may be skipped and participants may discontinue at any time (See Appendix E). Both formats were intended to be identical in terms of item format and instructions for providing responses, but a formatting error in the online version resulted in
differences in the questions for the dependent variable measuring MHD. As noted above, this error resulted in all of the 74 surveys being dropped from this current research.

After a participant finished the survey, she or he was provided an opportunity to complete an entry form for the drawing for which the participant did not have to be present to win (See Appendix F). This drawing was for a $100 Cokesbury Book Store Gift Card. The name on the first entry form drawn at the end of the conference on the 10th of June was contacted by phone. An additional item, a print of a H. C. Porter painting, was donated to be given away in the drawing. A second entry form was drawn, and the participant was contacted by phone. Both prizes were delivered to the recipients by mail using an address provided by the recipients.

Instrumentation

Three instruments were combined to create the portion of the survey measuring MHD and coping strategies. These three instruments include the General Health Questionnaire – 12 (GHQ-12) (see Appendix G) (Goldberg & Williams, 1991), the Brief Religious Coping Scale (Brief RCOPE) (see Appendix H) (Pargament, et al., 1998), and the Brief Coping Orientation to Problems Experienced Scale (Brief COPE) (see Appendix I) (Carver, 1997). The survey instrument online and in paper and pencil look identical to the combination of Appendices G, H, and I. Permissions for using these instruments are listed in Appendices J, K, and L.
The General Health Questionnaire – 12 (GHQ-12) (Goldberg & Williams, 1991) (see Appendix G) is an abbreviated form of the General Health Questionnaire – 28 (GHQ-28) and its original version with 60 items first created by Goldberg in 1972 (Goldberg, 1972). The purpose of the GHQ-12 is to measure the presence of MHD as exhibited by the report of depression and anxiety related symptoms. The GHQ-12 is a 12 item instrument using a four response scale ranging from “Better Than Usual,” to “Much Less Than Usual.” Various options may be utilized for scoring responses, but the authors of the GHQ recommended using the method that assigns scores of 0, 0, 1, and 1, respectively, therefore responses such as “Better Than Usual” receive a score of 0 and “Much Less Than Usual” receives a score of 1. Goldberg et al., (1997) report that this format is preferable to a standard Likert-type scoring method. Items include questions such as Item 1, “Have you recently been able to concentrate on what you’re doing?” and Item 5, “Have you recently felt constantly under strain?” (see Appendix G) The scores given for the 12 items are then summed to create a total score potentially ranging from 0 to 12. A cutoff score of two or greater was used; therefore, a score greater or equal to 2 indicated the responded reported the presence of MHD. Scores of one or less indicated the absence of MHD.

The GHQ-12 is widely used as a screening instrument in research and clinical settings and takes about two to three minutes to complete. Goldberg et al., (1997) demonstrated the GHQ-12 has good predictability when utilized with 5,438 participants across 15 centers in 11 different languages. Werneke et al. (2000) evaluated the variable structure of both the 28 item and the 12 item instruments and concluded that a general
score of the GHQ-12 explained 50% of the variance in identifying severity of illness whereas the GHQ-28 general score explained 37% of the variance in predicting severity of illness. Variable analysis demonstrated that the individual variables of the GHQ were somewhat correlated for both instruments, and despite problems with variability among the variables between study groups, the 12 item instrument would be preferable for use in clinical settings as a method of screening and detection of psychopathology. Depression and social dysfunction were the primary two variables that were observed in Werneke et al.’s (2000) study of the GHQ-12.

The GHQ-12 has demonstrated good validity scores in psychometric evaluations of the instrument. Goldberg et al. (1997) conducted a study that involved the GHQ-12 being administered in 15 centers around the world in 10 different languages in addition to English. Using 25,916 participants in a first round and 5,438 participants in the follow-up round, the authors computed a Receiver Operating Characteristic (ROC) curve of 0.88 for the GHQ-12. They reported a fairly narrow range of 0.83 to 0.95. In this particular study, the authors evaluated the difference between scoring methods and determined that the GHQ method of scoring (by assigning 0, 0, 1, and 1 to the responses) was preferable to the Likert-type method (by assigning 0, 1, 2, 3).

In a study comparing the GHQ-12 with the Symptom Check List (SCL-90-R), Schmitz et al. (1999) found the two instruments to be very similar along psychometric properties. The SCL-90-R and the GHQ-12 are frequently used in primary care settings as screening for the presence of psychopathology. Schmitz et al. (1999) indicated that both instruments demonstrated good ROC scores. The authors also indicated there was no
significant difference between the use of GHQ scoring verses a Likert-type scoring for the GHQ-12.

Quek, Low, Razack, & Loh (2001) evaluated the psychometric properties of the English version GHQ-12 among 108 urological patients in Malaysia. These researchers reported high internal consistency good test–retest reliability with a 12 week interval. The total GHQ-12 had an internal consistency of 0.79 ($P < 0.001$) and a Pearson’s product moment correlation of 0.68 ($P < 0.01$). Wijndaele et al. (2007) evaluated the reliability and equivalence of several mental health questionnaires including the GHQ-12 using both computer and paper and pencil formats and found the internal consistency (Cronbach’s alpha) to be nearly identical for the GHQ-12 between the computer version and the paper and pencil version at 0.79 and 0.78, respectively.

**Brief religious coping scale – Brief RCOPE**

The Brief Religious Coping Scale (Brief RCOPE) (Pargament et al., 1998) (see Appendix H) is a 14 item scale adapted from the 105 item Religious Coping Scale (Pargament, Koenig, & Perez, 2000). Both scales are theoretically derived instruments that measures positive and negative forms of religious coping. Like the longer RCOPE, the Brief RCOPE uses 4-point Likert-type scoring ranging in responses from 1 “not at all” to 4 “a great deal.” The Brief RCOPE specifically measures two sub scales, positive religious coping and negative religious coping. The items for the Brief RCOPE are listed in Appendix H in a randomized order as they were presented on the survey. Positive forms of religious coping included questions such as Item 24, “Looked for a stronger connection with God.” and Item 16, “Sought God’s love and care.” Negative forms of
religious coping included questions such as Item 21, “Felt punished by God for my lack of devotion.” and Item 15, “Wondered what I did for God to punish me.” (see Table 3.1 for items included in each of the subscales of positive and negative religious coping).

Table 3.1

<table>
<thead>
<tr>
<th>Positive Religious Coping</th>
<th>Items 13, 16, 19, 22, 24, 25, and 26</th>
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</thead>
<tbody>
<tr>
<td>Negative Religious Coping</td>
<td>Items 14, 15, 17, 18, 20, 21, and 23</td>
</tr>
</tbody>
</table>

The response values for each scale were summed, and the potential range of scores for each subscale was 7 to 28 with higher scores representing greater use of the specific form of religious coping. These two scales were not treated as polarities of one another; therefore it was possible for a respondent in this study to score high for both scales.

Pargament et al. (1998) evaluated the psychometric properties of the 14 item scale in two different samples. The first sample included 540 college students, and the second sample involved 551 hospitalized medical patients over the age of 55. In both cases, the internal consistency for the two scales measuring positive and negative religious coping were high. Using Cronbach’s coefficient alpha, the college sample scored .90 and .81 for positive and negative religious coping, respectively. The Cronbach’s coefficient alpha for the hospital sample was .87 and .69 for the positive and negative religious coping, respectively. In both cases, variable analysis supported a two-variable fit for the 14 items. The authors acknowledged that the samples may have been large enough to
influence the measure of confirmatory variable analysis, the chi-square test was significant for both the college and hospital samples. Both variables demonstrated significant but fairly low correlations with one another in both studies (college: \( r = .17, p < .001 \); hospital: \( r = .18, p < .001 \)), and the authors concluded that this demonstrated that they were measuring different characteristics of the samples.

**Brief coping orientation to problems experienced scale – Brief COPE**

The brief version of the Coping Orientation to Problems Experienced Scale (Brief COPE) (Carver, 1997) (see Appendix I) is a 28 item scale that measures a wide range of functional (positive) and dysfunctional (negative) coping strategies. This scale uses 4-point Likert-type responses ranging from 0 “I usually didn’t do this at all.” to 3 “I did this a lot.” The Brief COPE consists of 14 sub-scales including a. Active Coping, b. Planning, c. Positive Reframing, d. Acceptance, e. Humor, f. Religion, g. Using Emotional Support, h. Using Instrumental Support, i. Self-Distraction, j. Denial, k. Venting, l. Substance Use, m. Behavioral Disengagement, and n. Self-Blame. Each of the 14 sub-scales consists of two items. For example, Item 27, “I’ve been concentrating my efforts on doing something about the situation I’m in,” and Item 36, “I’ve been taking action to try to make the situation better,” compose the “Active Coping” scale. These 14 subscales of the Brief-COPE create two overall categories in which eight subscales make up “adaptive coping strategies” (Positive General Coping) with a potential score ranging from 0 to 48 while the remaining six items make up the maladaptive coping strategies (Negative General Coping) with a potential score ranging from 0 to 36 (see Table 3.2 for items in Appendix I that were used for positive and negative forms of coping).
Table 3.2
Positive and Negative Items for Coping Orientation to Problems Scale

<table>
<thead>
<tr>
<th>Positive Coping</th>
<th>Active Coping</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td></td>
<td>Items 27 and 36</td>
</tr>
<tr>
<td>Positive Reframing</td>
<td></td>
<td>Items 29 and 46</td>
</tr>
<tr>
<td>Acceptance</td>
<td></td>
<td>Items 32 and 47</td>
</tr>
<tr>
<td>Humor</td>
<td></td>
<td>Items 51 and 53</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td>Items 31 and 35</td>
</tr>
<tr>
<td>Using Emotional Support</td>
<td></td>
<td>Items 30 and 41</td>
</tr>
<tr>
<td>Using Instrumental Support</td>
<td></td>
<td>Items 39 and 42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Items 33 and 54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Negative Coping</th>
<th>Self-Distraction</th>
<th>Items 43 and 44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denial</td>
<td></td>
<td>Items 34 and 38</td>
</tr>
<tr>
<td>Venting</td>
<td></td>
<td>Items 28 and 48</td>
</tr>
<tr>
<td>Substance Use</td>
<td></td>
<td>Items 49 and 50</td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td></td>
<td>Items 45 and 52</td>
</tr>
<tr>
<td>Self-Blame</td>
<td></td>
<td>Items 37 and 40</td>
</tr>
</tbody>
</table>

Carver (1997) measured the psychometric properties of the Brief COPE by including it with assessments administered to a sample of disaster victims from southern Florida following Hurricane Andrew. The Brief COPE was administered to 168 participants three to six months after the storm with follow-up administrations six months later and then one year later. Using an exploratory variable analysis, the author indicated
that nine variables result emerged. Four of the scales formed a priori variables including Substance Use, Religion, Humor, and Behavioral Disengagement. Four additional variables were formed with combinations of the a priori variables. Active Coping, Planning, and Positive Reframing formed a single variable, and Use of Emotional Support and Use of Instrumental Support formed a second variable. The third variable included items from Venting and Self-Distraction scales. The fourth variable included Denial and Self-Blame. A single Acceptance item formed the last variable with one of the acceptance items aligning with the Active Coping variable. Internal consistency was reported for the 14 scales using all three administrations of the Brief COPE. The alpha scores for all scales were determined to be acceptable with scores exceeding .60 except for Denial, Venting, and Acceptance which all had scores exceeding .50. Carver did not list individual scores of the scales.

**Demographic questionnaire**

A demographic questionnaire (see Appendix M) was included which asked questions about the participant’s age, gender, race, education level, history of mental health treatment prior to the hurricane, and county of residence to determine proximity to the disaster (both at the time of Katrina and at the time of data collection). The demographic questionnaire also requested information regarding the participant’s subjective perspective of personal losses as a result of the disaster (both at the time of Katrina and at the time of data collection) and their level of involvement in disaster recovery activities in the year prior to the survey. Items that measured religious variables such as level of religious conservatism, religious participation, religious salience, and
ordination status were included to determine the religiosity of the sample. Participants were also given the opportunity to rate their experiences of stress as well as her or his ability to manage that stress over the past year. Table 3.3 lists the variables obtained from

Table 3.3
Demographic Questionnaire Item Numbers and Ranges

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Potential Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery Involvement</td>
<td>57</td>
</tr>
<tr>
<td>Religious Participation</td>
<td>58 - 60</td>
</tr>
<tr>
<td>Religious Conservatism</td>
<td>61 - 62</td>
</tr>
<tr>
<td>Religious Salience</td>
<td>63 - 65</td>
</tr>
<tr>
<td>Subj. Loss - Katrina</td>
<td>66</td>
</tr>
<tr>
<td>Subj. Loss - Current</td>
<td>67</td>
</tr>
<tr>
<td>Proximity - Katrina</td>
<td>68</td>
</tr>
<tr>
<td>Proximity - Current</td>
<td>69</td>
</tr>
<tr>
<td>Mental Health History</td>
<td>70</td>
</tr>
<tr>
<td>Race</td>
<td>71</td>
</tr>
<tr>
<td>Education Level</td>
<td>72</td>
</tr>
<tr>
<td>Ordination Status</td>
<td>73</td>
</tr>
<tr>
<td>Age</td>
<td>74</td>
</tr>
<tr>
<td>Gender</td>
<td>75</td>
</tr>
</tbody>
</table>
the Demographic Questionnaire, the Item numbers in Appendix M that corresponded to that variable, and the range of potential scores that could have been computed for that variable.

**Measuring religiosity**

Three sets of questions were included to measure participant’s religiousness. Specifically, these items focused on religious participation, religious conservatism, and religious salience. Items 58 – 60 assessed religious participation with each item having a potential range of scores of 0 to 7 with a score of 7 being assigned to the option representing the greatest frequency of participation offered for the item. The sum of the three items served as the composite score with a range of 0 to 21. Higher scores indicated higher levels of participation in religious activities. Religious Conservatism was determined by the composite of Items 61 and 62. Item responses ranged from “Strongly Disagree” to “Strongly Agree” with values ranging from 1 to 5 respectively. The combined score of the two items potentially ranged from 2 to 10. Higher scores on this variable indicated greater levels of conservative beliefs. Finally, Items 63 through 65 measured Religious Salience. Each item had a range of scores from 1 to 5 with the score of 5 being assigned to the response indicating the highest level of strength of the value such as “Very Important.” Religious Salience was the combined scores of all three items with higher scores representing higher levels of Religious Salience.
Measuring subjective perspectives of coping and loss

Two questions, Items 66 and 67, were designed by the researcher to give the respondent an opportunity to express his or her subjective sense of personal loss due to the Hurricane Katrina disaster both at the time of Katrina (Subjective Loss – Katrina) as well as at the time data was collected (Subjective Loss – Current) (see Appendix M). Both of these items had a response range from one to eight with a score of one representing “None at All” and eight representing “A Very Significant Amount.”

Recovery involvement

Recovery Involvement was measured using Item 57 which asked the participant to rate her or his level of involvement in recovery efforts throughout the year prior to data collection. Response options for frequency ranged from “None” to “On a daily or weekly basis” and the responses were scored with a range from 1 to 5, respectively. This item was included to test the mediating role of recovery involvement efforts church leaders involved in professional and volunteer efforts as part of the mission of the United Methodist Church (Personal Interview with Steve Casteel, Director of Connectional Ministries, Mississippi Annual Conference, April 18, 2008).

Proximity to the disaster

Ullman and Newcome (1999) reported that persons that live closer to a disaster often experience greater resource losses. While pre-existing variables may expose persons to greater risk of psychological distress, the researchers utilized a geographic method of determining proximity in a study of psychological outcomes associated with
an earthquake. Based upon a similar geographic concept expanded to address the scope of Hurricane Katrina, in the current study proximity to the disaster was determined using the participant reported county of residence both at the time of the Katrina disaster and the time of the survey. Each county was assigned a value based on the county’s proximity to the storm in relation to the path of Hurricane Katrina, including: a. two points for the counties where the hurricane made landfall; b. two points for the counties experiencing the storm surge at the time of Hurricane Katrina’s landfall (FEMA website, http://www.fema.gov/pdf/hazard/flood/recoverydata/ms_overview.pdf), c. two points for counties that experienced category three hurricane force winds based upon the Saffir-Simpson Scale (NOAA website, http://www.nhc.noaa.gov/aboutsshs.shtml), d. two points for counties that experienced category two hurricane force winds, e. two points for counties that experienced category one hurricane force winds (Gabe, Falk, McCarty, Mason, 2005); and f. one point for all Mississippi counties that were federal disaster area (FEMA website, http://www.fema.gov/news/event.fema?id=4807). The proximity score was set as the total criteria points tallied for each county. See Figure 3.1 for a graphic depiction of all 82 counties and their scores.

Thirty-two counties in Mississippi were not declared federal disaster areas and received no hurricane force winds; therefore, they received a proximity score of zero. Hancock County, where Hurricane Katrina made landfall, qualified for all six of these criteria and received a proximity score of eleven. Harrison and Jackson counties both experienced storm surge, but Harrison County also experienced category three winds; therefore Harrison County received a proximity score of nine, and Jackson County received a proximity score of seven. Pearl River and Stone counties also received a
Figure 3.1  Proximity Scores for Each Mississippi County in Relation to the Disaster Brought by Hurricane Katrina in August of 2005
seven; they did not experience storm surge, but both counties did experience category one, two, and three hurricane force winds.

Marion, Lamar, Forrest, Perry, and George counties received a five for experiencing upwards to category two force winds. The following counties received a proximity score of three: Greene, Walthall, Pike Amite, Wilkinson, Adams, Franklin, Lincoln, Lawrence, Jefferson Davis, Jefferson, Claiborne, Copiah, Simpson, Smith Jasper, Clarke, Wayne, Greene, Lauderdale, Newton, Scott, Rankin, Hinds, Warren, Yazoo, Madison, Leake, Neshoba, and Kemper counties. Finally, Humphreys, Holmes, Choctaw, Oktibbeha, Lowndes, Noxubee, Winston, and Attala counties receive a score of one. With this scoring method, higher scores indicate higher levels of proximity to the actual storm force.

Data Analysis

The data analysis for this study involved both regression analysis and path analysis (Wright, 1921; Hair et al., 1998). The first two research questions utilized regression analysis. The first research question listed above asked, “Among United Methodist survivors of Hurricane Katrina in Mississippi, what combination of demographic and religious variables best predict variance in levels of Mental Health Distress (MHD) nearly three years after the storm?” All demographic and religious variables (excluding the coping variables) were simultaneously run in a regression analysis with MHD serving as the dependent variable. The second research question asked, “Among United Methodist survivors of Hurricane Katrina in Mississippi, how important are positive and negative religious coping strategies as compared to general
coping strategies in relation to MHD?” This question sought to determine if the religious coping variables provided a significant contribution to the prediction of MHD after controlling for the general coping variables. Utilizing regression analysis, the variables that were determined to be significant from the first question were entered followed by the general coping variables. Finally, the religious coping variables were added. The amount of added R squared analyzed indicates the additional contribution of religious coping to the regression model.

Finally, the third research question asked, “Among United Methodist survivors of Hurricane Katrina in Mississippi, what are the interrelationships between all demographic, religious, and religious coping variables in relation to MHD?” With the exception of the general coping variables, the last question sought to determine the interaction among all the variables as they predict MHD. Using Amos 16.0, a path diagram was inputted depicting the model. Figure 3.2 shows the researchers proposed path model that was estimated.

The demographic and religious variables on the left side are treated as exogenous, meaning they have no explicit causes as depicted in the model. As noted above in the reporting of the correlation matrix, path analysis depends upon the identification of known causality, including correlations (Hair et al., 1998). In Figure 3.2, curved, double-arrowed lines identify correlated exogenous variables.

The variables to the right of the demographic and religious variables are endogenous variables; in the path model another variable causes the endogenous variable. Each endogenous variable is assigned a latent variable which demonstrates unexplained or unobserved variables.
Limitations and researcher goals establish much of the structure of the model. As in the regression model described above, all the variables in the path model are depicted as predicting or causing the variable for MHD. Because special attention is placed upon the religious coping variables as well as recovery involvement, these variables are placed in the middle of the model to assess the interaction between MHD and the other variables in the model.

In the current study, MHD among persons involved in a natural disaster were evaluated using regression analysis and path analysis. In particular, the complexity of the relationships between demographic and religious variables along with coping strategies including positive and negative forms of both religious and general coping strategies were evaluated. Because a path analysis may be impacted by increasing numbers of variables, the scope of this research will limit variables to demographic characteristics including age, race, education and gender, loss appraisal, proximity to the disaster, and recovery involvement; religious variables such as religious participation, salience and conservatism; coping variables including positive and negative religious coping and positive and negative general coping; and the presence of MHD.
Figure 3.2 Proposed Path Model
CHAPTER IV
RESULTS

The current study was conducted among residents of the state of Mississippi 33 months after Hurricane Katrina made landfall on the Gulf Coast region. Specifically, this study sought to determine the levels of mental health distress among a sample of United Methodist leadership who had direct exposure to Hurricane Katrina and its aftermath. Using linear regression and path analysis (Wright, 1921; Hair et al., 1998), variables of interest (i.e., demographic variables, religious characteristics, and religious forms of coping and general forms of coping) were measured as predictors for the dependent variable, Mental Health Distress (MHD). The purpose of this study was to learn more about the relationship between the demographic, religious, and coping variables and MHD. Tables 4.1 and 4.2 provide descriptive statistics for the variables measured in this study.

Descriptive Statistics

For MHD, respondents with a score of two or greater on the General Health Questionnaire (GHQ) were identified as having the presence of MHD. A total of 71 of the respondents (28%) met this cutoff (see Table 4.1). Among the coping variables,
Positive Religious Coping had a mean score of 19.07 with a standard deviation of 4.409. The mean Negative Religious Coping score was 8.01 with a standard deviation of 1.861. These scores indicate that respondents to this survey considerably utilized more positive forms of religious coping than negative forms of religious coping in their responses to Hurricane Katrina, and considering the minimum score for both scales was 7, the mean of 8.01 for Negative Religious Coping is extremely low. As for the general forms of coping, Positive General Coping had a mean of 24.31 and a standard deviation of 9.680. The Negative General Coping had a mean of 6.09 with a standard deviation of 4.977. Positive General Coping was the sum of eight items and the Negative General Coping was the sum of six items each ranging in response scores from 0 to 3. Positive General Coping has an average response score of 3.04 while Negative General Coping has an average response score of 1.01. Again, like the religious coping, the respondents to this

<p>| Table 4.1 |
| Frequencies of Dichotomous Variables |</p>
<table>
<thead>
<tr>
<th>N</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displayed mental health distress</td>
<td>253</td>
<td>71</td>
</tr>
<tr>
<td>Had a mental health history prior to Katrina</td>
<td>248</td>
<td>30</td>
</tr>
<tr>
<td>Race was Caucasian</td>
<td>251</td>
<td>206</td>
</tr>
<tr>
<td>Were ordained clergy</td>
<td>251</td>
<td>101</td>
</tr>
<tr>
<td>Were female</td>
<td>241</td>
<td>132</td>
</tr>
</tbody>
</table>
Table 4.2
Descriptive Statistics of Measured Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive RCOPE</td>
<td>253</td>
<td>7</td>
<td>28</td>
<td>19.07</td>
<td>4.409</td>
</tr>
<tr>
<td>Negative RCOPE</td>
<td>253</td>
<td>7</td>
<td>19</td>
<td>8.01</td>
<td>1.861</td>
</tr>
<tr>
<td>Positive General COPE</td>
<td>253</td>
<td>0</td>
<td>46</td>
<td>24.31</td>
<td>9.680</td>
</tr>
<tr>
<td>Negative General COPE</td>
<td>253</td>
<td>0</td>
<td>34</td>
<td>6.09</td>
<td>4.977</td>
</tr>
<tr>
<td>Recovery Involvement</td>
<td>245</td>
<td>1</td>
<td>5</td>
<td>2.73</td>
<td>1.480</td>
</tr>
<tr>
<td>Religious Participation</td>
<td>253</td>
<td>3</td>
<td>21</td>
<td>18.22</td>
<td>2.946</td>
</tr>
<tr>
<td>Religious Conservatism</td>
<td>252</td>
<td>2</td>
<td>10</td>
<td>7.90</td>
<td>2.037</td>
</tr>
<tr>
<td>Religious Salience</td>
<td>250</td>
<td>9</td>
<td>15</td>
<td>13.70</td>
<td>1.481</td>
</tr>
<tr>
<td>Subjective Loss – Katrina</td>
<td>249</td>
<td>1</td>
<td>8</td>
<td>3.18</td>
<td>2.284</td>
</tr>
<tr>
<td>Subjective Loss – Current</td>
<td>251</td>
<td>1</td>
<td>8</td>
<td>1.91</td>
<td>1.645</td>
</tr>
<tr>
<td>Proximity – Katrina</td>
<td>244</td>
<td>0</td>
<td>11</td>
<td>3.29</td>
<td>2.949</td>
</tr>
<tr>
<td>Proximity – Current</td>
<td>252</td>
<td>0</td>
<td>11</td>
<td>3.24</td>
<td>2.937</td>
</tr>
<tr>
<td>Education Level</td>
<td>251</td>
<td>1</td>
<td>6</td>
<td>4.27</td>
<td>1.145</td>
</tr>
<tr>
<td>Age</td>
<td>249</td>
<td>19</td>
<td>86</td>
<td>53.50</td>
<td>13.239</td>
</tr>
</tbody>
</table>

Survey used positive forms of general coping much more than they used negative forms of general coping.

Recovery Involvement had a mean score of 2.73 with a standard deviation of 1.480. As noted above, the potential range of scores was one to five suggesting that
persons indicated with this item they typically had some experience with recovery involvement. This confirms that investigating this variable with this particular population was prudent.

The three demographic variables that were the combination of more than one survey item were Religious Participation, Religious Conservatism, and Religious Salience. Cronbach’s alphas for these three variables were .667, .790, and .526, respectively. The Cronbach’s alpha values for Religious Participation and Religious Conservatism are moderately acceptable, but the Cronbach’s alpha for Religious Salience is low. For Religious Salience, this score suggesting that the three survey items making up the factor may be measuring separate concepts or ideas (Hair et al., 1998). Therefore, some caution should be exercised when interpreting the results associated with this variable.

Religious Participation has a relatively high mean of 18.22 with a standard deviation of 2.946. With a maximum score of 21 for this variable, this suggests that this group reported very high levels of participation in religious activities. Religious Conservatism had a mean score of 7.90 with a standard deviation of 2.037. Again, this group reported to have a high level of conservative values considering the maximum score was 10. Religious Salience had a mean of 13.70 and a standard deviation of 1.481 indicating a high level of religious salience in this sample which is consistent with what would be expected among this group of United Methodist leaders.
Subjective Loss – Katrina and Subjective Loss - Current

The mean scores for Subjective Loss – Katrina and Subjective Loss – Current was 3.18 and 1.91, respectively, and standard deviations of 2.284 and 1.645 respectively. These scores indicate that personal losses reported to be experienced by responded continued to be present even at the time of data collection 33 months after the Katrina disaster.

Proximity – Katrina and Proximity - Current

Two survey questions, Items 68 and 69, asked the respondent to indicate his or her county of residence in Mississippi. Item 68 asked the respondent for the current county of residence, that is the county in which she or he lived at that moment (Proximity – Current). Item 69, asked the respondent to recall which county he or she lived at the time Hurricane Katrina made landfall. A person could also indicate that he or she did not live in Mississippi at the time of Katrina or at the time of taking the survey. Interestingly, 75% of Mississippi Counties were represented in this sample. Responses were converted to proximity scores by recording the corresponding value with the county name as indicated previously in Figure 3.1. The Proximity variable had a potential range of 0 to 11. This was done for both time references. The actual responses ranged from 0 to 11 for both items. The mean Proximity – Katrina was 3.29, and the mean Proximity – Current was 3.24. These averages indicate that among the respondents to this survey, the proximity scores were relatively consistent from the time of Hurricane Katrina’s landfall to the time of data collection 33 months later. While the range of scores for Proximity was between 0 and 11, the majority of counties in Mississippi, 72, were assigned a score
of zero, one, or three. Only ten counties received scores of five or greater. The average scores were greater than three which indicated that respondents experienced a relatively high Proximity score; therefore their exposure to the disaster was relatively high.

**Transformations**

Several of the variables displayed non-normal distributions, so transformations were performed to improve the distributions on variables that were not dichotomous and where transformations proved to improve the distribution characteristics. Both regression analysis and path analysis assume normal distributions, therefore transformation offer the best alternative to non-normal distributions (Hair et al., 1998). Table 4.3 lists the transformations and measures of kurtosis and skewness for each of the variables in the study. Variables with a skewness or kurtosis that exceeded two times the standard error were transformed. If the transformation succeeded in improving the skewness and kurtosis, the transformed variable was kept and Table 4.3 displays the skewness and kurtosis for these transformed variables which were used in the analysis. In cases where no values are listed under the transformed column, the original variable was used.

**Correlations of Variables**

The Pearson Correlations provides some very interesting results (See Table 4.4). These correlations are computed using the transformed variables. Highlighted with asterisks on the table are correlations that are significant at the .01 level and the .05 level. The analysis of correlations was important especially for the path analysis. Variables
correlated with one another and used as predictors in the path analysis must be identified as correlated when building the path model (Hair et al., 1998). Figure 3.2 shows the

<table>
<thead>
<tr>
<th>Variable</th>
<th>Trans. Method</th>
<th>Original Skew</th>
<th>Original Kurtosis</th>
<th>Transformed Skew</th>
<th>Transformed Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive RCOPE</td>
<td>None</td>
<td>-.174</td>
<td>-.484</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative RCOPE</td>
<td>Inverse</td>
<td>2.826</td>
<td>9.556</td>
<td>1.578</td>
<td>1.924</td>
</tr>
<tr>
<td>Pos. General COPE</td>
<td>None</td>
<td>-.206</td>
<td>-.603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neg. General COPE</td>
<td>Log.</td>
<td>1.398</td>
<td>4.350</td>
<td>-.692</td>
<td>-.436</td>
</tr>
<tr>
<td>Rec. Involvement</td>
<td>None</td>
<td>.541</td>
<td>-574</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rel. Participation</td>
<td>Reflect/Inv.</td>
<td>-1.736</td>
<td>3.893</td>
<td>.851</td>
<td>-.786</td>
</tr>
<tr>
<td>Rel. Conservatism</td>
<td>None</td>
<td>-.649</td>
<td>-.625</td>
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<td></td>
</tr>
<tr>
<td>Religious Salience</td>
<td>Reflect/Log.</td>
<td>-1.288</td>
<td>1.188</td>
<td>.343</td>
<td>-1.044</td>
</tr>
<tr>
<td>Sub. Loss – Katrina</td>
<td>None</td>
<td>.862</td>
<td>-.497</td>
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</tr>
<tr>
<td>Sub. Loss – Current</td>
<td>Inverse</td>
<td>1.999</td>
<td>3.336</td>
<td>-.889</td>
<td>-1.002</td>
</tr>
<tr>
<td>Proximity – Katrina</td>
<td>None</td>
<td>.725</td>
<td>-.493</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximity – Current</td>
<td>None</td>
<td>.734</td>
<td>-.410</td>
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<td></td>
</tr>
<tr>
<td>Education Level</td>
<td>Reflect/Squ. Rt.</td>
<td>-.917</td>
<td>-.117</td>
<td>.556</td>
<td>-.353</td>
</tr>
<tr>
<td>Age</td>
<td>None</td>
<td>-.294</td>
<td>-.100</td>
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</tbody>
</table>
correlated predictor variables with a curved, double-arrowed line between each correlated variable.

*Correlations with MHD.*

MHD is highly correlated with coping strategies; Positive and Negative (general) Coping are significantly correlated at the .01 level (.183 and .348, respectively) with MHD, but only Negative Religious Coping is significantly correlated at the .05 level (.138) with MHD. Positive Religious Coping is not correlated with MHD at -.022. Recovery Involvement is significantly correlated with MHD at .176 which is also statistically significant at the .01 level. These two variables measured the respondents self-report of experiencing Katrina related stress and Katrina related recovery involvement, respectively, over the past year, and persons that reported higher levels of these measures also reported higher levels of distress. Persons that scored higher levels of self-reported success at managing Katrina related stress over the past year had a statistically significant negative relationship (-.368, p <= .01) with MHD.

Religious Salience, the self-report of the importance of faith to the respondent, is negatively correlated (-.138) with MHD at a .05 level of significance. Subjective Loss at the time of Katrina and at the time of taking the survey are positively correlated (.225 and .223, respectively). Both of these correlations are significant at the .01 level. Finally, higher levels of proximity to the disaster positively correlated with MHD (.135) at the .05 level of significance.
### Table 4.4
Correlation Matrix for All Variables Measured

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td><strong>1.000</strong></td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>.138*</td>
<td>.094</td>
<td><strong>1.000</strong></td>
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<tr>
<td>4</td>
<td>.183**</td>
<td>.162**</td>
<td>.140*</td>
<td><strong>1.000</strong></td>
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<tr>
<td>5</td>
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<td>.615**</td>
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<tr>
<td>6</td>
<td>.176**</td>
<td>.081</td>
<td>.033</td>
<td>.209**</td>
<td>.108</td>
<td><strong>1.000</strong></td>
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</tr>
<tr>
<td>7</td>
<td>-.156*</td>
<td>-.013</td>
<td>-.007</td>
<td>.065</td>
<td>-.124*</td>
<td>.094</td>
<td><strong>1.000</strong></td>
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<tr>
<td>8</td>
<td>-.068</td>
<td>.144*</td>
<td>.032</td>
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<td>.148*</td>
<td>.008</td>
<td>.144*</td>
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<td>.104</td>
<td>.173**</td>
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<td>-.051</td>
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<td>-.027</td>
<td>-.065</td>
<td>-.094</td>
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<td>.064</td>
<td>.063</td>
<td>.058</td>
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<td>.378**</td>
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<td>-.023</td>
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<td>.008</td>
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<td>.037</td>
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<td>-.001</td>
<td>-.102</td>
<td>.067</td>
<td>.117</td>
<td>-.311**</td>
<td>.163*</td>
<td>-.148*</td>
<td>-.101</td>
<td>-.170**</td>
<td>-.153*</td>
<td>-.028</td>
<td>-.214**</td>
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<td>.016</td>
<td>-.082</td>
<td>-.156*</td>
<td>.126*</td>
<td>.074</td>
<td>.042</td>
<td>.132*</td>
<td>.026</td>
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<td>.047</td>
<td>.014</td>
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<td>.043</td>
<td>-.087</td>
<td>-.125*</td>
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<td>.019</td>
<td>.164**</td>
<td>.066</td>
<td>.160*</td>
<td>.133*</td>
<td>.067</td>
<td>.159*</td>
<td>-.287**</td>
<td>-.470**</td>
<td>.938</td>
<td>1.000</td>
</tr>
</tbody>
</table>

* .05 level of significance
** .01 level of significance
**Coping Strategies.**

The measure for the positive forms of general coping significantly correlated with both the Positive and Negative Religious Coping measures (.162, p <= .01, and .140, p <= .05, respectively). The negative forms of general coping were not correlated with either forms of religious coping. The positive and negative forms of general coping were significantly correlated at a very high level (.615, p <= .01) but the positive and negative forms of religious coping were not correlated with one another.

**Religious variables.**

Religious Participation measures participant self-report of involvement in religious activities such as religious worship, prayer, and study. Religious Salience measures self-report of the importance of religiousness to a person. These two variables may be different in that Religious Participation relates to religious activity while Religious Salience relates to the importance of being religious. The two variables are positively correlated (.255) at the .01 level of significance. Religious Participation is correlated with only one of the coping measures; it is inversely correlated with Carver’s Negative General Coping (-.124). Religious Salience is positively and significantly correlated at the .05 level with Positive Religious Coping (.148) and Positive (general) Coping (.144).

Religious Conservatism measures the level of conservative religious belief a person holds. It is negatively correlated with Education Level and Ordination Status (-.346 and -.311) indicating that higher levels of education and holding the credential of ordained minister are associated with less conservative beliefs among this sample. Race
is positively correlated with Religious Conservatism (.378) and indicates that among this particular sample non-Caucasians over Caucasians tended to rate higher Religious Conservatism scores. Religious Conservatism somewhat correlates with Religious Salience at .163 and Positive Religious Coping at .144 (both at the .05 level of significance), but it is not correlated with Religious Participation.

**Proximity and subjective loss.**

A correlation was found among the variables that measure proximity to the storm impact and the self-report of the amount of losses that occurred. Both Proximity and Subjective Loss include time references: at the time of Katrina (Subjective Loss – Katrina) and at the time of data collection 33 months after Katrina (Subjective Loss – Current). These variables are highly correlated as may be expected. In particular, Proximity – Katrina and Proximity – Current have a correlation of .677. Subjective Loss – Katrina and Subjective Loss – Current have a correlation of .639. Paired T-tests indicate that the means of the two proximity variables are similar while the means of the two subjective loss variables are different (See Table 4.2). Cross-tabulation of the pairs shows that a large number of cases for both measurements share the same value for both time references, but both measurements have a number of differences between time references (See Tables 4.5 and 4.6). In particular, the cross tabulation shows that reported losses (See Table 4.6) were much higher at the time of Katrina than at the current time. Despite their high correlations, both time reference for Proximity and Subjective Loss were used in this analysis due to the differences noted in the cross-
tabulations. For the path analysis and the third question, these correlations were identified in the path model (See Figure 3.2).

Table 4.5

Cross Tabulation between Proximity – Katrina and Proximity – Current

<table>
<thead>
<tr>
<th>Proximity - Current</th>
<th>0</th>
<th>1</th>
<th>3</th>
<th>5</th>
<th>7</th>
<th>9</th>
<th>11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>45</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>1</td>
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<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
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<td>13</td>
<td>1</td>
<td>76</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>96</td>
</tr>
<tr>
<td>Proximity - Katrina</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>11</td>
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<td>1</td>
<td>2</td>
<td>21</td>
<td>0</td>
<td>28</td>
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<tr>
<td>11</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>18</td>
<td>93</td>
<td>17</td>
<td>25</td>
<td>23</td>
<td>2</td>
<td>244</td>
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</table>
Table 4.6
Cross Tabulation between Subjective Loss – Katrina and Subjective Loss – Current

<table>
<thead>
<tr>
<th>Subjective Loss - Current</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
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</thead>
<tbody>
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<td>79</td>
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<td>50</td>
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<td>0</td>
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<td>0</td>
<td>31</td>
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<tr>
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<td>0</td>
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<td>25</td>
</tr>
<tr>
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<td>18</td>
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<td>1</td>
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<td>1</td>
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<td>11</td>
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<td>6</td>
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<td></td>
<td>8</td>
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<td>5</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>20</td>
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<td>15</td>
<td>9</td>
<td>7</td>
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</tbody>
</table>

Data Analysis for Each Research Question.

1. Among United Methodist survivors of Hurricane Katrina in Mississippi, what combination of demographic and religious variables best predict variance in levels of Mental Health Distress (MHD) nearly three years after the storm?
This analysis involved three stages of regression analysis. For the first research question, stage one utilized a step-wise regression analysis. With MHD serving as the dependent variable, the demographic and religious variables were inputted in the regression model. Pair-wise exclusions were used for managing missing variables. The step-wise method included the variables that added significantly to the variance while excluding those that did not contribute significantly.

After all the demographic and religious variables were evaluated for inclusion in the regression model, only Subjective Loss – Katrina, Religious Participation, and Recovery Involvement in the past year contributed significantly to the variance in MHD. These three variables combined resulted in an R Squared of .098 indicating that they explain about 10% of the variance in the changes in MHD. The first stage of the analysis is listed in Table 4.7 and shows that as each of the three variables were added to the model. The change in additional R Square significantly increased with each variable. Subjective Loss – Katrina initially provided an R Square of .047 (p <= .001), then Religious Participation added another .022 (p <= .05) to the R Square, and then Recovery Involvement provided an additional R Square of .025 (p <= .05). Interestingly, none of the variables measured in this study including age, race, gender, education, or ordination status contributed to the model significantly.

As noted in Chapter 3, respondents to the survey were given the option to describe their recovery involvement activities over the year prior to taking the survey. Of the 253 respondents, 70% (177) indicated participating in some kind of recovery involvement over the year prior to the survey, and over half (137) provided descriptions.
Many of these descriptions were similar and could be characterized in one of six categories which are listed in Table 4.8. This information indicates that respondents reported, both as professionals and volunteers, high levels of involvement in recovery activities even in the third year of recovery following Hurricane Katrina in Mississippi.

2. Among United Methodist survivors of Hurricane Katrina in Mississippi, how important are positive and negative religious coping strategies as compared to general coping strategies in relation to MHD?
Table 4.8
Categories of Recovery Involvement Descriptions

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteered in disaster area with work teams or other services</td>
<td>55</td>
<td>40.1%</td>
</tr>
<tr>
<td>Donated money/goods, Volunteered outside effected areas</td>
<td>35</td>
<td>25.5%</td>
</tr>
<tr>
<td>Served in a professional manner in effected areas.</td>
<td>20</td>
<td>14.6%</td>
</tr>
<tr>
<td>As a resident in effected area, hosted teams and self-recovery</td>
<td>14</td>
<td>10.2%</td>
</tr>
<tr>
<td>Non-specific involvement</td>
<td>13</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

The second stage of this regression analysis inputted the general coping variables (Carver’s Positive General COPE and Negative General COPE) along with the three variables previous identified as significant for the regression model. The final stage inputted the religious coping variables (Pargament’s Positive Religious Coping and Negative Religious Coping) to the model. The last two stages used the enter method which inputs the variables identified in the first step along with forcing the variables for Steps 2 and 3 to remain in the model. The general coping variables, Positive General Coping and Negative General Coping add a significant change of .076 (p <= .001) to the R Squared for a total of .174. When the religious coping variables were added, another .016 in R Squared was added for a model total of .190. The addition of Religious Coping variables to the model was not a significant increase with p = .103 (see Table 4.9).

Below, Table 4.10 shows the values and importance of each of the included variables in the regression model at each step of the calculation. Both Positive Religious
Coping and Positive General Coping (general) fail to meet the test for statistical significance at the .05 level in the last step of the model. Of the two negative forms of coping, Negative Religious Coping falls near the cutoff for the test of significance with a p value of .059. The negative form of general coping contributes to the model at the .001 significance level. With this particular population, the Religious Coping variables do not distinctly provide significant variance over and above the General Coping variables.

Considering this particular population presented as a highly religious group, the overtly religious forms of coping may not be distinguishable from the general forms of

Table 4.9
Linear Regression Model Summary

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<tr>
<th>Stage</th>
<th>R</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>R Square</th>
<th>F</th>
<th>Sig. F</th>
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<tr>
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<td>.417&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.174</td>
<td>.156</td>
<td>.414</td>
<td>.076</td>
<td>10.627</td>
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<tr>
<td>3</td>
<td>.436&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.190</td>
<td>.165</td>
<td>.411</td>
<td>.016</td>
<td>2.293</td>
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</tbody>
</table>

<sup>a</sup> Predictors: (Constant), Subjective Loss - Katrina, Religious Participation, Recovery Involvement, Positive General Coping, Negative General Coping

<sup>b</sup> Predictors: (Constant), Subjective Loss - Katrina, Religious Participation T, Recovery Involvement, Positive General Coping, Negative General Coping, Positive Religious Coping, Negative Religious Coping
Table 4.10

Linear Regression Coefficientsa

<table>
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<th></th>
<th></th>
<th></th>
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<tr>
<td></td>
<td>Unstandardized Coefficients</td>
<td>Standardized Coefficients</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>(Constant)</td>
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<td>.075</td>
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<td>.087</td>
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<td>.002</td>
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<td>.087</td>
<td>-.166</td>
<td>-2.649</td>
<td>.009</td>
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<td>.019</td>
<td>.160</td>
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<td>.044</td>
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<td>.086</td>
<td>-.123</td>
<td>-1.995</td>
<td>.047</td>
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<tr>
<td>Recovery Involvement</td>
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<td>.019</td>
<td>.145</td>
<td>2.340</td>
<td>.020</td>
</tr>
<tr>
<td>Positive General COPE</td>
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<td>.004</td>
<td>-.058</td>
<td>-.744</td>
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<tr>
<td>Negative General COPE</td>
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<td>.095</td>
<td>.320</td>
<td>4.057</td>
<td>.000</td>
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Table 4.10  Continued

Linear Regression Coefficients

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<th>Model</th>
<th>Unstandardized</th>
<th>Standardized</th>
</tr>
</thead>
<tbody>
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<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
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<td>.012</td>
</tr>
<tr>
<td>Religious Participation</td>
<td>-.169</td>
<td>.085</td>
</tr>
<tr>
<td>Recovery Involvement</td>
<td>.045</td>
<td>.019</td>
</tr>
<tr>
<td>Positive General COPE</td>
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<td>.004</td>
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<tr>
<td>Negative General COPE</td>
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<td>.094</td>
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<tr>
<td>Positive RCOPE</td>
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<td>.006</td>
</tr>
<tr>
<td>Negative RCOPE</td>
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<td>1.340</td>
</tr>
</tbody>
</table>

a. Dependent Variable: MHD
coping. Of the religious and demographic variables that were originally included from Stage 1 of the analysis, Religious Participation and Recovery Involvement continue to contribute to the model significantly at the .05 level. Subjective Loss – Katrina becomes non-significant once the coping variables are added to the model. Despite the inclusion of the variables for positive forms of religious and general coping, the model remains significant at the .001 level at each step of the calculation. Table 4.11 presents the ANOVA analysis for the models. All the models are significant in the ANOVA test, so they are acceptable models.

3. Among United Methodist survivors of Hurricane Katrina in Mississippi, what are the interrelationships between all demographic, religious, and religious coping variables in relation to MHD?

Despite the fact the Religious Coping variables did not demonstrate significant variance over and above General Coping in the regression analysis for the previous question, the General Coping variables were not used for analyzing the third research question. The Religious Coping variables were of particular interest to the third research question.

Using Amos 16.0, a path diagram was inputted depicting the model for this question as depicted in Figure 3.2 and described previously. After inputting the proposed model, the Amos 16.0 software calculated the estimates of all the relationships. Figure 4.1 below depicts the significant relationships in the model. The value next to the line pointing from one variable to the next indicates the standardized estimate of the influence in the direction of the arrow. The significance is identified with corresponding asterisks beside each estimate. Variables that failed to reach the significance of at least a p value
Table 4.11

ANOVA Test for Model Significance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>4.689</td>
<td>3</td>
<td>1.563</td>
<td>8.440</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>43.144</td>
<td>233</td>
<td>.185</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>47.832</td>
<td>236</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Regression</td>
<td>8.324</td>
<td>5</td>
<td>1.665</td>
<td>9.733</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>39.509</td>
<td>231</td>
<td>.171</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>47.832</td>
<td>236</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Regression</td>
<td>9.099</td>
<td>7</td>
<td>1.300</td>
<td>7.686</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>38.733</td>
<td>229</td>
<td>.169</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>47.832</td>
<td>236</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: Subjective Loss - Katrina, Religious Part., Recovery Involvement

<sup>b</sup> Predictors: Subjective Loss - Katrina, Rel. Participation, Recovery Involvement, Pos. Cope, Neg. Cope

<sup>c</sup> Predictors: Subjective Loss - Katrina, Religious Participation, Recovery Involvement, Positive General Cope, Negative General Cope, Negative RCOPE, Positive RCOPE

<sup>d</sup> Dependent Variable: MHD
of .05 or less were not depicted. The relationships that are described below represent that as the first variable increases or decreases by one standard deviation, the effected variables likewise increases or decreases by the amount of standard deviation indicated by the estimate shown alongside the arrow. For instance, as Negative Religious Coping increases by one (1) standard deviation, MHD increases by .131 standard deviations. This indicated that higher levels of Recovery Involvement contributed to increased levels of MHD among persons that participated in this survey.

The Amos 16.0 software computes several tests for the fitness of the path model. The most commonly used fit test is the chi square goodness of fit. The Amos 16.0 output reported that the chi square was significant (p <= .001) indicating the model is not a good fit. For sample sizes greater than 200, the chi square test can easily give a Type II error suggesting that the model is not fit when it actually is a good fit model (Ullman, 2001). The Amos 16.0 software also provides a ratio of the chi square to the number of the degrees of freedom. For this model, the ratio is 1.709. This accounts for the larger sample size, and this ratio indicates a good fitting model (Ullman, 2001).

Amos 16.0 calculates an alternative measure of goodness of fit for a path model called the Root Mean Square Error of Approximation (RMSEA). The RMSEA for this model is .053, which indicates that the model calculates to be just above the cut-off of less than .05 for being a good fit. Models below .08 may be considered an adequate fit, and this model clearly falls within the adequate range for goodness of fit test Schumacker & Lomax, 2004; Hair et al., 1998).

Based upon the graph of the path analysis output in Figure 4.1, Negative Religious Coping affects MHD at the .05 level of significance with a standardized
Figure 4.1 Path Model with Standardized Estimates for Significant Relationships
estimate of .131. As noted in the correlation matrix, none of the other variables in the model demonstrated a significant relationship with Negative Religious Coping, and the path analysis demonstrates no variables offering a significant causal relationship toward Negative Religious Coping. Recovery Involvement relates to Mental Health Distress. The standardized estimate of this relationship is .162 and is significant at the .05 level. The contribution of Proximity – Current leading to Recovery Involvement represents the comparatively strongest relationship with a standardized estimate of .368 which is significant at the .001 level. Additionally Recovery Involvement increases with significant influence from Ordination Status (.183, p <= .01), Religious Participation (.143, p <= .05), and Subjective Loss – Current (.208, p <= .01). Religious Salience provides a significantly decreasing influence upon Recovery Involvement (-.132, p <= .05).

Like regression analysis, path analysis calculates the direct effects of one variable upon another. Additionally, an important aspect of path analysis is the ability to calculate indirect effects of one variable upon another variable through mediating variables showing the interrelationships between predictor variables upon the dependent variables. Also, the total of direct and indirect effects upon a dependent variables can be added. Table 4.12 shows the standardized estimates of direct, indirect, and total effects upon MHD in the model.

In addition to the direct effect of Negative Religious Coping of .131 upon Mental Health Distress, Subjective Losses – Current and Recovery Involvement both show somewhat higher total effects of .143 and .155, respectively. Subjective Loss – Katrina
### Table 4.12

Direct, Indirect, and Total Effects of Variables upon Mental Health Distress

<table>
<thead>
<tr>
<th>Effect</th>
<th>Direct</th>
<th>Indirect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery Involvement</td>
<td>0.162</td>
<td>-0.007</td>
<td>0.155</td>
</tr>
<tr>
<td>Subj. Loss – Current</td>
<td>0.112</td>
<td>0.030</td>
<td>0.143</td>
</tr>
<tr>
<td>Negative RCOPE</td>
<td>0.131</td>
<td>0.000</td>
<td>0.131</td>
</tr>
<tr>
<td>Religious Salience</td>
<td>-0.090</td>
<td>-0.029</td>
<td>-0.119</td>
</tr>
<tr>
<td>Race</td>
<td>0.091</td>
<td>0.027</td>
<td>0.117</td>
</tr>
<tr>
<td>Education Level</td>
<td>0.114</td>
<td>0.000</td>
<td>0.114</td>
</tr>
<tr>
<td>Religious Participation</td>
<td>-0.107</td>
<td>0.025</td>
<td>-0.082</td>
</tr>
<tr>
<td>Subj. Loss – Katrina</td>
<td>0.066</td>
<td>0.013</td>
<td>0.079</td>
</tr>
<tr>
<td>Hx of Mental Health Tx</td>
<td>0.088</td>
<td>-0.017</td>
<td>0.071</td>
</tr>
<tr>
<td>Proximity – Katrina</td>
<td>0.090</td>
<td>-0.020</td>
<td>0.070</td>
</tr>
<tr>
<td>Religious Conservatism</td>
<td>-0.044</td>
<td>-0.001</td>
<td>-0.045</td>
</tr>
<tr>
<td>Positive RCOPE</td>
<td>-0.042</td>
<td>0.000</td>
<td>-0.042</td>
</tr>
<tr>
<td>Gender</td>
<td>0.037</td>
<td>-0.003</td>
<td>0.034</td>
</tr>
<tr>
<td>Age</td>
<td>-0.054</td>
<td>0.020</td>
<td>-0.034</td>
</tr>
<tr>
<td>Ordination Status</td>
<td>-0.055</td>
<td>0.031</td>
<td>0.024</td>
</tr>
<tr>
<td>Proximity – Current</td>
<td>-0.058</td>
<td>0.072</td>
<td>0.014</td>
</tr>
</tbody>
</table>
calculates to provide a standardized estimate of total effect of .079, much less than the other variables. With positive values for total direct effect, each of these variables contributes to increases in Mental Health Distress. As for Religious Participation, it provides a total effect of -.082 providing a small decrease in the potential for MHD. Its direct effect is -.107, but indirect effects contribute a positive influence upon the presence of MHD.
CHAPTER V

CONCLUSIONS

Summary of Results

For survivors of natural disaster such as Hurricane Katrina in 2005, religion appears to offer hope and an explanation for the pervasive suffering encountered in the face of overwhelming challenges (Pargament, 1997; Ellison, 1991; Koenig, 2002). Numerous studies have evaluated the psychological outcomes associated with both natural and human made disasters having measured variables related to human resilience such as the presence of specific mental health disorders and levels of personal growth (Assanangkornchai et al., 2004; Canino et al., 1990; North et al., 1997; Rubonis & Bickman, 1991). Other studies evaluated strategies for dealing with disaster such as employing religious forms of coping and how these strategies influence the psychological wellbeing of disaster survivors (Pargament et al., 1990; Ano & Vasconcelles, 2005).

This particular study sought to broaden the research related to coping with disaster by investigating the impact of multiple forms of coping, both religious and general, as well as other religious and demographic factors upon the presence of mental health distress for religious persons directly affected by a major natural disaster nearly three years after the event. In particular, this study highlights the interrelationships
between demographic and religious variables and religious forms of coping as they impact the presence of mental health distress.

**Important demographic and religious variables for mental health distress**

After 33 months of recovery and rebuilding throughout the state of Mississippi, United Methodist Church leaders, including both clergy and laity members, indicated that their levels of personal losses experienced immediately after Hurricane Katrina made landfall, their frequency of participation in religious activities, and their amount of involvement in recovery activities offered significant influence upon the presence of mental health distress. To be specific, among this sample, individual who experienced less subjective loss from the storm, participated in more religious activities, and were less involved with recovery efforts in the third year after the disaster reported to be less likely to experience mental health distress. These three factors were identified as significant after accounting for various demographic factors such as age, race, gender, ordination status, and education level.

Among the participants in this study, a higher frequency of prayer, worship attendance, and utilization of religious study material helped to insulate against the presence of mental health distress. This finding is consistent with earlier research outcomes in which religious activities such as prayer, attending worship services, and Bible study were found to serve as a supportive mechanism for persons having experienced a large scale disaster (Ellison, 1991; Koenig, 2002).

For persons participating in the current study, greater involvement in disaster recovery activities within the third year after the disaster was significantly predictive of
increased likelihood of mental health distress. Likewise, a report of greater personal losses increased the likelihood of mental health distress. This finding supports the results of Assanangkornchai et al. (2004) study in which persons experiencing severe losses following a flood disaster were 2.22 to 1 more likely to have elevated Mental Health Distress.

**Religious coping versus general coping**

Data gathered by means of Carver’s (1997) Brief Coping Orientation to Problems Experienced Scale indicated that negative forms of general coping (i.e., drinking alcohol to manage stress, using self-criticism, etc.) adds significantly to the regression model, but more positive forms of coping does not. Therefore, this means that individuals who engaged in mal-adaptive forms of coping were more likely to have indicated the presence of mental health distress while more adaptive coping strategies neither contributed to mental health distress nor insulated participants against it.

With general forms of coping accounted in the regression analysis, the positive and negative forms of religious coping (Pargament et al., 2000) were added to the regression equation. Interestingly, neither of these factors for religious coping contributed significantly to the model after controlling for all the demographic and religious variables. In other words, religious coping as measured by the Brief Religious Coping Scale did not contribute anything that was not already accounted by the general coping variables along with the other demographic and religious variables measured among the participants of this study. A closer look at the role of positive and negative forms of both types of coping (i.e., religious and general coping) suggested that positive
coping strategies did not significantly predict of mental health distress, and that only negative forms of coping that were not overtly religious were significantly predictive of more mental health distress. The results of the current study do not fully support findings by Pargament et al. (1990) and Pargament et al. (1994) that reportedly found that measured variables for religious coping were significantly predictive of lower levels of mental health distress even after accounting for non-religious coping variables.

Among those participating in the current study, 40% were ordained ministers, and the others were church leaders selected by their local congregations as representatives to the annual meeting of the statewide church organization. The special characteristics of this sample (i.e., a highly religious sample) as well as the relative high prevalence of involvement in disaster recovery activities may offer some explanation in this discrepancy with previous research. For persons that made up this population, all forms of coping have been more religious in nature (e.g., use of prayer, bible study, giving of time and energy), therefore, distinctions between coping strategies that are overtly religious may be less unique when compared to coping strategies that are not specifically religious in nature.

When evaluating the importance of these variables separately according to positive and negative features, both types of coping (religious and general) contribute important variance only through the negative variable. Looking at the beta coefficients for the regression model that includes both types of coping variables, both religious and general coping in the positive form fail the test for significance. This is compared to the negative forms of both types of coping in which negative general coping significantly
predicts mental health distress while negative religious coping is moderately important in predicting mental health distress.

The distinction between negative and positive forms of religious coping found in this analysis is consistent with results from previous studies. Pargament et al. (1998) found that negative religious coping correlated with various measures comparable to mental health distress. Positive forms of religious coping correlated with measures for personal growth but not for measures related to mental health distress. Therefore, positive forms of coping may be beneficial in ways not measured in this study. Negative forms of coping may be more important when considering negative mental health related outcomes. This distinction should be considered when evaluating outcomes for victims of natural disaster.

**Interrelationships among demographic, religious, and coping variables**

This study utilized path analysis to evaluate the interrelationships between all the variables as they contribute to the presence of mental health distress among the respondents. The general forms of coping were excluded from the path analysis in order to assess the specific role of religious coping. Involvement in disaster recovery activities and the utilization of negative forms of religious coping were significant variables in relationship to mental health distress. Negative religious coping had a significant direct and positive relationship to mental health distress. Consistent with other studies (Pargament, 1997; Ano & Vasconcelles, 2005; Pargament et al., 1998) that measure positive and negative forms of religious coping, negative religious coping in this study
related directly with the presence of mental health distress while positive religious coping had no direct relationship to mental health distress.

Negative religious coping did not serve as a mediating variable between other demographic and religious variables and the variable for mental health distress as was expected. Instead, the measure for involvement in disaster recovery served as an important mediating variable between several religious and demographic variables and mental health distress. Lower levels of religious salience (the importance of religiousness to the participant), greater involvement in religious activities, being an ordained minister, higher levels of perceived losses nearly three years after the storm, and continuing to live closer to areas more greatly affected by the disaster were factors that encouraged involvement in recovery activities a participant reported experiencing. None of these five religious or demographic factors offered significant direct effects upon mental health distress; instead, each of these variables was indirectly related to mental health distress mediated through disaster recovery involvement.

When assessing the interrelationships between the variables in predicting mental health distress, it is important to note that the factors for religious salience and religious participation offered an insulating effect upon mental health distress among persons in this study. The more a person valued his or her religious experience as well as the more that person participated in religious activities, the less likely that person was to report the presence of mental health distress. When looking at the direct effects of both of these variables upon involvement in disaster recovery activities over the third year after the disaster, persons that participated at a higher level in religious activities such as prayer and worship attendance were more likely to be involved in higher levels of recovery.
involvement while persons that reported higher levels of religious salience were less likely to be involved in recovery activities.

Persons reporting to be ordained ministers and currently living in Mississippi counties that were most affected by the disaster also were directly involved in disaster recovery activities based upon the path model, but neither of these factors significantly related to mental health distress directly. Both offered relatively small insulating effects upon mental health distress, but these values were offset by indirect effects that were positive in relation to mental health distress.

**Contributions to the Religious Community**

While this study specifically studied the demographic and religious factors associated with mental health distress among United Methodist leaders following Hurricane Katrina, the implications of this study may be generalized to religious leaders of other denominations as they respond to various disasters. An important finding of this study was the significance of disaster recovery involvement as a mediator between factors associated with religious participation and being an ordained minister and the factor for mental health distress. Just as the United Methodist Church in Mississippi can now recognize, denominational groups that organize responses to disasters may wish to account for the risk for mental health distress among the volunteers and employees engaged in recovery efforts in order to develop appropriate strategies for monitoring and managing mental health distress.
**Contributions to the Field of Counseling**

The findings of this study may contribute to the field of counseling, particularly to counselor training and crisis counseling, in regard to the role of positive and negative forms of coping, including religiously based methods of coping, as it applies to mental health outcomes and crisis counseling in times following a major disaster. In particular, the results of this study suggest that in the wake of large scale natural disaster, negative forms of coping, whether the coping is overtly religious or not, have negative impacts upon persons of faith in the form of increased prevalence of mental health distress. Counseling education programs providing training for crisis counseling should distinguish between positive and negative forms of coping, including religious coping strategies, in order to help counseling students develop skills for encouraging helpful coping strategies among disaster victims.

The results of this study demonstrated that persons that report persistent losses nearly three years after Hurricane Katrina in Mississippi reported higher levels of mental health distress. This coincides with findings of Arata et al. (2000) who found that continued resource loss six and one half years after a technological disaster significantly related to higher levels of symptoms of depression, anxiety, and chronic post-traumatic stress disorder. Even though the old adage goes, “Time heals all wounds,” it may be reasonable to assume that in the wake of large scale disasters, recovery may be extremely slow for those most affected. In the specific case of residents of Mississippi impacted by Hurricane Katrina, many are still managing the very slow process of recovery 33 months after the disaster. With so many homes destroyed, the process of rebuilding, repopulating, and “getting things back to normal” will be extremely slow, and in some
cases, may never occur. This study, as well as others, provides evidence that the presence of mental health distress and other measures of mental health disorders persist years after the initial disaster in all likelihood due to the residual effects of losses and difficulty with recovery in general.

This study contributes to the literature regarding the important role of religious variables in disaster outcomes. The path analysis demonstrated that while religious factors such as religious participation and religious salience insulate against mental health distress following Katrina, these characteristics also influenced individual levels of involvement in disaster recovery. Involvement in long-term recovery efforts served as a mediating variable between these religious variables and mental health distress. Interestingly, religious salience had a significant inverse relationship with recovery involvement while religious participation had a significantly positive relationship. Neither of these variables demonstrated a significant direct relationship with mental health distress, but both had an inverse total effect upon mental health distress. The current findings confirm results of Ellison and George (1994) who demonstrated that religious participation enhanced social ties and social networks. Ellison (1991) also found that religious participation contributed to lower levels of depressive symptoms predominately among Caucasian churchgoers. The current study identified a similar complexity as did Schnittker (2001) who found that religious salience and religious participation interacted with one another in the prediction of depression. Schnittker reported that religious salience demonstrated a curvilinear relationship to depression with persons that reported either low or high levels of religious salience also reported higher levels of depression while those that reported moderate levels of religious salience
reported lower levels of depression. At the same time, religious participation demonstrated an inversely linear relationship.

Issues such as proximity to a natural disaster area and experiences of losses as a result of the natural disaster contribute to mental health distress even years after the disaster. Religious leaders that move closer to the disaster area in response to recovery volunteerism or employment are more likely to participate in disaster recovery efforts. Exposure to the disaster impact through participation in recovery activities increases the likelihood of experiencing mental health distress. Additionally, the results of this study indicate that persons of faith, especially clergy that participate in post-disaster recovery efforts, may be at higher risk for experiencing mental health distress because of their involvement in disaster recovery efforts. While first responders and disaster professionals experiencing specific training for managing the stressors of disaster, much of the long term recovery is provided by volunteers and church professionals serving the communities of their parishioners. As such, these persons, either due to proximity, personal experiences of losses, or professional role become engaged in the recovery process and therefore may be at risk for mental health distress.

In light of counselor training programs, this study gives reason to consider the role of the counselor as care provider in disaster recovery situations. Vicarious trauma and compassion fatigue requires deliberate strategies of self-care and management for counselors, and counselor training programs should include strategies for monitoring and managing the effects of disaster recovery involvement for care providers such as clergy as well as counselors.
Limitations to This Study

The participants in this study were limited to church leaders of the United Methodist Church in Mississippi. Therefore, generalization of these results must take into account the fact that the study participants represent a very specific group that does not necessarily represent other religious groups. Additionally, the dependent variable of this study, Mental Health Distress, may be related to numerous variables that were not or could not be measured by this study. For instance, persons who did not participate in the study because they turned down the offer to participate, chose to discontinue the survey, or may have been experiencing high levels of distress associated with Hurricane Katrina, their participation may have been different from participants in important ways.

The participants in this study included United Methodist Church leaders, therefore, questions regarding religious conservatism, religious participation, religious salience, and religious coping may be routinely inflated due to response bias. The presence of such a bias would decrease the predictive power of the regression and path analyses for measure associated with religiousness. The responses to questions in this survey regarding religious participation, religious salience, and religious conservatism were heavily skewed toward higher levels. This skew may be anticipated for two reasons. An optimistic assumption of non-biased results would conclude that the leadership of the church tends to be relatively active in faith practices and have a high value for religiousness. On the other hand, a more cautious perspective that includes the possibility of response bias, would consider that persons in positions of church leadership may feel compelled to inflate responses to questions about religious participation, religious conservatism, and religious salience. Either way, lack of variability in these
measurements likely contributed to a less powerful model or less likelihood of finding important information.

Finally, methods by which several variables in this survey were measured and used provided limitations for this study. The first limitation of the variables used in this study involves the dependent variable, Mental Health Distress. This variable was obtained by using the General Health Questionnaire-12 (Goldberg, 1972; Goldberg & Williams, 1991). While the authors of the GHQ recommended a cutoff score resulting in a dichotomous variable indicating the presence or absence of mental health distress, the scoring of the instrument allows for a continuous range of scores from 0 to 12. This study utilized the dichotomous result in deference to the recommendations for the GHQ, but the strength of the statistical analysis may be improved by utilizing the potential variation in the continuous range of the GHQ score. The choice to use a dichotomous dependent variable in regression and path analysis reduces the statistical strength in evaluating the variations of the relationships (Hair et al., 1998).

As noted above, the three variables constructed from multiple demographic questionnaire items had Cronbach’s alpha scores that were mixed. Religious Salience had a relatively low score of .526 while the scores for Religious Participation and Religious Conservatism was .667 and .790, respectively. The use of multiple items to construct a variable may help to obtain a broader picture of that variable, but lower Cronbach’s alpha scores (less than .70, generally, and less than .60 in exploratory studies) suggests that the different items used for a single variable may actually be measuring different concepts. Therefore, the three items for Religious Salience as well as the three items for Religious Participation may be introducing confounding information as one
variable and contributing less predictive power in the regression analysis. For future purposes, these two variables should be reevaluated to ensure that the combinations of items are measuring the intended concept for the single variables (Hair et al., 1998).

This path model was relatively complex with 17 measured variables and over 200 cases. Additionally, many of the exogenous variables were significantly correlated. Therefore, the fitness of this model was moderately acceptable. Improving upon the fitness of the model may require reducing the number of variables, especially those that were correlated. For instance, the indication of being an ordained minister was correlated with conservatism, race, gender, and education level, and the variables for the report of proximity and personal losses were highly correlated. Elimination of some of these highly correlated variables would create a less complicated model. On the other hand, interesting results were identified among correlated variables. For instance, Religious Participation and Religious Salience were significantly correlated, but they demonstrated differing interactions.

**Suggestions for Future Research**

The items that make up both the Religious Coping Scale (Pargament et al., 2000) and the Coping Orientation to Problems Experienced Scale (Carver, 1997) utilize concepts that are predominately cognitive in nature. Religious participation in itself may be a form of coping and may include activities beyond cognitive strategies described in the Brief Religious Coping Scale. Religious participation can include non-cognitive behaviors including ritual activities, movement and dance, and music and chanting. Religious participation also involves direct involvement in the mission of the
organization. In the case of the recovery effort associated with Hurricane Katrina, the United Methodist Church, as well as many other religious organizations, became instrumentally involved in the recovery process. Professionals and volunteers associated with the United Methodist Church continue to participate in the recovery efforts due in part to a sense of duty or call to be engaged in ministry to others. Religious coping may include religious activism as a method of managing. As is measured by the Religious Coping Scale (Pargament et al., 2000), religious participation may be either positive or negative. The measure of religious participation in this study did not distinguish between cognitive and non-cognitive activities of religious participation. Future research may investigate the role of religious participation in coping and the specific non-cognitive activities of various types of religious participation that serve as a form of coping.

Religious participation may be similar to participation in other social organizations. This study did not account for membership in non-religious organizations that may have contributed to the recovery efforts, also. Future research should compare the role of religious participation with participation in non-religious affiliation to determine the importance of affiliation in relation to coping, disaster recovery involvement, and the outcomes of disaster.

Future research could address the limitations of this study which only includes a sample of United Methodist Church leaders in Mississippi following Hurricane Katrina. Other research may be conducted to expand the studied population and include persons of other Christian denominations and other religious practices throughout the disaster area. Additionally, these findings could be compared to persons that are non-religious or report low levels of religious salience and religious participation but engage in high levels of
disaster recovery involvement associated with Hurricane Katrina. For instance, do denominational and religious faith differences impact mental health distress and other mental health and religious outcomes among disaster survivors? How do persons with low levels of religious activity respond to the disaster as compared to more religiously active survivors? How do variables for religious activity interact with disaster recovery involvement to predict mental health distress?

Finally, variables measuring outcomes such as personal and emotional growth, religious growth, general physical health, and life satisfaction in place of the measure for mental health distress in this study could further elaborate the positive impacts of religious and general coping strategies among survivors of Hurricane Katrina in Mississippi and other areas in the region. Positive outcomes are distinct from negative outcomes such as depression, mental health distress, and poorer health. More research needs to be conducted to fully develop the understanding researchers have regarding religiousness and coping and the impact these variables have upon the various positive and negative outcomes associated with large scale disaster.

The current study has demonstrated that nearly three years following the Katrina disaster, United Methodist leaders remain very involved in recovery activities which can lead to increased presence of mental health distress. Clergy and persons impacted by the disaster are more likely to engage in recovery activities and therefore are at higher risk for mental health distress, however religious participation and religious salience help insulate against this outcome. While positive forms of religious coping seems to be non-significant, negative religious coping strategies contribute to a high potential for mental health distress. In light of previous research, the current study extends the body of
research on the subjects of coping and disasters, and the breadth and pervasiveness of this particular disaster presents unique problems to be evaluated when considering the impact of religiousness and personal wellbeing.
REFERENCES


APPENDIX A

QUARTER-PAGE SIZE FLYERS ANNOUNCING THE SURVEY

AND AN INCENTIVE DRAWING TO BE HELD

INVOLVING PARTICIPANTS

IN THE SURVEY
Win a $100 Cokesbury Gift Certificate!

To Enter:
Go by the Cokesbury Display
or
See Walter Frazier

Ask to take the Katrina Coping Survey

You will be asked to participate in a survey about religious coping in disaster situations as part of a doctoral dissertation project being conducted by Walter Frazier. Walter is an Ordained Deacon and serves as the Executive Director of the Grace Christian Counseling Center in Vicksburg. He is a doctoral student in the Department of Counseling, Educational Psychology, and Special Education at Mississippi State University.
APPENDIX B

APPROVAL FROM MISSISSIPPI ANNUAL CONFERENCE OF THE UNITED
METHODIST CHURCH TO CONDUCT RESEARCH AT THE ANNUAL
CONFERENCE MEETING JUNE 8 – 10, 2008
To whom it may concern:

This is a letter of permission. After conversation with Walter Frazier we are in agreement to permit him to conduct his research during our annual conference in June. We understand that he will be conducting a survey. If there are questions I can answer please contact me at (601) 354-0515.

Respectfully,

Rev. Steve Casteel
Director of Connectional Ministries
The Mississippi Annual Conference
May 2, 2008

Walter L. Frazier
1414 Cherry St
Vicksburg, MS 39180

RE: IRB Study #08-091: The Role of Religious Coping among Survivors of Natural Disaster

Dear Mr. Frazier:

The above referenced project was reviewed and approved via expedited review for a period of 5/2/2008 through 4/15/2009 in accordance with 45 CFR 46.110 #7. Please note the expiration date for approval of this project is 4/15/2009. If additional time is needed to complete the project, you will need to submit a Continuing Review Request form 30 days prior to the date of expiration. Any modifications made to this project must be submitted for approval prior to implementation. Forms for both Continuing Review and Modifications are located on our website at http://www.orc.msstate.edu.

Any failure to adhere to the approved protocol could result in suspension or termination of your project. Please note that the IRB reserves the right, at anytime, to observe you and any associated researchers as they conduct the project and audit research records associated with this project.

Please refer to your docket number (#08-091) when contacting our office regarding this project.

We wish you the very best of luck in your research and look forward to working with you again. If you have questions or concerns, please contact irb@research.msstate.edu or by phone at 662-325-3294.

Sincerely,

Katherine Crowley
Assistant IRB Compliance Administrator

cc: Dr. Scott Young
APPENDIX D

INFORMED CONSENT FOR PARTICIPATION

IN RESEARCH STUDY
Katrina Coping Survey

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH STUDY

Title of Study: The Role of Religious Coping among Survivors of Natural Disaster.

Study Site: Internet site using Survey Monkey and paper and pencil surveys at the Mississippi Annual Conference of the United Methodist Church held in Jackson, Mississippi in June 2008.

Name of Researcher(s) & University affiliation: Walter L. Frazier, MCP, LPC, NCC, Doctoral Candidate (Mississippi State University) J. Scott Young, Ph.D., Dissertation Chair (Mississippi State University)

Purpose of this research project: The purpose of this research is to improve the knowledge of counselors, counselor educators, and the public about the importance of different religious and non-religious coping variables for helping people manage MHD in times of natural disaster.

How will the research be conducted? Participants will be asked to complete an online or paper and pencil questionnaire about their demographic information, faith experience, coping strategies, and level of MHD. No names or identifying information will be collected, and all information will be kept in a locked file cabinet in the office of Walter L. Frazier, 1414 Cherry Street, Vicksburg, MS, 39180.

Estimated time of completion: 15 – 20 minutes.

Risks involved in participation in this study: There is no foreseeable risk associated with participation in this research study.

Benefits of this research to the counseling profession: The results of this research study will inform counselors and counselor educators the benefits of different religious and non-religious coping strategies for helping people manage MHD in times of natural disaster.

Confidentiality: Confidentiality will be strictly observed. No names or identifying information will be collected, and all information will be kept in a locked file cabinet in the office of Walter L. Frazier, 1414 Cherry Street, Vicksburg, MS, 39180.

Who do I contact with research questions? If you should have any questions about this research project, please feel free to contact Walter L. Frazier, MCP, LPC, NCC at walter@walterfrazier.com or 601-636-5703 or J. Scott Young, Ph.D., jsyoung@colled.msstate.edu or 662-325-9324 For additional information regarding your rights as a research subject, please feel free to contact the MSU Regulatory Compliance Office at 662-325-5220.

Voluntary participation: Please understand that your participation in this research project is strictly voluntary; your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled; and you may discontinue your participation at any time without penalty and still submit your responses.

Please keep a copy of this form for your records.
APPENDIX E

INSTRUCTIONS AT THE FRONT OF THE SURVEY
Katrina Coping Survey

Please, read the instructions and complete the survey to the best of your ability.

Remember, you may discontinue at any time. Also, you may skip an item, or when given the option, you may indicate that you do not want to answer a particular question.

Thank you for your willingness to participate in this survey. Your assistance is much appreciated!
APPENDIX F

QUARTER-PAGE SIZE ENTRY FORM FOR INCENTIVE DRAWING
Thank you for participating in the survey!

If you wish to be included in a drawing for a $100 Cokesbury Gift Certificate, please enter your name below.

The drawing will be held and the winner will be announced on the last day of the Conference at the end of the final Plenary Session. You must be present at the time of the announcement to win.

________________________________________
Please Print!
APPENDIX G

GENERAL HEALTH QUESTIONNAIRE
General Health Questionnaire

We want to know how your health has been in general over the last few weeks. Please read the questions and each of the four possible answers below. Indicate the one answer that best applies to you. Thank you for answering all the questions.

Have you recently…

1. been able to concentrate on what you’re doing?
   - better than usual
   - same as usual
   - less than usual
   - much less than usual

2. lost much sleep over worry?
   - not at all
   - no more than usual
   - rather more than usual
   - much more than usual

3. felt that you are playing a useful part in things?
   - more so than usual
   - same as usual
   - less so than usual
   - much less than usual

4. felt capable of making decisions about things?
   - more so than usual
   - same as usual
   - less so than usual
   - much less than usual

5. felt constantly under strain?
   - not at all
   - no more than usual
   - rather more than usual
   - much more than usual

6. felt you couldn’t overcome your difficulties?
   - not at all
   - no more than usual
   - rather more than usual
   - much more than usual

7. been able to enjoy your normal day to day activities?
   - more so than usual
   - same as usual
   - less so than usual
   - much less than usual

8. been able to face up to your problems?
   - more so than usual
   - same as usual
   - less so than usual
   - much less than usual

9. been feeling unhappy or depressed?
   - not at all
   - no more than usual
   - rather more than usual
   - much more than usual

10. been losing confidence in yourself?
    - not at all
    - no more than usual
    - rather more than usual
    - much more than usual

11. been thinking of yourself as a worthless person?
    - not at all
    - no more than usual
    - rather more than usual
    - much more than usual

12. been feeling reasonably happy, all things considered?
    - more so than usual
    - same as usual
    - less so than usual
    - much less than usual
APPENDIX H

BRIEF RELIGIOUS COPING SCALE
The following items deal with ways you coped with your experience of the Hurricane Katrina Disaster. There are many ways to try to deal with problems. **These items ask what you did to cope with the disaster brought by Hurricane Katrina.** Obviously different people deal with things in different ways, but we are interested in how you tried to deal with your experience of the aftermath of Hurricane Katrina. Each item says something different about a particular way of coping. We want to know to what extent you did what the item says. Don’t answer on the basis of what worked, but whether or not you did it. Answer each item separately in your mind. Give one response for each item.

<table>
<thead>
<tr>
<th></th>
<th>1 – Not at all</th>
<th>2 – Somewhat</th>
<th>3 – Quite a bit</th>
<th>4 – A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Considering my response to the disaster, since Hurricane Katrina made landfall, I have:</strong></td>
<td><strong>Not at all</strong></td>
<td><strong>Somewhat</strong></td>
<td><strong>Quite a bit</strong></td>
<td><strong>A great deal</strong></td>
</tr>
<tr>
<td>13. Tried to put my plans into action together with God.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Questioned the power of God.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. Wondered what I did for God to punish me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. Sought God’s love and care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. Decided the Devil made this happen.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Wondered whether my church had abandoned me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. Sought help from God in letting go of my anger.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. Wondered whether God had abandoned me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. Felt punished by God for my lack of devotion.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. Focused on religion to stop worrying about my problems.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. Questioned God’s love for me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. Looked for a stronger connection with God.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25. Tried to see how God might be trying to strengthen me in this situation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. Asked forgiveness for my sins.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
APPENDIX I

BRIEF COPING ORIENTATION TO PROBLEMS EXPERIENCED SCALE
BRIEF COPING ORIENTATION TO PROBLEMS EXPERIENCED SCALE

The following items deal with ways you coped with your experience of the Hurricane Katrina Disaster. There are many ways to try to deal with problems. **These items ask what you did to cope with the disaster brought by Hurricane Katrina.** Obviously different people deal with things in different ways, but we are interested in how you tried to deal with your experience of the aftermath of Hurricane Katrina. Each item says something different about a particular way of coping. We want to know to what extent you did what the item says. Don’t answer on the basis of what worked, but whether or not you did it. Answer each item separately in your mind. Give one response for each item.

<table>
<thead>
<tr>
<th></th>
<th>0 – I didn’t do this at all</th>
<th>1 – I did do this a little bit</th>
<th>2 – I did this a medium amount</th>
<th>3 – I did this a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.</td>
<td>I’ve been concentrating my efforts on doing something about the situation I’m in.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>28.</td>
<td>I’ve been saying things to let my unpleasant feelings escape.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>29.</td>
<td>I’ve been trying to come up with a strategy about what to do.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>30.</td>
<td>I’ve been trying to find comfort in my religion or spiritual beliefs.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>31.</td>
<td>I’ve been making fun of the situation.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>32.</td>
<td>I’ve been looking for something good in what is happening.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>33.</td>
<td>I’ve been trying to get advice or help from other people about what to do.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>34.</td>
<td>I’ve been saying to myself, “this isn’t real.”</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>35.</td>
<td>I’ve been making jokes about it.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>36.</td>
<td>I’ve been taking action to try to make the situation better.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>37.</td>
<td>I’ve been criticizing myself.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>38.</td>
<td>I’ve been refusing to believe that it has happened.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>39.</td>
<td>I’ve been getting emotional support from others.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>40.</td>
<td>I’ve been blaming myself for things that happened.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
**BRIEF COPING ORIENTATION TO PROBLEMS EXPERIENCED SCALE**

The following items deal with ways you coped with your experience of the Hurricane Katrina Disaster. There are many ways to try to deal with problems. These items ask what you did to cope with the disaster brought by Hurricane Katrina. Obviously different people deal with things in different ways, but we are interested in how you tried to deal with your experience of the aftermath of Hurricane Katrina. Each item says something different about a particular way of coping. We want to know to what extent you did what the item says. Don’t answer on the basis of what worked, but whether or not you did it. Answer each item separately in your mind. Give one response for each item.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41.</td>
<td>I’ve been praying or meditating.</td>
</tr>
<tr>
<td>42.</td>
<td>I’ve been getting comfort and understanding from someone.</td>
</tr>
<tr>
<td>43.</td>
<td>I’ve been turning to work or other activities to take my mind off things.</td>
</tr>
<tr>
<td>44.</td>
<td>I’ve been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.</td>
</tr>
<tr>
<td>45.</td>
<td>I’ve been giving up trying to deal with it.</td>
</tr>
<tr>
<td>46.</td>
<td>I’ve been thinking hard about what steps to take.</td>
</tr>
<tr>
<td>47.</td>
<td>I’ve been trying to see it in a different light, to make it seem more positive.</td>
</tr>
<tr>
<td>48.</td>
<td>I’ve been expressing my negative feelings.</td>
</tr>
<tr>
<td>49.</td>
<td>I’ve been using alcohol or other drugs to make myself feel better.</td>
</tr>
<tr>
<td>50.</td>
<td>I’ve been using alcohol or other drugs to help me get through it.</td>
</tr>
<tr>
<td>51.</td>
<td>I’ve been learning to live with it.</td>
</tr>
<tr>
<td>52.</td>
<td>I’ve been giving up the attempt to cope.</td>
</tr>
<tr>
<td>53.</td>
<td>I’ve been accepting the reality of the fact that it has happened.</td>
</tr>
<tr>
<td>54.</td>
<td>I’ve been getting help and advice from other people.</td>
</tr>
</tbody>
</table>

Considering my response to the disaster, since Hurricane Katrina made landfall:

<table>
<thead>
<tr>
<th></th>
<th>0 – I didn’t do this at all</th>
<th>1 – I did do this a little bit</th>
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<tbody>
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<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>42.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>43.</td>
<td>0</td>
<td>1</td>
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</tr>
<tr>
<td>44.</td>
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<tr>
<td>45.</td>
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<tr>
<td>46.</td>
<td>0</td>
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<td>3</td>
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<tr>
<td>47.</td>
<td>0</td>
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<td>3</td>
</tr>
<tr>
<td>48.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>49.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>50.</td>
<td>0</td>
<td>1</td>
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</tr>
<tr>
<td>51.</td>
<td>0</td>
<td>1</td>
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<td>3</td>
</tr>
<tr>
<td>52.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>53.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>54.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
APPENDIX J

PERMISSION CONTRACT FOR GENERAL HEALTH QUESTIONNAIRE - 12
MEMORANDUM OF AGREEMENT

made this 13th day of May 2008

between GL Assessment Limited of The Chiswick Centre, 414 Chiswick High Road, London W4 5TF (hereinafter called ‘the Publishers’)

and Walter L. Frazier, Grace Christian Counseling Center, 1414 Cherry Street, Vicksburg, MS 39180 (hereinafter called ‘the Licensee’).

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   The specified use and purpose of the Material is for: “The Role of Religious Coping Among Survivors of Natural Disaster”

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13. The Licensee shall not assign or in any way transfer this licence without the prior written consent of the Publishers.

14. This Agreement shall be terminated without further notice in any of the following circumstances:

(a) If the Licensee fails to make any payment specified in this Agreement on the due date.

(b) If the Licensee shall at any time be in breach of any of the terms and conditions of this Agreement and such breach is not remedied within 15 days of receipt of written notice thereof.

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(c) If the Licensee is declared insolvent or bankrupt or goes into liquidation (other than voluntary liquidation for the purpose of reconstruction only) or if a Receiver is appointed.

Termination shall be without prejudice to any monies which may be due to the Publishers from the Licensee and without prejudice to any claim which the Publishers may have for damages and/or otherwise.

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16. This Agreement shall not be amended or modified in any way other than by an agreement in writing and signed by both parties or their duly authorised representatives and shall come into effect on receipt of the payment in full as specified above and a counter-signed copy of this Agreement.

17. This Agreement shall be governed by and construed in all respects in accordance with English Law.

AS WITNESS THE HANDS OF THE PARTIES
hereto the day and year first above written

Signed on behalf of GL Assessment Limited

.............................................................................................................

David Vincent, Head of Sales  date

Signed on behalf of the Licensee, ............

.............................................................................................................

Name of Licensee  date

Reader Number:  119494
Qualification Code:  10630
APPENDIX K

EMAIL PERMISSION LETTER FOR BRIEF RELIGIOUS COPING SCALE SENT BY
KEN PARGAMENT
Dear Walter:

You have my permission to use both scales. As far as which to use, it depends on whether you want a comprehensive view of religious coping or a snapshot view. Pragmatics are important too of course, whether you have the space for the full version. I think the full RCOPE is more informative but the Brief version provides valuable information if space is limited.

Good luck with the study,

Ken
APPENDIX L

PERMISSION PAGE FOR BRIEF COPING ORIENTATION TO PROBLEMS
EXPERIENCED SCALE
**Brief COPE**

The items below are an abbreviated version of the COPE Inventory. We have used it in research with breast cancer patients, with a community sample recovering from Hurricane Andrew, and with other samples as well. At present, none of that work has been published, except for an article reporting the development of the Brief COPE, which includes information about variable structure and internal reliability from the hurricane sample (citation below). The Brief COPE has also been translated into French and Spanish (see below), as separate publications.

We created the shorter item set partly because earlier patient samples became impatient at responding to the full instrument (both because of the length and redundancy of the full instrument and because of the overall time burden of the assessment protocol). In choosing which items to retain for this version (which has only 2 items per scale), we were guided by strong loadings from previous variable analyses, and by item clarity and meaningfulness to the patients in a previous study. In creating the reduced item set, we also "tuned" some of the scales somewhat (largely because some of the original scales had dual focuses) and omitted scales that had not appeared to be important among breast cancer patients. In this way the positive reinterpretation and growth scale became positive reframing (no growth); focus on and venting of emotions became venting (focusing was too tied to the experiencing of the emotion, and we decided it was venting we were really interested in); mental disengagement became self-distraction (with a slight expansion of mentioned means of self-distraction). We also added one scale that was not part of the original inventory--a 2-item measure of self-blame--because this response has been important in some earlier work.

You are welcome to use all scales of the Brief COPE, or to choose selected scales for use. Feel free as well to adapt the language for whatever time scale you are interested in.

Citation: Carver, C. S. (1997). You want to measure coping but your protocol’s too long: Consider the Brief COPE. *International Journal of Behavioral Medicine, 4*, 92-100. [abstract]

Excerpted from website: http://www.psy.miami.edu/faculty/ccarver/sclBrCOPE.html
APPENDIX M

RESEARCHER DERIVED DEMOGRAPHIC QUESTIONNAIRE
DEMOGRAPHIC QUESTIONNAIRE

55. Reflecting over the past year (since the last Annual Conference), what level of distress would you say you have been experiencing in relation to managing your particular circumstances around the disaster brought by Hurricane Katrina? (Please, mark one answer.)

  __ No distress at all.
  __ Very little distress.
  __ A moderate amount of distress.
  __ A high level of distress.
  __ I do not wish to answer this question.

56. Reflecting over the past year (since the last Annual Conference), how well would you say you have been managing stress in general? (Please, mark one answer.)

  __ I have been managing stress very well.
  __ I have been struggling just a little to manage my stress.
  __ I have been having a moderate level of difficulty managing stress.
  __ I have been unable to manage stress.
  __ I do not wish to answer this question.

57. Reflecting over the past year (since the last Annual Conference), to what extent have you been involved in recovery efforts in a volunteer or professional capacity associated specifically with Hurricane Katrina (for yourself or for others)?

I have been involved in recovery over the past year:

  __ none.
  __ on one occasion.
  __ on 2 to 4 occasions.
  __ on a monthly to every other month basis.
  __ on a daily to weekly basis.
  __ Don’t know, No answer

Briefly describe your involvement: ____________________________________________
_____________________________________________________________________

_____________________________________________________________________

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DEMOGRAPHIC QUESTIONNAIRE

58. How often do you attend religious services? (Check one that best describes your level of participation.)

   __ Never
   __ Less than once a year
   __ About once or twice a year
   __ Several times a year
   __ About once a month
   __ 2 - 3 times a month
   __ Nearly every week
   __ Every week
   __ Several times a week or more
   __ Don’t know, No answer

59. In the past year, how often have you read religious material (Scripture, religious literature, etc.)? (Choose one.)

   __ Never
   __ About once or twice in the past three months
   __ About once or twice a month
   __ Weekly
   __ 2 – 3 times each week
   __ Nearly every day each week
   __ Daily
   __ Don’t know, No answer

60. In the past year, how often have you participated in personal religious activities such as prayer and meditation? (Choose one.)

   __ Never
   __ About once or twice in the past three months
   __ About once or twice a month
   __ Weekly
   __ 2 – 3 times each week
   __ Nearly every day each week
   __ Daily
   __ Don’t know, No answer
DEMOGRAPHIC QUESTIONNAIRE

61. The Bible is God’s word and everything happened or will happen exactly as it says.
   __ Strongly agree
   __ Agree
   __ Neither agree nor disagree
   __ Disagree
   __ Strongly disagree

62. The Bible is the answer to all important human problems.
   __ Strongly agree
   __ Agree
   __ Neither agree nor disagree
   __ Disagree
   __ Strongly disagree

63. In general, how important are religious and spiritual beliefs in you day to day life?
   __ Unimportant
   __ Of little importance
   __ Moderately important
   __ Important
   __ Very important

64. In terms of religiousness or spirituality, how would you rate yourself?
   __ Not at all religious or spiritual
   __ Very little religious or spiritual
   __ Moderately religious or spiritual
   __ Mostly Religious or spiritual
   __ Very religious or spiritual
65. How strong of a United Methodist would you consider yourself?

___ Not very strong at all
___ Somewhat strong
___ Moderately strong
___ Strong
___ Very strong
___ I am not United Methodist

66. On a scale from 1 to 8 with 1 being “None at all.” And 8 being “A very significant amount.” indicate the amount of personal loss (Property Damage, Loss of Employment, Injury to Self or Loved Ones, Death of a Loved One) you experienced immediately after Hurricane Katrina:

Please check only one:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>None at all.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>A very significant amount.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
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</tbody>
</table>

67. On a scale from 1 to 8 with 1 being “None at all.” And 8 being “A very significant amount.” indicate the amount of personal losses due to Hurricane Katrina are you still experiencing today?

Please check only one:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>None at all.</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>A very significant amount.</td>
<td>☐</td>
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</table>
68. What Mississippi County do you **CURRENTLY** live in? (Check only one.)

<table>
<thead>
<tr>
<th>Adams County</th>
<th>Jackson County</th>
<th>Prentiss County</th>
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<tbody>
<tr>
<td>Alcorn County</td>
<td>Jasper County</td>
<td>Quitman County</td>
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<td>Amite County</td>
<td>Jefferson County</td>
<td>Rankin County</td>
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<td>Attala County</td>
<td>Jefferson Davis County</td>
<td>Scott County</td>
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<tr>
<td>Benton County</td>
<td>Jones County</td>
<td>Sharkey County</td>
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<tr>
<td>Bolivar County</td>
<td>Kemper County</td>
<td>Simpson County</td>
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<td>Calhoun County</td>
<td>Lafayette County</td>
<td>Smith County</td>
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<td>Carroll County</td>
<td>Lamar County</td>
<td>Stone County</td>
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<tr>
<td>Chickasaw County</td>
<td>Lauderdale County</td>
<td>Sunflower County</td>
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<tr>
<td>Choctaw County</td>
<td>Lawrence County</td>
<td>Tallahatchie County</td>
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<tr>
<td>Claiborne County</td>
<td>Leake County</td>
<td>Tate County</td>
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<td>Clarke County</td>
<td>Lee County</td>
<td>Tippah County</td>
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<td>Clay County</td>
<td>Leflore County</td>
<td>Tishomingo County</td>
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<td>Coahoma County</td>
<td>Lincoln County</td>
<td>Tunica County</td>
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<tr>
<td>Copiah County</td>
<td>Lowndes County</td>
<td>Union County</td>
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<td>Covington County</td>
<td>Madison County</td>
<td>Walthall County</td>
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<td>DeSoto County</td>
<td>Marion County</td>
<td>Warren County</td>
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<tr>
<td>Forrest County</td>
<td>Marshall County</td>
<td>Washington County</td>
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<tr>
<td>Franklin County</td>
<td>Monroe County</td>
<td>Wayne County</td>
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<td>George County</td>
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<td>Webster County</td>
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<td>Greene County</td>
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<td>Wilkinson County</td>
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<td>Grenada County</td>
<td>Newton County</td>
<td>Winston County</td>
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<td>Yalobusha County</td>
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<td>Harrison County</td>
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<td>Yazoo County</td>
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<td>Holmes County</td>
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<td>Humphreys County</td>
<td>Perry County</td>
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<tr>
<td>Issaquena County</td>
<td>Pike County</td>
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<tr>
<td>Itawamba County</td>
<td>Pontotoc County</td>
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<td></td>
<td></td>
<td>I do not currently live in Mississippi</td>
</tr>
</tbody>
</table>
DEMOGRAPHIC QUESTIONNAIRE

69. What Mississippi County did you live in when Hurricane Katrina made landfall on August 29, 2005?

- Adams County
- Alcorn County
- Amite County
- Attala County
- Benton County
- Bolivar County
- Calhoun County
- Carroll County
- Chickasaw County
- Choctaw County
- Claiborne County
- Clarke County
- Clay County
- Coahoma County
- Copiah County
- Covington County
- DeSoto County
- Forrest County
- Franklin County
- George County
- Greene County
- Grenada County
- Hancock County
- Harrison County
- Hinds County
- Holmes County
- Humphreys County
- Issaquena County
- Itawamba County
- Jackson County
- Jasper County
- Jefferson County
- Jefferson Davis County
- Jones County
- Kemper County
- Lafayette County
- Lamar County
- Lauderdale County
- Lawrence County
- Leake County
- Lee County
- Leflore County
- Lincoln County
- Lowndes County
- Madison County
- Marion County
- Marshall County
- Monroe County
- Montgomery County
- Neshoba County
- Newton County
- Noxubee County
- Oktibbeha County
- Panola County
- Pearl River County
- Perry County
- Pike County
- Pontotoc County
- Prentiss County
- Quitman County
- Rankin County
- Scott County
- Sharkey County
- Simpson County
- Smith County
- Stone County
- Sunflower County
- Tallahatchie County
- Tate County
- Tippah County
- Tishomingo County
- Tunica County
- Union County
- Walthall County
- Warren County
- Washington County
- Wayne County
- Webster County
- Wilkinson County
- Winston County
- Yalobusha County
- Yazoo County

- I did not live in Mississippi when Hurricane Katrina made landfall.
70. **Prior to August 29, 2005**, when Hurricane Katrina made landfall, had you ever:

   - Been hospitalized for mental health treatment?  __ Yes  __ No  __ No Answer
   - Received mental health treatment in an outpatient setting?  __ Yes  __ No  __ No Answer

71. What is your race? (Select all that apply.)

   __ Caucasian
   __ African-American
   __ Hispanic
   __ Asian-American
   __ Pacific Islander
   __ Other

72. What is the highest level of education you have obtained? (Please select only one.)

   __ Completed Junior High School
   __ High School Diploma
   __ Community College Degree
   __ Bachelor’s Degree
   __ Master’s Degree
   __ Doctoral Degree

73. Are you an Ordained Minister?  __ Yes  __ No  __ No Answer

74. What is your age in years?  _____

75. What is your gender?  __ Female  __ Male